

**Treating Pediatric
Bed-wetting with
Acupuncture &
Chinese Medicine**

by Robert Helmer



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"A wonderfully insightful answer for the practitioners, patients, and families of those who suffer from this devastating difficulty. Robert Helmer has provided a wealth of information and depth of research previously not available in the West. Using the considerable wisdom of traditional Chinese medicine and a profoundly compassionate approach, we now have access to an ancient but fully modern method to resolve this multifaceted problem. Bravo."

Randine Lewis, MSOM, L.Ac., Ph.D.

Author, *The Infertility Cure*

"Paediatric enuresis is a big problems without a real solution in our modern Western medicine. Most treatments that can be offered by Western medicine can cause serious side effects. Nevertheless, one has to be familiar with the Western medical theory to understand the problems arising out of our "normal" treatment methods. Our small patients normally already have an odyssey of unsuccessful Western treatment behind them before they come for treatment with Chinese medicine. For a Chinese medical therapist, it is of utmost importance to know how to deal with the side effects of Western medicine. The book at hand explains this in an outstanding way. In conclusion, this book is a positive enrichment to the Chinese medical literature and helps to shed light on this difficult, complex topic that puts such a large burden on small patients."

Dr. med Dieter Klein, M.D.

Neunkirchen-Seelscheid, Germany

"This book is an excellent resource for practitioners of Chinese medicine interested in including pediatrics in their practice. Helmer has compiled an impressive amount of clinical information on treating enuresis. By understanding the TCM approach to this very common pediatric condition, practitioners can offer a valuable treatment option to parents and gain valuable insight into the general field of TCM pediatrics."

Kyle Cline, LMT

Author, *Chinese Pediatric Massage: A Practitioner's Guide*

"This book is built around a treasure house of numerous Chinese studies on the treatment of enuresis enabling the reader to view and treat the problem from various perspectives. How to put all this knowledge into practice is demonstrated in quite a few well structured case histories. What makes the book even more useful not only to the non-M.D. reader, but also to me as a M.D. and general practitioner, is the introductory section on the Western view on pathology and treatment of bedwetting which offers the most up to date information in an easily readable text. This book takes the integration of Western and Chinese medical approaches one step further."

Dr. Andreas Höll, D.O.

Mödling, Austria

"Instead of writing a book explaining the theoretical basis and standard pattern discrimination of nocturnal enuresis, Helmer presents a vast and varied amount of real-life clinical literature from China. The information gained when mining his translations is eye-opening. For the first time in the treatment of this common pediatric complaint, Western practitioners can base their treatments on the same amount of material which builds the base of clinical practice of expert Chinese doctors."

Simon Becker, Dipl. Ac. & CH (NCCAOM, SBO-TCM)

Author, *The Treatment of Cardiovascular Diseases with Chinese Medicine*
and *A Handbook of Chinese Hematology*

"I have done quite a bit of pediatric acupuncture and herbology for a long time, and so I know that this is a very good book by an experienced clinician and researcher. The author is very thorough in Western and Chinese diagnosis and treatment of enuresis and he has also done a convincing job that his modality of diagnosis and treatment really works. I could also tell that the author has treated many children with this problem. I highly recommend this book to any physician and acupuncturist who treat this difficult, recalcitrant problem."

Miki Shima, L.Ac., OMD

Author, *Channel Divergences: Deeper Pathways of the Web;*
The Medical I Ching

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Preface

This book is a clinical manual on the treatment of pediatric enuresis or bed-wetting. It is based on my research and translation of the Chinese medical literature, my studies with numerous Chinese medical pediatricians in China over a number of years, and my own clinical practice of Chinese medical pediatrics in Canada. For 2,000 years, Chinese medical practitioners have treated pediatric enuresis using a variety of modalities, and, over the last 25 years, clinical trials have proven that these treatments are effective for the cure of this condition. Modern Western medicine, on the other hand, does not have an effective treatment for this disease, and, in terms of biomedical pathophysiology, there is no known cause in 97-99% of cases of pediatric bed-wetting. In fact, within the Chinese medical literature, there is far more research on these traditional Chinese medical treatments for this condition than there is in English on the modern Western medical pharmaceuticals used to treat this disease. Unfortunately for practitioners of Chinese medicine and their patients, prior to this book, this information was only available in the Chinese language. I have also chosen to write about pediatric enuresis because it is easy to determine how effective the treatment has been. Therefore, the information in this book can be used for further research on the traditional Chinese medical (TCM) treatment of this disorder in the non-Chinese setting. I trust this book will help Chinese medicine grow and flourish in years to come and help establish TCM as an effective treatment for enuresis outside of China.

The book begins with discussions of the modern Western medical nosology, etiology, pathophysiology, diagnosis, and treatment of this common condition. This is followed by discussions of its modern Chinese medical disease causes and mechanisms, pattern discrimination, and standard, textbook treatment via acupunc-

ture, tuina, and internally administered herbal medicine. However, the bulk of the book is a presentation of summaries of numerous recently published Chinese clinical trials on the treatment of pediatric enuresis with a host of treatment modalities and protocols. This section of the book gives a better idea of how pediatric enuresis is actually treated in the People's Republic of China and with what outcomes.

My standard for the translation of Chinese medical terminology is Nigel Wiseman and Feng Ye's *A Practical Dictionary of Chinese Medicine*, Paradigm Publications, 1999. Medicinal identifications are based on Bensky et al.'s *Chinese Herbal Medicine: Materia Medica*, 3rd edition, Eastland Press, 2005. Readers may notice that there is no Chinese language bibliography. This is because the bibliographic information for each clinical trial is given in the body of the text. There is an English language bibliography as well as several, hopefully useful appendices. Entries in the English language bibliography are numbered. Where these sources are cited in the text, the reader will find a corresponding number in parentheses in order to identify the source.

Robert Helmer
June 2005

Introduction

“Enuresis” is a term of Greek origin that literally means “to expel urine.” In traditional Chinese medicine or TCM, this disease is usually referred to as *yi niao*. The literal translation of this into English is “loss of urine.” In North America, enuresis is what we commonly refer to as bed-wetting. The modern Western medical term for bed-wetting is nocturnal enuresis. This is described as the involuntary voiding of urine during sleep beyond the age of anticipated urinary control. This condition most commonly occurs during childhood. Therefore, pediatric enuresis is the primary focus of this book. Nevertheless, the basic pattern discrimination and treatment of enuresis is the same in adults or the elderly as it is in children. The only difference is that certain Chinese medical patterns of enuresis tend to be more prominent at certain ages.

There are two types of enuresis in modern Western medicine: primary and secondary. In TCM, this distinction is not truly necessary during diagnosis and treatment as long as the correct pattern has been identified. In modern TCM journals, the number of cases of each of the two respective types of enuresis is usually identified in the cohort description. However, the treatment is not changed based on these subtypes.

Primary nocturnal enuresis (PNE)

By far, primary nocturnal enuresis (PNE) is the most commonly occurring form of enuresis. It is distinguished as the type of enuresis found in individuals who can control their bladders during the day (for at least 6-12 months) but who have not been continuously dry at night for at least a six month period since infancy. In this type of enuresis, bed-wetting has to be present at least two times per month to make the diagnosis in children 3-6 years of age and at least one time per month in older individuals.

Secondary nocturnal enuresis (SNE)

Secondary nocturnal enuresis (SNE) refers to a relapse after control has been achieved for a period of at least six months. Twenty-five percent of bed-wetting cases are diagnosed as SNE. The prevalence of SNE as a percentage of all cases of nocturnal enuresis increases with age. In a study of New Zealand children, 7.9% of them developed SNE before they were 10 years of age. The most notable difference between the two types of enuresis, is that SNE (unlike PNE) is often caused by psychological factors. This aspect will be examined in further detail below under the causes of enuresis according to modern Western medicine.

When is wetting the bed not considered normal?

In modern Western medicine, enuresis may be diagnosed in females over five years of age, while in males, it is over the age of six. In TCM journal articles not utilizing these modern Western medical criteria, bed-wetting is often diagnosed as early as three years of age. According to my professor in China who specialized in the treatment of pediatric enuresis, this difference in age criteria between modern Western medicine and TCM is due to the fact that babies in developed countries wear diapers (whereas in China this is fairly uncommon). This professor further explained that (at least in his opinion) children wearing diapers do not feel the wetness, thus do not wake as easily. Therefore, these children's ability to control their night-time urine is delayed.

In any case, bed-wetting affects many millions of people around the world. According to studies in the U.S., UK, Israel, and Africa, 10% of six year-olds suffer this disease. (1) For instance, corresponding statistics on enuresis from the Canadian Kidney Foundation show that this condition is present in:

20% of five year-olds (1 in 5)

10% of six year-olds (1 in 10)

3% of 12 year-olds (1 in 33)

1% of 15 year-olds and older

It is estimated that between 5-7 million children in the U.S. alone experience nocturnal enuresis. Furthermore, in my home country of Canada (which has a much smaller population), there are

approximately 200,000 children who suffer from this childhood disease. Various studies report that boys wet the bed more frequently than do girls. However, this finding has been disputed by other reports. (2) A review of hundreds of journal articles from the past 25 years on the TCM treatment of enuresis demonstrates that there is usually a slightly higher incidence of enuresis in males. Nevertheless, one can find other studies on the same topic which present a substantially larger number of females suffering from this condition. Eighty percent of children with enuresis wet the bed only at night, while approximately 20% also experience day-time incontinence. (3) In addition, research suggests that there is a higher incidence of this disease in poorly educated, lower socioeconomic groups and in institutionalized children.

During the first 2-3 years of life, bed-wetting at night is normal and expected, with most children achieving night-time dryness by the age of four or five. However, for some, this occurs at a later age. The ability to control urination and remain dry at night directly correlates with the achievement of continence throughout the day. Table 1 demonstrates the percentage of children in the United States who achieve day- and night-time control of urine at varying ages. Table 1 below provides some statistical support for the Chinese diagnosis of enuresis at three years of age. According to the table below, 78% of children do not wet their bed at this age.

AGE (YEARS)	DRY BY DAY	DRY BY NIGHT
2.0	25%	10%
2.5	85%	48%
3.0	98%	78%

TABLE 1. PERCENTAGE OF CHILDREN DRY BY DAY AND NIGHT AT VARIOUS AGES

Further, there is a spontaneous remission rate of 15% per year after the age of five years old in those who suffer from bed-wetting. This means that the majority of children with enuresis will eventually stop by themselves.

However, although this condition is a common one, this commonness does not diminish the need for patients and their families to take action and seek treatment for it. I agree strongly with the current medical consensus that the worst thing one can do about

a child's enuresis is nothing. There is no need for these children to suffer. Unfortunately, it is estimated that only 38% of parents seek medical assistance for their child's bed-wetting. Several reasons have been identified for this fact:

1. The parents feel ashamed of the situation and feel that somehow this condition reflects poorly either on them as parents or their children (which you will discover below is entirely incorrect).

2. They are not aware that there are excellent treatment options available. This is one of the primary purposes of this book—to educate practitioners of TCM and the parents of these bed-wetting sufferers that Chinese medicine is a valuable and effective option. The Chinese medical treatment of this disease is very successful as indicated by the research in this book. When compared to modern Western medicine, these treatments are superior and have better rates of resolution with no side effects.

3. They have already tried some method of treatment that did not work and have become discouraged. Rarely outside of China have families sought out treatment from a practitioner of TCM to treat their child's enuresis. As stated above, Chinese medicine offers a variety of treatments that are effective in treating enuresis.

4. They simply hope that time will resolve the situation. However, it is important to remember that, if it is the child's birthday and he or she is between five years old and the end of puberty, there is only a 15% chance that, by the time they celebrate their next birthday, their enuresis will be gone *unless appropriate treatment is given*. Unresolved bed-wetting means another year of interrupted sleep (for the child and their family), soiled sheets and clothes, and, most of all, very discouraged children and their parents. (See Chapter 2, "The Psychological & Social Effects of Enuresis" for more information on this aspect of this condition.) Even worse, once the individual stops growing, the odds of their case spontaneously resolving without treatment becomes minute. Even doctors in China agree that, once an individual reaches puberty, this condition is significantly more difficult to treat.

Children who have enuresis deserve relief from their suffering, and, with the right treatment, almost everyone can improve their condition within a matter of weeks. From a TCM perspective, a variety of effective solutions are available and may be used alone or in combination with other methods. It is a clinical reality that different treatments work better for different people, and, in the case of enuresis, this is also true. Included in this book are over 200 Chinese medical treatments that have been *proven* to be effective in treating enuresis.

The Psychological & Social Impact of Enuresis

Wet sheets are just part of the problem. The bad feelings that can accompany bed-wetting are not as easy to fix as dirty sheets. This common pediatric condition, while never life-threatening, almost always creates some psychological and emotional stress within the bed-wetter and the family. By the age of six or seven years old, the social cost of enuresis begins to rise. Children who suffer with spontaneous urination at night often feel unable to join in on activities that involve a night away from home, such as slumber parties, camp-outs, family vacations, or summer camp. Since this condition is most common during years when the formation of friendships is so important, being left out of the fun can be very difficult for a child. Therefore, this is usually a good time to begin treatment according to modern Western medicine. From the TCM perspective where prevention of disease is more important, the earlier the treatment begins the better.

Psychological problems are almost always the result of PNE and are only rarely or never the cause. By contrast, psychological problems are important causes of SNE. The comorbidity of behavioral problems is 2-4 times higher for children with nocturnal enuresis in all epidemiologic studies. Attention deficit hyperactivity disorder (ADHD) is one of most common behavioral problems in children. Studies have shown that NE and ADHD have a rate of co-occurrence of about 30%. This is definitely higher than that expected by chance. Beiderman *et al.* (23) looked at 140 males with ADHD and 120 non-ADHD controls to understand the link between NE and ADHD. Their findings suggest that NE does not seem to increase the risk of psychopathology in children after accounting for the presence or absence of ADHD and that NE, by itself, was associated with an increased risk for learning disability, impaired intellectual functioning, and impaired school achievement in normal control children but not in children with ADHD. The authors also suggested that, among

selected children, a thorough diagnostic assessment of ADHD be performed in the presence of NE.

Many children have problems in school caused by unhealthy deep sleep. For some, this starts early; for others it becomes noticeable as the school work becomes more challenging. Often, the symptoms are similar to those associated with ADD (attention deficit disorder) and ADHD, such as hyperactivity, socializing at inappropriate times, not being able to focus, and having a difficult time concentrating. Actually, in many patients that had been previously diagnosed with ADD/ADHD, symptoms will disappear after effective treatment for their bed-wetting. Some conclude that the deep sleep bed-wetters often experience is an oxygen deprived form and, therefore, an unhealthy sleep. They further conclude that it is because of this that many bed-wetting children have symptoms similar to those of ADD/ADHD.

Because enuresis carries such a stigma in our society, the emotional impact of nocturnal enuresis on a child and family can be enormous. Children with nocturnal enuresis are commonly punished and are at significant risk of emotional and physical abuse. Many children with a bed-wetting problem suffer from low self-esteem, shame, and guilt. They have feelings of failure and see themselves as different from other people. Children with a bed-wetting problem are afraid of being discovered and often fear being teased and humiliated by their peers. These feelings are heightened if the individual also suffers from daytime "accidents" which can accompany NE. These observations above are supported by numerous studies that report feelings of embarrassment, anxiety, loss of self-esteem, and effects on self-perception, interpersonal relationships, quality of life, and school performance. A significant negative impact on self-esteem is reported in children with enuretic episodes as infrequent as once per month. The consensus among physicians today is that allowing chronic bed-wetting to go untreated chips away at a child's self-esteem and negatively affects social development. Very often the bed-wetting child will suffer silently. The longer the bed-wetting goes untreated, the greater the potential for problems. On the other hand, studies have shown that after only three months of appropriate treatment, self-esteem improves in enuretics and, in six months, self-esteem returns to normal.

The Western Medical Causes of Enuresis

Before discussing the Western medical causes and mechanisms of enuresis, it is important to note that the following *do not* cause PNE:

Psychological problems

Laziness

Drinking fluids before bedtime

Toilet training mistakes

Poor parenting skills

In a recent survey of 9,000 parents of children ages 6-17, 22% stated that they thought the reason their child wet the bed was laziness. This assumption of laziness most likely stems from the difficulty parents have waking their child that is so common in children with enuresis. This difficulty in waking, however, is not the child's fault. It is well accepted in modern Western medicine that enuresis is a common developmental phenomenon related to physical and physiological factors. Although emotional stress is not a factor in PNE, there is a causative relationship between such stress and SNE.

When explaining enuresis to parents, it is important to explain bed-wetting is no one's fault. While various Western physicians believe there may be a number of reasons for wetting the bed, there is consensus on one factor. Bed-wetting is neither the child's nor the parent's fault. Understanding the causes of bed-wetting will help remove the associated stigma and also correct some of the myths generated by society.

PNE

Despite numerous studies on PNE, its etiology remains elusive to modern Western medicine. The pathophysiology of enuresis

appears to be multifactorial. Therefore, modern Western medicine has difficulty determining the etiology. This lack of clarity around the etiology ultimately complicates the therapeutic approach. One of the main difficulties in determining the cause of enuresis is that the well-recognized spontaneous resolution rate of enuresis disturbs modern medicine's search for causative mechanisms. Even the modern Western medical diagnosis of PNE is one of exclusion. In other words, all other organic causes of bed-wetting must first be ruled out before a diagnosis of PNE is made. However, NE does not have an identifiable organic etiology in 97-99% of the cases.

SNE

As defined above, SNE occurs in those who were previously able to achieve night-time bladder control, but, due to some change in their lives, they are now unable to control their night-time urination. SNE and PNE are different but they may be caused by the same factors. In addition, SNE may also be caused by psychological stress and situational changes.

Causes of Nocturnal Enuresis

1. Psychological stress

As mentioned above, SNE may be caused by psychological stress but PNE is not. This psychological stress may be due to such things as divorce, a move, the death of a family member or friend, a new school, a new baby in the family, or school deadlines. In an older person, it may also include things such as job-related stress, a romantic break-up, or difficult room-mates. It is extremely important for the parent and the individual to realize that the sufferer is no more at fault than an adult with a headache or some other symptom caused by stress.

2. Structural and physical problems

Very few children (only 1-3%) have a physical disorder causing their bedwetting. Such disorders include: urinary tract infections, anatomical abnormalities of the urinary tract, abnormal nerve control of the bladder, *i.e.*, neurogenic bladder, spina bifida, and untreated diabetes which causes excessive production of urine. Some of the possible conditions and causes of enuresis are

explained in more detail below including: antidiuretic hormone deficiency, low bladder capacity, nocturnal polyuria, urge syndrome/dysfunctional voiding, neurogenic bladder, ectopic ureter, cystitis, constipation, seizure disorder, urethral obstruction, diabetes mellitus, diabetes insipidus, heart block, and hyperthyroidism. The above conditions are divided into two groups: a bladder dysfunction group and a group of medical conditions that affect the bladder.

A. Bladder dysfunction

i) Developmental delay

According to modern Western medicine, the most commonly accepted cause of nocturnal enuresis but also the most difficult to prove is the delayed functional maturation of the central nervous system. This immaturity reduces the child's ability to inhibit bladder emptying at night. The child's bladder fills, but the sensory out-put resulting from the stretching of the bladder is not perceived or is not sent to the brain. Thus, the central cortical control over the urinary sphincter contraction does not occur. The failure of the arousal mechanism may also contribute to the inability to inhibit micturition. This slower physical development theory is proven by the spontaneous cure rates and animal studies.

Between 5-10 years of age, incontinence may be the result of a small bladder capacity, long sleeping periods, and the underdevelopment of the body's inherent alarms which signal a full or emptying bladder. This form of incontinence fades away as the bladder grows and the natural alarms become operational.

a) Antidiuretic hormone

Babies make about the same amount of urine around the clock. Most adults make less urine while they sleep. The reason for this is thought to be a night-time surge of a hormone called antidiuretic hormone (ADH). The levels of ADH found in the blood are higher beginning in the evening. One study looking at ADH levels in those with enuresis compared to controls found that there was a constant low level of ADH in those suffering from this disease. The night-time surge did not happen. However, the fullness of the bladder may influence nocturnal secretion of ADH. Other studies report that ADH secretion can be influenced by bladder distention

(increased) and emptying (decreased). Therefore, if ADH secretion decreases when the bladder is empty, the observed low nocturnal blood levels of ADH may be a *result* of enuresis instead of the cause of nocturnal enuresis.

b) Nocturnal polyuria

Not all children need to urinate at night. During the first months of life, babies urinate around the clock. Most adults, however, do not need to urinate at night. Sometime in middle childhood, most individuals make the transition from urinating around the clock to only urinating during waking hours. According to modern Western medicine, there are three reasons why individuals continue to need to urinate at night. First, there may be an imbalance of the bladder muscles. For example, the muscle that contracts to squeeze the urine out is stronger at moments than the sphincter muscle that holds the urine in. Secondly, they may have bladders that are a little too small to hold the normal amount of urine (see “low bladder capacity” below). And third, they may make more urine than their normal-size bladders can hold for any of several reasons. They may drink too much. Drinking in the two hours before bed increases night-time urine production. They may be consuming a diuretic medication, a substance that directly increases urine output. Usually these are not prescribed medications but caffeinated cola drinks or chocolate. They may make more urine in response to a chronic disease such as diabetes or a chronic urinary tract infection. They may make more urine than average because of their hormonal regulatory systems.

If an individual consistently has to urinate at night, one or more of the above three main reasons is the cause. Due to past research, it has been demonstrated that nocturnal polyuria is present in some children with nocturnal enuresis. Although polyuria at night is an important factor in the pathophysiology of NE, the overproduction of urine alone cannot cause this disorder. This cannot be the sole reason for enuresis because it does not explain why these children do not wake to the sensation of a full bladder or why enuresis can occur during daytime naps.

ii) Low nocturnal bladder capacity

Rationally speaking, a small bladder capacity could be a logical cause of nocturnal enuresis. Some studies support this theory

while others demonstrate that this theory is definitely untrue. These latter studies suggest that there is no difference between the bladder capacity of someone with nocturnal enuresis and someone who does not suffer from this condition. Information gained from two studies (18,19) suggest that functional bladder capacity may be less in patients with nocturnal enuresis, but these findings have been disputed by other researchers who found a low incidence of abnormalities in bladder function and size when nocturnal enuresis was isolated.(20) While some parents of bed-wetters might think their child has a small bladder capacity, this condition, if present, is usually accompanied by daytime symptoms which nocturnal enuresis is not. This can present as daytime urgency, frequency, and/or incontinence, and these individuals are more prone to bladder infections.

In a study by Mattsson and Lindstrom, functional bladder capacity (FBC) was correlated positively with night-time urine output. They concluded that children with this common childhood condition (of enuresis) maintain a smaller nocturnal bladder volume, and this state of bladder emptiness may condition the detrusor to contract at a lower volume. Therefore, this theory concludes that the low nocturnal bladder capacity is the result of nocturnal enuresis rather than a cause. Bloom *et al.* posit an alternative idea. They suggest that a problem with the external urethral sphincter is a possible reason for low nocturnal bladder capacity. These researchers suggest that the control of urination rests with the external urethral sphincter. This muscle is constantly active to prevent the body from losing urine uncontrollably. They speculate that a detrusor contraction may be triggered by the external urethral sphincter falling below a critical level during sleep.

iii) Urge syndrome/dysfunctional voiding

Statistically this is more common in preschool and elementary school-aged girls. The symptoms commonly associated with this syndrome are urinary frequency, urgency, squatting behavior, and incontinence during the day as well as at night. This squatting behavior is a learned response and is done by the child in an attempt to suppress an unexpected and unwelcome detrusor contraction. This syndrome is less common after puberty, and the condition tends to resolve itself over time. Cystitis and constipation are frequent complaints of these children. Urodynamic studies are able to discover unstable detrusor contractions early in the filling phase of the bladder.

iv) Cystitis

Cystitis or inflammation of the bladder is one of the more common causes of bed-wetting in this section and is an aggravating factor associated with other causes. Clinically, this manifests as dysuria, cloudy, foul-smelling urine, visible blood in the urine, and frequent, urgent urination and incontinence during the day and/or night. This condition can cause nocturnal enuresis at any age. This disorder is usually treated with antibiotics and when it is the only cause the enuresis usually resolves with appropriate treatment. Children with urge syndrome/dysfunctional voiding, neurogenic bladder, urethral obstruction, ectopic ureter, and diabetes mellitus are more prone to this medical condition. If the child concurrently suffers from one of these conditions, daytime symptoms do not resolve completely with antibiotic treatment.

B) Medical conditions affecting the bladder

Below are a list of medical conditions where enuresis may be a symptom of the disease. In these diseases there are other systemic symptoms other than nocturnal enuresis. Remember that only 1-3% of enuresis cases have an organic cause. If the individual is nonresponsive to treatment or any of these conditions are suspected, the patient should be referred to Western physician for further testing. The treatment should focus on resolving the main complaint or medical condition which will, in most instances, lead to the resolution of the enuresis.

i) Obstructive sleep apnea (OSA)

Obstructive sleep apnea is a medical condition that may be associated with both an abnormality in arousal and nocturnal enuresis. In children, the most common cause of OSA is adenotonsillar hypertrophy, which is most common in youngsters between the age of 2-5 years old. Accompanying symptoms of this syndrome include snoring, mouth breathing, frequent ear and sinus infections, sore throat, choking, and daytime drowsiness. In some cases, clinical cure of this breathing disorder may simultaneously resolve the associated night-time incontinence. The sudden resolution of nocturnal enuresis following surgery to resolve this airway obstruction indicates that OSA influences a critical pathophysiologic factor of enuresis. It is suggested that this factor effects the patient's sleep arousal. However, nocturnal polyuria is

reported in individuals with OSA and is another possible causative factor that may be affected by proper surgical treatment according to modern Western medicine. This treatment is reported to decrease nocturnal enuresis in up to 76% of patients. (22)

ii) Constipation

Constipation is another of the possible causes of SNE and is a common aggravating factor in conjunction with other causes. Constipation is mostly present in children with neurogenic bladder and is more common in those with urge syndrome/dysfunctional voiding. Although practitioners of modern Western medicine are unsure of the exact mechanism, they hypothesize that the pressure effect of stool in the descending or sigmoid colon can possibly trigger an uninhibited detrusor contraction and, therefore, urination.

iii) Neurogenic bladder

Neurogenic bladder may be caused by a lesion at any level in the nervous system, including the cerebral cortex, the spinal cord, or the peripheral nerves. Thirty-seven percent of children with cerebral palsy suffer from enuresis. Individuals with myelomeningocele almost always have nocturnal enuresis. Other changes to the spinal cord may cause this disease, *e.g.*, caudal regression syndrome, tethered cord, tumors, anterior spinal artery syndrome, and spinal cord trauma.

iv) Urethral obstruction

The key symptoms of this condition are that the child has to wait or push to initiate urination and the micturition has a weak or interrupted stream. This disorder may be congenital, *i.e.*, posterior urethral valves, congenital stricture, or urethral diverticula, or acquired due to a traumatic or infectious stricture.

v) Seizure disorder

Secondary nocturnal enuresis may be a sign that a child with a known seizure disorder had a seizure during sleep. It is uncommon for new-onset seizures to occur at night only. Bed-wetting may be a symptom of a major motor seizure but obviously is not the only symptom of this disease. The family of the patient may hear nocturnal sounds associated with abnormal muscle movements that are caused by the seizures.

vi) Ectopic ureter

This patient clinically presents as always being wet, not just at night. This rare congenital abnormality is more common in girls due to the insertion of the ureter in a different area than the lateral angle of the bladder trigone. The most common site of the ectopic orifice is adjacent to the external urethral meatus.

vii) Diabetes mellitus

In a patient with recent-onset diabetes mellitus, enuresis is not usually the main presenting complaint. More conventional symptoms of insulin deficiency, including polyuria, polydipsia, polyphagia, and weight loss, are more often seen clinically. Secondary nocturnal enuresis in a child with established diabetes mellitus may be an indication that the insulin is not at an optimal level in the body. In children with diabetes mellitus, nocturnal polyuria is presumed to be the cause of enuresis. However, a disorder of arousal could also be present because most school-aged patients develop nocturia when they have this disease but maintain a dry bed. In addition, diabetes mellitus can be accompanied by abnormalities in the afferent sensory pathways to the bladder which may contribute to nocturnal enuresis.

viii) Diabetes insipidus

This disease is an uncommon cause of nocturnal enuresis. The main mechanism causing this is often presumed to be nocturnal polyuria but a disorder of arousal also may be present in diabetes insipidus. Individuals with diabetes insipidus present with polyuria, polydipsia, and symptoms related to the underlying hypothalamic or renal cause.

ix) Heart block

Very rarely, SNE may be caused by heart block, but some cases have been documented. In such cases, enuresis would not be the only symptom. Other symptoms would be present, such as syncope episodes.

x) Hyperthyroidism

As with heart block, enuresis would not be the only symptom and would be accompanied with other symptoms of hyperthyroidism, such as weight loss, heat intolerance, anxiety, and diarrhea.

3. Situational changes, such as altered eating, drinking, or sleeping habits

Situational changes may aggravate the severity of an individual's PNE but is only a causal factor in SNE. One simple way to determine the possible cause of SNE is to follow the following two guidelines:

- 1. If the individual primarily slept straight through the night but now wets the bed, the problem is more likely related to a recent increase in urine production.
- 2. If the person woke up to urinate at night in the past but recently this has changed, the increase in difficulty in waking up is probably due to stress, shifted bedtimes, or low-level sleep deprivation.

The following table illustrates the difference between primary and secondary enuresis in regards to cause.

CAUSES OF PRIMARY NOCTURNAL ENURESIS	CAUSES OF SECONDARY NOCTURNAL ENURESIS
Idiopathic	Idiopathic
Disorder of sleep arousal	Disorder of sleep arousal
Nocturnal polyuria	Nocturnal polyuria
Small nocturnal bladder capacity	Small nocturnal bladder capacity
Urge syndrome and dysfunctional voiding	Urge syndrome and dysfunctional voiding
Cystitis	Cystitis
Constipation	Constipation
Neurogenic bladder	Acquired neurogenic bladder
Urethral obstruction	Acquired urethral obstruction
Diabetes insipidus	Acquired diabetes insipidus
Ectopic ureter	Seizure disorder
	Diabetes mellitus
	Obstructive sleep apnea
	Psychological
	Heart block
	Hyperthyroidism

The role of genetics and sleep in enuresis

Genetics

A family history of nocturnal enuresis is often found in children with this condition. Numerous studies report varying percentages, but all indicate a high incidence of this problem in other family members. One study has shown that, in families where both parents had enuresis, 77% of children also had enuresis. In families where only one parent had enuresis, 44% of children were affected. If neither parent had a history of enuresis, the occurrence dropped to 15%. (4) Another study indicates a family history of bed-wetting is found in approximately 50% of children with SNE. This suggests that, even though psychological factors are often the cause of SNE, there may also be a predisposing genetic factor in this form of enuresis as well. Among monozygotic twins, the concordance rate of enuresis is 68%, while among dizygotic twins, the rate is only 36%. (5) In yet another study, an evaluation of the family history in males and females revealed that a maternal history of enuresis was significantly more common in males than in females. On the other hand, a paternal history of enuresis was associated with more enuresis in females off-spring than in males. Another interesting piece of information is a study that indicates a higher incidence of PNE in individuals who were left handed. (6) All this research suggests that PNE is often inherited. This corresponds to what is called an autosomal dominant inheritance pattern. Heredity as a causative factor of PNE has even been confirmed by the identification of a gene marker associated with the disorder. Molecular genetic linkage-analyses have detected a linkage between PNE and chromosomes 13q, 12q, and 8q. (7)

Although the genes mentioned above have been identified by modern biologists, there is still no conclusive evidence as to what imbalances in physiology these chromosomes cause that leads to enuresis. Presumably, these genes affect either whether children will need to urinate at night, *i.e.*, the rate at which a child will develop, or how easily they can wake up when their bladders are full. According to modern Western medicine, there are arguments for both points of view. Others say children vary in the age at which they are physically ready to have complete control over their bladders and that this age tends to run in families. Therefore,

it is thought that, in children who wet the bed after the age of six years, the bladder muscles as a result of heredity may not be strong enough to retain large amounts of urine.

Sleep

Bed-wetting is a type of parasomnia. Parasomnia means “around sleep” and describes a number of sleep disorders recognized by modern Western medicine. These include nightmares, sleepwalking, enuresis, and night terrors. Although the sleep patterns in patients with enuresis have been studied extensively, inconsistencies in these results make them difficult to interpret. Those studying sleep electro-encephalographies say that those suffering from bed-wetting have a higher incidence of increased slow brain-wave activity. However, this is considered a nonspecific finding.(8) Further studies into this subject have not supported these results and no consistent correlation between abnormal sleep patterns and bed-wetting has been made.(9,10) In other words, it appears that those with enuresis may have normal sleep patterns. Nevertheless, parents of these children often say their child is a “heavy sleeper.”

Recently, researchers in Canada proved this observation by performing a simple but powerful study where they put headphones on children in a sleep lab. They began the study by allowing the children to get used to sleeping with the headphones on. Then they began introducing tones through the headphones. They measured the minimum volume it took to wake each child. The study showed that the children in the bed-wetting group were dramatically more difficult to wake up than normal controls, thus confirming what parents have known for years.

According to modern Western medicine, the ability to wake from sleep to the sensation of a full or contracting bladder involves many interconnected anatomic areas in the human body, including the cerebral cortex, reticular activating system (RAS), locus ceruleus (LC), hypothalamus, pontine micturition center (PMC), spinal cord, and bladder. The RAS controls depth of sleep, the LC controls arousal, and the PMC initiates the command for a detrusor contraction. The variety of neurotransmitters involved in this process include noradrenaline, serotonin, and antidiuretic hormone (ADH). The abnormally deep sleep that parents say those

with enuresis suffer from is so resistant to arousal that their brains cannot automatically keep the bladder shut during sleep. Some believe that this deep sleep is the inherited factor discussed above in the section on genetics.

Parents often report that their children wet the bed earlier as opposed to later in the night, and some older studies (11,12) suggest that these episodes occur during slow-wave deep sleep. However, more recent research (13) shows this condition may occur at different stages of sleep. Some children are drier when sleeping at a friend's or relative's home but always wet in their own bed. A possible explanation of this is, perhaps, when sleeping in a strange bed away from home, they do not sleep quite as deeply. This is especially frustrating for the child and parents. Clinically, however, this is an excellent sign that the child should be able to be cured. It is also possible that these children may be consciously or subconsciously thinking about staying dry through the night when they are away from home.

Whether proven through medical testing or by speaking to parents of bed-wetting children, it is evident that bed-wetters are often deep sleepers. Due to being deep sleepers, they do not wake up to the stimulus of a full bladder and often not even to the sound of an alarm or alarm therapy. Therefore, the cause of enuresis may also be related to the blunting of the arousal mechanism of the human body that wakes the individual when they need to urinate.

The Western Medical Diagnosis of Enuresis

This chapter introduces practitioners of TCM to the various tests of Western medicine that may be performed to determine organic causes of bed-wetting. In modern TCM journals, most patients are screened using a combination of the tests below prior to beginning treatment. As mentioned before, only 1-3% of enuresis sufferers have an organic cause. Urinalysis is considered the most important screening test in modern Western medicine for individuals with nocturnal enuresis. It is rare that a child with ordinary enuresis needs to have further testing. Further testing may be indicated if the child has new or persistent daytime wetting, urinary tract infections, bowel difficulties, or problems urinating.

Physical examination

A comprehensive physical examination is used by practitioners of modern Western medicine to rule out the presence of physical or structural causes of enuresis even though no abnormal physical findings are usually found in patients when nocturnal enuresis is the only symptom. Abnormal physical findings may or may not be present in children with urge syndrome/dysfunctional voiding. Abnormal physical findings are more likely in children with cystitis, constipation, neurogenic bladder, urethral obstruction, ectopic ureter, OSA, and hyperthyroidism. This examination should include the following:

1. Measurement of blood pressure.
2. Inspection of the external genitalia.
3. Palpation in the renal and suprapubic areas to look for enlarged kidneys or bladder.
4. Palpation of the thyroid is important if hyperthyroidism is suspected.

5. Thorough neurological examination of the lower extremities including gait, muscle power, tone, sensation, reflexes, and plantar responses.
6. Inspection and palpation of the lumbosacral spine. It is noted that a spinal defect, such as a dimple, hair tuft, or skin discoloration, may be visible in approximately 50% of patients with an intraspinal lesion.

Laboratory studies

1. Urinalysis

Urinalysis is the most important screening test in a child with nocturnal enuresis. Children with cystitis commonly have white blood cells (WBCs) or bacteria evident in their urine. Cystitis is more common in children predisposed to this condition because they have urge syndrome/dysfunctional voiding, urethral obstruction, neurogenic bladder, ectopic ureter, or diabetes mellitus. Urethral obstruction may be associated with red blood cells (RBC) in the urine. The presence of glucose suggests diabetes mellitus. A random or first-morning specific gravity greater than 1.020 excludes diabetes insipidus.

2. Blood analysis

Blood analysis is used to test thyroid-stimulating hormone (TSH) if hyperthyroidism is suspected.

3. Imaging studies

Ultrasound

Ultrasound is used to assess the residual amount of urine (normally less than 10ml). Failure to empty the bladder completely is considered a significant risk factor for cystitis. This residual urine is common in patients with urge syndrome/dysfunctional voiding, neurogenic bladder, and urethral obstruction.

Although diagnostic imaging studies are not routinely indicated, children who also have daytime voiding symptoms as well may undergo an ultrasound of the bladder and kidneys.

Voiding cystourethrogram (VCUG)

This is used to observe the urinary tract before, during, and after urination. If the bladder wall is thickened or trabeculated or a significant post-void residual volume of urine is noted, practitioners of modern Western medicine will consider having a VCUG done. It is also performed when a neurogenic bladder is suspected or urethral obstruction is suspected based on an abnormal urinary stream or ultrasound.

Cystometrogram, cystoscopy, and urodynamic studies

A cystometrogram measures the bladder pressure at various stages of filling, while cystoscopy is the examination of the bladder. Urodynamic studies measure the storage and rate of movement from the bladder. Urodynamic studies obtained during a cystometrogram or a video-urodynamic study help to clarify the diagnosis of neurogenic bladder. A video-urodynamic study measures filling phase parameters, such as bladder capacity (see “Western Medical Causes and Mechanisms of Enuresis”), presence or absence of unstable detrusor contractions, bladder compliance, and the state of the bladder neck, and voiding phase parameters, such as voiding pressures, bladder emptying, and the state of the external urethral sphincter. Cystoscopy and urodynamic studies are reserved for patients with definite urethral obstruction or neurogenic bladder.

Magnetic resonance image (MRI) of the spine

Magnetic resonance imaging of the spine is indicated in a patient with an abnormal neurologic examination of the lower extremities, a visible defect in the lumbosacral spine, or if there is no control of defecation (encopresis) combined with gait abnormality and daytime symptoms.

It is also considered in patients with significant daytime voiding dysfunction that does not improve with treatment, even if neurologic and orthopedic examinations are normal.

Radiograph

This is only considered by a Western physician if OSA is suspected, in which case, he or she will consider a lateral radiograph of

the neck or referral to a pediatric otolaryngologist for direct visualization of the nasopharynx.

Other tests

Uroflowmetry

Uroflowmetry is a simple, noninvasive measurement of urine flow. It is helpful to screen patients for neurogenic bladder and urethral obstruction. Children are instructed to void into a special toilet with a pressure-sensitive rotating disc at the base. A normal uroflow study shows a single bell-shaped curve with a normal peak and average flow rate for age and size. Patients with urethral obstruction and neurogenic bladder have prolonged curves or an interrupted series of curves and low peak and average urine flow rates.

Electrocardiogram

If heart block is suspected, an electrocardiogram is performed.

The Western Medical Treatment of Enuresis

The Western medical treatment of enuresis may consist of any or all of the following depending on the practitioner and the care-giving setting: patient and family counseling, bladder training exercises, behavioral conditioning, hypnotherapy and guided imagery, star charts and reward systems, and pharmacological therapy. Each has its strong and weak points and each is indicated for certain types of enuresis. As the reader will see, none are 100% effective and satisfactory.

Patient & family counseling

The first treatment provided by the Western medical practitioner should be patient and family counseling. This should begin during the first visit and is provided to reassure and provide emotional support to those affected by this disease. Parents should also be asked what they think is causing the enuresis so any irrational fears may be discussed if present. In addition to explaining what does and does not cause enuresis, the practitioner should explain to those involved that enuresis can be a self-resolving condition but that treatment will help the child overcome this condition even quicker. It is especially important to explain to the child and their family that the child has no control over this condition and it is not their fault. Further counseling tips for children and their families are given below and may be incorporated into clinical practice either verbally, via a handout, or both. These tips include a number of different methods of treatments, such as behavioral modification, motivational therapy, and dietary therapy, that may be used to both treat and possibly prevent enuresis.

Motivational therapy

Motivational therapy includes any method that involves reassuring

the parents and the child, removing the guilt associated with bed-wetting, and providing emotional support to the child. These methods include instructing the child to take responsibility for his or her bed-wetting. In other words, youngsters who have enuresis should be helped to understand their condition and to realize that, while they did not cause the problem, they do have a role in the treatment plan. Positive reinforcement for a desired behavior may be used and some examples are listed in the “Tips for Dryer Nights” in Appendix 2. The total resolution rate for those that receive motivational therapy alone is 25%. While this is not high, it is higher than the 15% rate of spontaneous resolution. In addition, up to 70% of children who receive motivational therapy have shown an obvious improvement in their condition.(24) As in other forms of therapy, long-term follow-up is necessary. A relapse rate of roughly 5% has been reported when using this method.(25)

Behavior modification

Behavior modification along with motivational therapy is one of the primary methods discussed when counseling the parent and child on what they can do themselves and is also included below. Forms of behavior modification included below are positive reinforcement, periodic waking, and restricted fluid intake. Some sources say behavior modification alone can often improve night-time dryness in one month.

Dietary therapy

When it comes to dietary therapy for enuresis, Western medical practitioners mainly suggest to avoid the three C’s—caffeine, carbonated drinks like “colas,” and chocolate—because they increase urine production and, therefore, increase the likelihood of wetting the bed during sleep. In general, dietary therapy may be a good option to treat enuresis. One study on dietary therapy showed that foods suspected of contributing to enuresis included some of the above mentioned foods as well as dairy products, citrus fruits, and juices. (26)

Bladder training exercises

This method is considered a form of behavior training and is not included before the age of six years old. These exercises are accomplished by having the child hold their urine while on the

toilet. Useful ways of accomplishing this training include having the child either sing or count to ten while sitting on the toilet before voiding. In general, children are asked to hold their urine for longer periods of time during the day. These holding-on exercises are practiced during the day, and some believe these exercises can help the muscles of the bladder to hold more urine before they have to urinate. This ability to hold more urine may increase an enuretic child's confidence in controlling their bladder. Some studies demonstrate that the functional bladder capacity may be less in children with enuresis, which then leads to the bladder prematurely emptying during the night.(27) However, urodynamic studies have not shown evidence that a reduced functional bladder capacity is present in children with enuresis.(28) Nevertheless, some younger people suffering from this disease do have a small bladder capacity, and the use of bladder-retention training during the day may help them increase bladder capacity at night and prevent incontinence. In yet another study (29), 66% of children reported some improvement after using this method for six months, and 19% had a complete resolution of symptoms after the same length of treatment. The bladder capacity did increase significantly in those patients who responded to this therapy. Unfortunately, these findings are based on only one study and must be combined with similar supportive data to confirm the effectiveness of this treatment. In my own personal opinion, this treatment may help and is rather benign if not done excessively, *i.e.*, having the child hold the urine to a point of causing discomfort or pain, will not cause any side effects.

Behavioral conditioning

Alarm therapy

The first reference to this method was in Africa where rumor has it they used frogs strapped to the child to act as a "natural" alarm. Fortunately for the frogs' sake, this treatment now consists of a moisture-sensing device that is attached to the child's pajamas and wakes the child with a loud signal or vibrating alarm. The alarm is activated by the first sign of dampness and is meant to condition the individual to wake up when the bladder is full. Even though most children may not be awakened by the alarm, they stop emptying their bladder when the alarm is activated, and then they are assisted to the bathroom to finish urinating by their

parent. This action does not require the child to be fully conscious, and, after changing the sheets and sleep wear, the child is returned to the bed and the alarm is reset.

Modern Western medicine considers this the most effective treatment currently available for enuresis, and it is the only Western medical treatment that also offers the possibility of sustained improvement of the enuresis. Monda and Husmann (30) compared the use of the wetting alarm system with observation, imipramine, and desmopressin (DDAVP), two Western drugs used to treat enuresis. Patients were given a choice of the four methods and after six months of treatment were weaned off and evaluated for continence. All children were evaluated at three, six, nine, and 12 months after they started treatment. Among the 50 children in the observation group, 6% of the children were cured after six months and 16% at 12 months. In the imipramine group of 44 children, 36% were able to control their bladder at night at six months and only 16% at 12 months. Of 88 children treated with DDAVP, 68% were dry at six months and only 10% at 12 months, and, in the alarm therapy group of 79 patients, 63% maintained continence at six months and 56% at 12 months. This suggests that the only modality that has demonstrated a significant degree of persistent effectiveness in Western medicine is alarm therapy.

An analysis of 25 reported studies showed the average success rate of this modality to be 68%. Ten percent of these patients relapse when treatment is stopped, but these may respond again to further treatment. Other reports say the number who relapse is 29-66%. Nevertheless, this method is known to work best in older children and is not usually recommended for those under seven years old. The belief is that the child needs to look after the alarm themselves. Otherwise, no behavioral change will occur, and the parent will continue to manage the enuresis for the child.

The mechanism behind the therapeutic action of this modality is unknown. Some children replace their NE with nocturia, and others sleep through the night without the need to urinate. Also, the volume of urine expelled by the individual may decrease progressively over time until it disappears totally or the improvement happens more suddenly. Alarm therapy is reported to increase nocturnal bladder capacity.

The child and their family must be very motivated for this modality to work. This can be a big disadvantage for many families. Another disadvantage of this method is that the bed-wetter may not awake to the alarm and, therefore, the alarm may disrupt other family members' sleep. Often, it takes an average of 3-6 months for alarm therapy to cure the enuresis. Some families and children find the length of time needed to be frustrating and relapses do occur. The length of time along with the loud noise disrupting the household are the main reasons why many families decide to stop using this treatment after only a short period of time.

These alarms (especially the newer ones) have been shown to be safe. However, some parents and their children are apprehensive about having wires or electronic devices near the body, especially in vicinity of an area that may become wet. The transistorized alarms are small, lightweight, sensitive to a few drops of urine, inexpensive, and easy for the child to set up by themselves.

It is recommended that children using this system should have bi-weekly follow-up visits to sustain motivation, problem solve any difficulties, and monitor the success of the treatment. In short, alarm therapy has been proven to be more effective than pharmacological therapy in Western medicine since it has no side effects, has a better long-term conditioning cure, has a decreased chance of relapse, and is more cost-effective.

Alarm clock

An alternate method for a child who is unable to awaken him- or herself at night is to teach them to use an alarm clock or clock radio to wake them. The clock is set for 3-4 hours after the child goes to bed. Instead of the alarm, alternatively the parent may wake the child after 3-4 hours. Similar to the above method, the alarm clock method is used to elicit a conditioned response of waking when the bladder is full. If the alarm is used, it is put beyond the child's reach so that they must wake up to shut it off. To improve the results, the child is encouraged to practice responding to the alarm during the day while lying on the bed with their eyes closed. The child should be made to take responsibility to set the alarm each night. The individual should be praised for getting up at night, even if he or she is not dry in the morning. This technique's success rate is unknown. Most parents

complain that they have difficulties in gaining their child's cooperation with this program.

Hypnotherapy & guided imagery

Hypnotherapy has been effective in some cases of enuresis. However, it requires a trained therapist to use this method. The child is put into a hypnotic state and then given suggestions about modifying their behavior. It is then hoped that the child subsequently although unconsciously acts upon these suggestions. Parents who are interested in using this therapy in their children will need a referral from their physician or should seek out a trained and licensed therapist in the Yellow Pages under "Psychotherapists." Guided imagery can be employed by anyone. Guided imagery can be used in the same way you can explain enuresis to a child. There are many ways to explain this disorder to a child. In Appendix Two is an example that I came across in my research that I use in my clinic and one example of guided imagery I give to parents to use with their child. It can also be useful to combine these explanations with pictures to further explain if at all possible.

Star charts & reward systems

Star charts and reward systems prove very beneficial for some patients and are used either alone or in conjunction with other therapies. Everyone knows that it is easier to wake up in the morning when the next day holds promise and excitement. Star charts use this concept to their advantage by offering a child a star on the calendar for each dry night. When the child collects or obtains a certain number of stars (usually 3-7), they are given a small reward. When the child is dry for a longer duration, such as 21 nights, he or she receives a larger, more appreciated and anticipated prize. The explanation for the effectiveness of this treatment is that, by rewarding the child, you put the reticular activating system of the brain in a more heightened state of readiness and it is better able to wake up when the bladder signals that it is full. For some, this method alone is sufficient to make them responsive to a full bladder. However, according to some authorities, if this treatment does not improve the enuresis within two weeks, its use should not be continued without being combined with another therapy.

Dr Richard Butler, a psychologist, suggests using a point system

instead of the star charts. First, the parent and child must decide upon a reward. This does not have to be an expensive gift or reward but instead may be time set aside for a particular activity that the child enjoys doing with their parent. For example, the child may have to earn 30 points to enjoy an afternoon at the zoo, playing baseball, or having a camp-out. You agree that a certain amount of points will be rewarded to them for positive behavior outcomes that have previously been identified and agreed upon and then help the child achieve these over a period of time. Children will soon become competitive if supported by the adults that are around them and will strive to attain this goal. Dr. Butler argues that this method is preferable to the star system of only rewarding the child when they do not wet the bed. He feels the child will be totally demoralized and stop trying if he or she accumulates too many consecutive nights of wetting the bed.

Pharmacological therapy

This section is an introduction to the pharmacological treatments currently available in modern Western medicine to treat enuresis. The intent of this section is to educate the practitioner on possible treatments their patients may have received prior to coming to your office and to supply the practitioner with information to better educate their patients and their families on an effective treatment plan.

Facts about current medications available to those suffering from enuresis:

1. These drugs are usually reserved for use in children older than seven years of age.
2. None of these medications cures enuresis.
3. Parents should not expect immediate results and should be made aware of the potential side effects of the medications by the prescribing physician.
4. Most parents and modern medical doctors generally do not want to use medication as the first treatment of enuresis. Therefore, drug therapy is often only used in children who have shown no success with other treatments.

Several medications are available for the treatment of bed-wetting. However, none of these medications cures enuresis. Instead, these medications sometimes offer symptomatic relief that may provide relief from the bed-wetting until the child is able to wake on their own during the night to void. In the few cases when, due to family circumstances or there is a need for quick symptomatic relief, treatment with drug therapy can be a valuable option. All Western medications for bed-wetting treat enuresis by one of two approaches. One approach is to increase bladder capacity, and the second approach is to reduce the amount of urine produced by the kidneys. The most widely utilized classes of medication currently prescribed for nocturnal enuresis are the tricyclic antidepressants, anticholinergic drugs, and the synthetic analog of vasopressin, desmopressin.

Tricyclic antidepressants (TCAs)

Tricyclic antidepressants, including imipramine (Tofranil®), have been used in the past 25 years to treat enuresis. This antidepressant was prescribed more often in the past when psychological causes were considered normal. Although this drug has been prescribed extensively with results, its use continues to decrease. Imipramine's exact mechanism of action has not been well established. The possible mechanisms include an antidepressant effect, an antispasmodic and/or anticholinergic effect, alterations in sleep and arousal mechanism, and adrenergic neurotransmitter reuptake blockade. (31)

Tricyclic antidepressants, especially imipramine, have been used to treat bed-wetting since Kales *et al.*'s study in 1977 that followed four children with NE for 68 consecutive nights in a cross-over, placebo-controlled study. Initial success rates of 10-15% have been reported, and a large study (32) combining data from eight controlled, double-blind trials reported a long-term cure rate of 25%. However, the relapse rate is high when the patient discontinues treatment. The optimal duration of therapy has not been determined, but the empirical approach taken by most doctors is to treat children for 3-6 months and then wean them from the medication by reducing the dosage.

The use of imipramine continues to decrease in clinical practice of modern Western medicine because of the potential for major side

effects, including anxiety, insomnia, dry mouth, nausea, personality changes, sleep disorders, such as nightmares, constipation, fatigue, and nervousness. Imipramine has also been associated with severe accidental overdoses in both patients and their siblings. Because this drug has adverse side effects and a history of overdose, this medication is not recommended as the preliminary therapy for bed-wetting in modern Western medicine.

Desmopressin (DDAVP)

This drug is a synthetic version of vasopressin and the preferred medication in modern Western medicine to treat enuresis. Vasopressin is a regulatory hormone that is normally produced by the body. The function of this hormone is to recycle water from the urine back into the bloodstream. The body normally produces a higher level of this hormone during sleep so that we do not make an excess of dilute urine while we sleep and, therefore, do not need to urinate. Desmopressin is used based on the controversial findings that bed-wetters produce less than normal amounts of vasopressin at night. This drug was first reportedly used to treat enuresis in the 1960s, and later studies showed that some of these children showed a decreased amount of antidiuretic hormone (ADH). Therefore, they assumed this drug worked by increasing the production of ADH to concentrate the urine and to prevent the bladder from overflowing. However, some children who responded to treatment did not have abnormal levels of hormone or did not overproduce urine prior to having treatment. It is now hypothesized that the mechanism of action of DDAVP possibly involves factors other than control of the production of urine. Because ADH is also a neurotransmitter, a central nervous system-mediated action, effect on arousal may be important.

Desmopressin is frequently used by doctors of modern Western medicine and has few side effects compared to other medications. The side effects with the pill form do not differ significantly from a placebo group and the most common side effects with the spray include nasal discomfort, epistaxis, abdominal pain and headache. The only serious side effects noted have been seizures or other CNS symptoms due to water intoxication. It was determined these serious side effects were caused in most cases by excessive water intake during treatment, and now it is recommended that parents do not allow their children more than one

cup of fluid between supper and bedtime during treatment.

This medication is available as a nose spray or in pill form and is used in combination with fluid restriction. The treatment works best in children over eight years old, and the child usually responds to treatment within a week.

Miller *et al.* (33) completed two, multicenter, placebo-controlled trials of DDAVP in a total of 176 severely enuretic children. Doses of intranasal 40mcg, 20mcg, and placebo were compared for four weeks. Reductions of wet nights with 40mcg in trials one and two were 41% and 34% respectively. With the 20mcg dose, reductions were 29% and 21%, and, with placebo, reductions were 13% and 15%. No serious adverse effects were seen during the trials. However, bed-wetting behaviors resumed after discontinuing, which demonstrated the clinical observation that there is a high rate of recurrence in individuals receiving this treatment.

In general, the reported effectiveness of DDAVP in the treatment of nocturnal enuresis varies between 10 and 86%. It is shown that the type of nocturnal enuresis—monosymptomatic versus polysymptomatic—may also dramatically affect the patient's response to this treatment. Findings show that 68% of patients with monosymptomatic nocturnal enuresis had no enuresis during treatment in contrast to only 19% of those with polysymptomatic nocturnal enuresis. Regardless of the type of enuresis, most children had a recurrence of enuresis. Indeed after a successful six month therapeutic trial with DDAVP, the percentage of children that maintained their ability to control their bladder at night was not much different from an untreated control population, *i.e.*, 10% versus 16%, respectively. Due to the above facts, DDAVP is primarily used for symptomatic relief. Modern Western medicine finds this method of treatment useful in situations where there is a need to stop bed-wetting immediately, the parents have no time to teach their child to wake up to an alarm, as a short-term solution (*e.g.*, vacations, sleepovers, or camp), the child is suffering psychologically and/or socially, or for an older child who is unsuccessful in using alarm therapy.

Anticholinergics

Anticholinergic drugs (oxybutynin, hycoscyamine) are medications

that relax the bladder and allow it to hold more urine. These drugs are indicated in enuretic children who have lack of control of urine during the day as well as at night. They are usually not effective for bed-wetting unless daytime lack of control is also present. Hence the symptoms indicating its clinical use are enuresis more than one time a night and symptoms of urgency, frequency, and/or incontinence of urine. For this reason, this drug has been shown to be helpful in children with urge syndrome/dysfunctional voiding or neurogenic bladder. In some cases, this medication is used in combination with DDAVP to control enuresis. In the past, uncontrolled studies report that these types of medications are beneficial. However, there is only one controlled trial that has attempted to establish this benefit. Using a crossover design, Lovering *et al.* (34) administered either oxybutynin or a placebo before sleep for 28 days to 30 children with NE. This blinded study failed to show a substantial difference between the anticholinergic agent and placebo. Commonly reported side effects of these drugs include dry mouth, drowsiness, constipation, dizziness, facial flushing, irritability, blurred vision, occasional tremulousness, and even heat exhaustion during hot months.

While the Western medical treatments described above have their limitations and drawbacks, any of them can be combined with a judicious use of TCM. In particular, parent and patient counseling, behavior modification, and guided imagery work well in tandem with Chinese medicine and I routinely use or recommend these in my practice.

The Chinese Medical Causes & Mechanisms of Enuresis

In Chinese medicine, enuresis is seen as a disorder of water fluids. The three main viscera which control water fluids in the body are the three main Chinese medical viscera involved in enuresis—the lungs, spleen, and kidneys. The lungs are the upper source of water which downbear and diffuse water fluids through the water passageways of the three burners. It is the descension and free flow of the lung qi which transports water fluids to the lower burner for excretion by the kidneys and bladder. The spleen governs the movement and transformation of the water fluids. In particular, it is the spleen which sends the clear part of water fluids taken in by the stomach up to the lungs for distribution around the body. If the spleen qi fails to upbear these fluids, they tend to pour downward to the lower burner where they overflow from the bladder. The kidneys govern the water fluids of the entire body but especially control the bladder's qi transformation and the opening and closing of the urethra. If, for any reason, one or more of these viscera become vacuous and insufficient or their function is inhibited by the presence of evil qi, their control of water fluids may be impaired and enuresis may result. Further, if water fluids collect and transform into dampness, these damp evils may seep downward to become depressed in the lower burner where they inhibit the free flow of the yang qi. If the yang qi, which is inherently warm, also becomes depressed and dampness unites with this depressed yang qi, it will give rise to damp heat. Because the liver channel surrounds the genitourinary tract, liver channel damp heat may be the result, and this may also cause enuresis.

In Chinese medicine, children are considered both physically and physiologically immature. Chao Yuan-fang, in his book *Zhu Bing Yuan Hou Lun (Treatise on the Origins & Symptoms of Various Diseases)* stated, "The five viscera and six bowels are made but

not complete, . . . are complete but not strong." Similarly, Qian Yi, China's first great pediatrician, in his *Xiao Er Yao Zheng Zhi Jue* (*A Collection of Essential Pediatric Patterns & Treatments*), wrote, "The skin and hair, muscles and flesh, sinews and bones, brain and marrow, the five viscera and six bowels, the constructive and defensive, and the qi and blood of children as a whole are not hard and secure." This means that the lungs, spleen, and kidneys are all immature and, therefore, intrinsically vacuous and weak. This is why babies and young children tend to present so many signs and symptoms of dampness, phlegm, and turbidity, *i.e.*, untransformed water fluids. In particular, the spleen is not fortified or mature until around six years of age, and the kidneys do not become exuberant until puberty. In addition, it is said in Chinese medicine that, "The spleen is the root of phlegm engenderment; the lungs are [merely] the place where phlegm is stored." This helps explain why the lungs in children are so susceptible to the accumulation of phlegm dampness which hinders and obstructs the downward depuration of the lung qi. It is the inherent immaturity of the lungs, spleen, and kidneys which make enuresis mostly a pediatric complaint.

However, anything that damages and causes detriment to these three viscus can also cause formerly mature organs to become vacuous and insufficient. Things which can damage the lungs include excessive grief and sorrow and the chronic presence of evil qi, including wind evils, phlegm, and dampness. Signs and symptoms of lung qi vacuity include spontaneous perspiration, a weak voice, rapid breathing, and easy contraction of wind evils. Things which can damage the spleen include foods which engender excessive fluids, such as sweets, dairy products, and excessive oils and fat, and uncooked, chilled foods, as well as excessive fatigue, excessive worry and anxiety, excessive use of antibiotics, chronic respiratory and/or digestive diseases, and insufficient physical exercise. Signs and symptoms of spleen qi vacuity include fatigue, lack of strength, somnolence, lack of warmth in the hands and feet, torpid intake, loose stools, a fat tongue with teeth-marks on its edges, and a fine, forceless pulse. Things which can damage the kidneys include excessive fear and fright, excessive use of steroids, excessive use of anti-asthmatics, inappropriate use of antidepressants, premature sex, and artificial sweeteners. Signs and symptoms of kidney vacuity include frequent urination, nocturia, enuresis, low back and knees soreness

and limpness, the five softs, and the five slows, *i.e.*, abnormally slow development. If there is kidney yang vacuity, then there will also be a pale tongue, a deep, slow pulse, and fear of cold. If there is kidney yin vacuity, there will also be a red facial complexion, hot hands and feet, and night sweats.

There are several types of repletions of evil qi which may also be involved in enuresis. We have mentioned liver channel damp heat above. However, there is more to say about the liver. According to Chinese medicine, the liver is inherently replete in infants and children. Repletions in the liver begin with liver depression qi stagnation. When the liver becomes depressed, it commonly counterflows to attack the spleen and stomach, especially if the spleen is vacuous and weak and unable to protect itself. What this means in clinical practice is that spleen vacuity is commonly complicated by liver depression. This is a mixed vacuity-repletion pattern. If the liver becomes depressed and the qi becomes stagnant, qi stagnation may transform into depressive heat. If this depressive heat joins with dampness, it may give rise to damp heat. However, because of the close association between the liver and the stomach, liver depression transforming heat may also give rise to depressive heat in the stomach. When the stomach becomes hot, it becomes hyperactive. One of the functions of the stomach is to send the turbid part of water and foods downward to the kidneys and bladder for excretion. If a hot stomach sends too many water fluids downward, this can cause or contribute to flooding-over of the bladder. And finally, because the spleen is the root of the engenderment and transformation of the defensive qi which is sent up to the lungs for distribution through the exterior, it is said that children easily contract external wind evils. Since the lungs govern the defensive exterior, these wind evils inhibit the diffusion and depuration of the lung qi which then inhibits the descension and depuration of water fluids. Thus wind evils lodged in the lungs can also play a part in enuresis.

Some mention also needs to be made of the heart and its role in enuresis. The heart spirit is nothing other than an accumulation of the heart qi nourished and enriched by blood and kidney essence. Further, this heart qi mainly comes from the clear qi upborne by the spleen. Therefore, because of inherent spleen vacuity in children, there tends to be an inherent heart qi and blood vacuity which is compounded by the inherent kidney vacuity we talked

about above. This is why it is said in Chinese medicine that children's spirits are unstable and easily disquieted. When the spirit is quiet and tranquil, heart fire or yang moves downward to the kidneys to transform cold water. But, when the spirit is disquieted, it tends to stir frenetically and counterflow upward. Hence, heart fire and kidney water fail to interact, and this may also lead to the kidney qi failing to secure and astringe and control urination. In this case, kidney vacuity is the proximate cause of enuresis, but a disquieted heart spirit is a complicating or even causative factor.

Before moving on to the Chinese medical treatment of enuresis, I would also like to explain why deep sleep is such a common part of pediatric enuresis. Consciousness in Chinese medicine is a function of the clear yang qi. We wake when the clear yang qi is upborne to the heart which allows the spirit to flow freely to and through the sensory orifices to connect with the outside world. We go to sleep when this clear yang qi retreats and descends to the inner and lower parts of the body away from the heart. The clear yang qi is a by-product of water and foods transformed by the spleen and catalyzed by the kidneys, and we have seen that the spleen and kidneys are inherently vacuous and weak in children. In addition, when the yang qi arises to the heart, it must penetrate any phlegm, dampness, and turbidity before it can flow freely to and through the orifices, and infants and children typically have more phlegm, dampness, and turbidity than adults do. Thus the abnormal deep sleep of the pediatric enuresis patient is typically some combination of spleen-kidney vacuity complicated by phlegm, dampness, and turbidity.

Treatment Based on Pattern Discrimination

The hallmark of professional Chinese medicine or TCM is that, no matter what the disease diagnosis, treatment is primarily predicated on pattern discrimination. Therefore, pattern discrimination is the absolute prerequisite for treating enuresis with TCM. In general, the patterns of enuresis can be divided into vacuity and repletion patterns, with vacuity patterns being the far more important in pediatric bed-wetting. Kidney qi vacuity and spleen-lung qi vacuity are the two main vacuity patterns of enuresis, and these two patterns often complicate each other. Further, kidney qi vacuity may also be complicated by either yin or yang vacuity. Liver channel damp heat is the one repletion pattern of enuresis.

Vacuity patterns of enuresis

1. Kidney qi insufficiency

Note: Kidney qi insufficiency specifically refers to an insufficiency of the kidney qi not securing. Kidney qi insufficiency may manifest without either yin or yang vacuity or it may complicate either kidney yin or yang vacuity depending on the child's constitutional predisposition. Because it is a fundamental statement of fact that the kidneys do not become exuberant till puberty and are not firm and mature until the early 20s, an element of kidney qi vacuity is endemic to infants and young children.

Signs & symptoms: Nocturnal enuresis one or more times per night, deep sleep, not easy to wake when called, devitalized essence spirit, a normal tongue with white fur, and a forceless pulse

Treatment principles: The treatment principles for kidney qi insufficiency without concomitant yin or yang vacuity are to supplement the kidneys and secure the essence

Guiding formula: *Jin Suo Gu Jing Wan* (Golden Lock Secure the Essence Pills)

Sha Yuan Zi (Semen Astragali Complanati), 3-10g

Qian Shi (Semen Euryalis), 3-10g

Lian Zi (Semen Nelumbinis), 6-15g

Lian Xu (Stamen Nelumbinis), 3-10g

calcined *Mu Li* (Concha Ostreae), 3-15g

Long Gu (Os Draconis), 3-15g

Method of administration: This formula is available as ready-made pills for children old enough to swallow them. It is also possible to grind up these pills, mix them with some warm water and a little sugar, and administer them by spoon. For very young children or for those the previous two methods of administration do not work, one can make a decoction out of bulk-dispensed medicinals and then administer the resulting strained medicinal liquid with an eye-dropper. In this latter case, one can use the above dosages for making such a decoction, choosing either the high or low dose depending on the age and weight of the child. This formula may be made out of desiccated extracts, mixed with water and a little sugar, and administered by spoon or eyedropper.

Additions & subtractions: If one is administering this formula as a decoction, one can add 3-6 grams of *Jin Ying Zi* (Fructus Rosae Laevigatae) in order to increase its ability to secure and astringe. If there is a spleen-kidney qi vacuity, one can add 6-18 grams of *Huang Qi* (Radix Astragali) and 3-15 grams of *Dang Shen* (Radix Codonopsis) to fortify the spleen and boost the qi.

Acupuncture: Needle *San Yin Jiao* (Sp 6) and *Guan Yuan* (CV 4) with supplementing hand technique

Note: Acupuncture is typically done in China once every other day for the treatment of pediatric enuresis.

Tuina: Press-rotate *Shen Jing* (Kidney Channel), press-rotate *Pi Jing* (Spleen Channel), press-rotate *Dan Tian* (CV 4-6), and push *Qi Jie Gu* (Seven Segments Bone).

1A. Kidney yang vacuity (i.e., lower origin vacuity cold)

Signs & symptoms: Night-time enuresis one or more times per

night, frequent, clear urination, a pale facial complexion, chilled hands and feet, aversion to cold, a pale tongue with thin, white fur, and a deep, slow, relatively forceless pulse

Treatment principles: Supplement the kidneys, invigorate and/or warm yang, and secure the essence

Guiding formula: *Shen Qi Wan* (Kidney Qi Pills)

Shu Di (cooked Radix Rehmanniae), 6-18g

Shan Zhu Yu (Fructus Corni), 3-10g

Shan Yao (Radix Dioscoreae), 3-10g

Fu Ling (Poria), 3-10g

Ze Xie (Rhizoma Alismatis), 3-10g

Dan Pi (Cortex Moutan), 3-10g

Rou Gui (Cortex Cinnamomi), 1.5-6g

Zhi Fu Zi (Radix Lateralis Praeparatus Aconiti Carmichaeli), 1.5-6g

Method of administration: Same as above

Additions & subtractions: To increase this formula's ability to secure the essence and reduce urination, one can add 3-10 grams of *Wu Wei Zi* (Fructus Schisandrae). If there are concomitant loose stools or diarrhea, add 6-15 grams of *Bu Gu Zhi* (Semen Psoraleae).

Acupuncture: Needle *San Yin Jiao* (Sp 6) and *Guan Yuan* (CV 4) with supplementing hand technique and burn moxa on the heads of the needles or warm the points with a moxa pole.

Tuina: In addition to the same tuina maneuvers for kidney qi vacuity above, chafe *Ming Men* (GV 4) and chafe *Ba Liao* (BL 31-34).

1B. Kidney yin vacuity

Signs & symptoms: Night-time enuresis one or more times per night, sleeping without covers, possible night sweats, flushed face, hot hands and feet, thirst, chronic, dry sore throat, a red tongue with thin, possibly scanty or dry fur, and a fine, rapid or surging pulse

Treatment principles: Supplement the kidneys, enrich yin, and secure the essence

Guiding formula: *Liu Wei Di Huang Wan* (Six Flavors Rehmannia Pills)

Shu Di (cooked Radix Rehmanniae), 6-15g

Shan Zhu Yu (Fructus Corni), 3-10g

Shan Yao (Radix Dioscoreae), 3-10g

Fu Ling (Poria), 3-10g

Ze Xie (Rhizoma Alismatis), 3-10g

Dan Pi (Cortex Moutan), 3-10g

Method of administration: Same as above

Additions & subtractions: To increase this formula's ability to secure the essence and reduce urination, one can add 3-10 grams of *Wu Wei Zi* (Fructus Schisandrae). If there is yin vacuity with internal heat (*i.e.*, more prominent heat signs and symptoms), add 3-10 grams each of *Zhi Mu* (Rhizoma Anemarrhenae) and *Huang Bai* (Cortex Phellodendri). This makes *Zhi Bai Di Huang Wan* (Anemarrhena & Phellodendron Rehmannia Pills) which are also available in ready-made pill form. If there is concomitant spleen qi vacuity, one can add 6-18 grams of *Huang Qi* (Radix Astragali) and 3-10 grams of *Dang Shen* (Radix Codonopsisitis) to fortify the spleen and boost the qi. If there is concomitant food stagnation, one should remove *Shu Di* and add 3-10 grams each of *Bai Zhu* (Rhizoma Atractylodis Macrocephalae) and *Ji Nei Jin* (Endothelium Corneum Gigeriae Galli) and 1-6 grams of *Sha Ren* (Fructus Amomi).

Acupuncture: Needle *San Yin Jiao* (Sp 6), *Tai Xi* (Ki 3), and *Guan Yuan* (CV 4) with supplementing hand technique

Tuina: In addition to the same tuina maneuvers for kidney qi vacuity above, press-rotate *San Yin Jiao* (Sp 6) and press-rotate *Er Ren Shang Ma* (Two Men on a Horse) located in the depression on either side of the metacarpal bone of the little finger on the back of the hand just proximal to the metacarpal-phalangeal joint.

2. Spleen-lung qi vacuity

Signs & symptoms: Nocturnal enuresis, frequent and profuse urination, a lusterless facial complexion, fatigued spirit, lack of strength, devitalized appetite, thin, sloppy stools, a pale tongue with thin, white fur, and a fine, forceless pulse

Treatment principles: Fortify the spleen and boost the qi

Guiding formula: *Bu Zhong Yi Qi Tang* (Supplement the Center & Boost the Qi Decoction)

Ren Shen (Radix Ginseng), 3-6g, or *Dang Shen* (Radix Codonopsis), 6-15g
Huang Qi (Radix Astragali), 6-18g
Bai Zhu (Rhizoma Atractylodis Macrocephalae), 3-10g
Dang Gui (Radix Angelicae Sinensis), 3-10g
Chen Pi (Pericarpium Citri Reticulatae), 1.5-6g
Chai Hu (Radix Bupleuri), 1.5-10g
Sheng Ma (Rhizoma Cimicifugae), 1.5-6g
 mix-fried *Gan Cao* (Radix Glycyrrhizae), 1.5-10g

Method of administration: Same as above

Additions & subtractions: To increase this formula's ability to secure the essence and reduce urination, one can add 3-15 grams of *Yi Zhi Ren* (Fructus Alpiniae Oxyphyllae). If there are loose stools, add 3-6 grams of *Pao Jiang* (blast-fried Rhizoma Zingiberis). If there is difficulty waking the child up, add 3-10 grams of *Shi Chang Pu* (Rhizoma Acori Tatarinowii).

Acupuncture: Needle *San Yin Jiao* (Sp 6), *Zu San Li* (St 36), and *Guan Yuan* (CV 4) with supplementing hand technique.

Tuina: Press-rotate *Pi Shu* (Bl 20), press-rotate *Fei Jing* (Lung Channel), and press-rotate *Xin Shu* (Bl 15).

Repletion pattern of enuresis

1. Liver channel damp heat

Signs & symptoms: Nocturnal enuresis, frequent, scanty urination, yellowish urine, a rash and impatient nature, heat in the heart of the palms and soles, dry, red, possibly chapped lips, a red tongue with yellow fur, and a bowstring, slippery pulse

Note: This pattern is not commonly seen in pediatric enuresis, especially in cases of PNE. This pattern is slightly more common in cases of SNE. In clinical practice, it is extremely important to discriminate this pattern from the more commonly seen vacuity patterns above.

Treatment principles: Drain the liver, clear heat, and eliminate dampness

Guiding formula: *Long Dan Xie Gan Tang* (Gentiana Drain the Liver Decoction)

- Long Dan Cao* (Radix Gentianae), 3-10g
- Zhi Zi* (Fructus Gardeniae), 3-10g
- Huang Qin* (Radix Scutellariae), 3-10g
- Mu Tong* (Caulis Akebiae), 3-10g
- Che Qian Zi* (Semen Plantaginis), 3-10g
- Ze Xie* (Rhizoma Alismatis), 3-10g
- Chai Hu* (Radix Bupleuri), 3-10g
- Sheng Di* (uncooked Radix Rehmanniae), 3-15g
- Dang Gui* (Radix Angelicae Sinensis), 3-10g
- uncooked *Gan Cao* (Radix Glycyrrhizae), 1-6g

Method of administration: Same as above

Additions & subtractions: One may delete *Huang Qin* from the above formula if possible.

Acupuncture: Needle *San Yin Jiao* (Sp 6) and *Guan Yuan* (CV 4) with draining hand technique

Tuina: Push *Gan Jing* (Liver Channel), push *Da Chang Jing* (Large Intestine Channel), and push *Tian He Shui* (Milky Way) located on the midline of the ventral surface of the forearm from the carpal crease to the elbow crease.

BASIC PATTERNS & FORMULAS FOR ENURESIS TO MEMORIZE	
PATTERN	FORMULA
Kidney qi vacuity	<i>Jin Suo Gu Jing Wan</i>
Kidney yang vacuity	<i>Shen Qi Wan</i>
Kidney yin vacuity	<i>Liu Wei Di Huang Wan</i>
Spleen-lung qi vacuity	<i>Bu Zhong Yi Qi Tang</i>
Liver channel damp heat	<i>Long Dan Xie Gan Tang</i>

Remarks:

The previous standard patterns and their treatments are only for textbook purposes. They do not necessarily represent real-life situations. Most children who wet their bed present some combination of kidney-spleen-lung vacuity. Which viscus is the most vacuous depends on the child's inherent constitution as well as on their diet, lifestyle, and previous medical treatment. Therefore, most internally administered Chinese herbal treatments for pediatric enuresis will include some kidney supplements, some spleen supplements, and some securing and astringing medicinals. The following chapter presents how real-life Chinese doctors have treated their patients.

Chinese Research on the Treatment of Pediatric Enuresis

The treatment of enuresis is unique within Chinese medicine. The vast majority of diseases are treated most effectively by using one particular modality, whether it be tuina, acupuncture, external or internal Chinese medicinals, or dietary therapy. However, in the treatment of enuresis, all these forms of treatment are effective as indicated by the research that follows as well as other forms of therapy including magnet, laser, or umbilical therapy to name a few. In clinic, these various treatments may be used by themselves or in combination. In stubborn cases of enuresis, these treatments can also be used in tandem with modern Western medical approaches, such as alarm therapy. Acupuncturists may improve their treatment outcomes by adding tuina or externally applied medicinals to their treatment protocol, while herbalists may decide that externally applied medicinals or a referral to an acupuncturist may be useful for improving their treatment outcomes. In addition, the wealth of treatments included herein will allow the practitioner various options if their first treatment is not successful or if the child/family is not compliant with the modality the practitioner has suggested.

The research abstracts in this chapter have been divided into various categories based on the treatment modalities employed. These sections include internal medicine, *i.e.*, ancient formulas, treatment based on pattern discrimination, and empirical formulas, external treatments, acupuncture-moxibustion, tuina, combined therapies, and additional treatments under a category referred to as "same disease, different treatments." The internal medicine abstracts have been further subdivided into the categories of traditional formulas, pattern discrimination, simple formulas, etc. The external treatments include various medicinal formulas applied to acupuncture points or to the umbilicus (*i.e.*, navel therapy). The

combined therapies section reviews articles in which TCM doctors combine various modalities together to improve their treatment outcomes. The “same disease, different treatments” section includes any modality not previously covered in the above sections.

Note: In the following abstracts of Chinese research on pediatric enuresis, the reader will commonly see three outcomes: cured, improved, and not improved. These refer to standardized outcomes criteria as found in *Zhong Yi Bing Zheng Zhen Duan Liao Xiao Biao Sun (Criteria for the Chinese Medical Diagnosis of Diseases & Patterns and Treatment Outcomes)* published by the National Chinese Medical Press in Nanjing in 1994. According to these criteria, cured means that the enuresis has been eliminated and has not returned after treatment, improvement means that the frequency of the enuresis has been reduced and the child is able to wake at night to urinate, and no improvement means that there has been no change in the enuresis.

Ancient formulas

This section describes the use of so-called *jing fang* (classic formulas) or *gu fang* (ancient formulas) to treat enuresis. These formulas may either have been used in the past to treat enuresis or they may have been used traditionally to treat other diseases but have been recently modified by doctors to treat enuresis. This is a common approach in TCM and is the one that I most commonly apply in my own clinical practice, whether to treat pediatric enuresis or any disease. Each of these formulas have been time-tested, sometimes over almost 2,000 years. Therefore, they are dependably effective in clinical practice.

1. From “The Treatment of 30 Cases of Pediatric Enuresis with *Wu Zi Si Jun Tang* (Five Seeds & Four Gentlemen Decoction)” by Xiong Lei, *Jiang Su Zhong Yi (Jiangsu Chinese Medicine)*, 2000, #2, p. 23

Cohort description:

Thirty cases were enrolled in this study, 22 males and eight females. The oldest child was 13 years old and the youngest was 5.5 years old. The course of the disease ranged from four months to eight years. All patients had the following symptoms to varying

degrees: a yellow facial complexion, emaciated body, lusterless hair, and poor appetite.

Treatment method:

All patients in this study received the following Chinese medicinals:

Sang Piao Xiao (Ootheca Mantidis), 10g
Tai Zi Shen (Radix Pseudostellariae), 15g
Bai Zhu (Rhizoma Atractylodis Macrocephalae), 6g
Fu Ling (Poria), 10g
Qian Shi (Semen Euryalis), 10g
Lian Zi (Semen Nelumbinis), 10g
Fu Pen Zi (Fructus Rubi), 10g
Tu Si Zi (Semen Cuscutae), 10g
Jin Ying Zi (Fructus Rosae Laevigatae), 10g
Bu Gu Zhi (Fructus Psoraleae), 10g
Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 10g
Ma Huang (Herba Ephedrae), 6g
Gan Cao (Radix Glycyrrhizae), 6g

One packet of these medicinals was decocted and administered per day before eight o'clock at night. Ten days equaled one course of treatment. The results were recorded after one course of treatment and a return visit three months later.

Study outcomes:

Twelve cases were cured, 16 cases improved, and two cases had no effect. Therefore, the total amelioration rate was 93.3%. No cases of enuresis returned or increased after stopping treatment, and there were no side effects noted by any patients during the treatment. The shorter the disease duration, the more pronounced the treatment outcome.

Discussion:

This doctor combines two traditional formulas together with modifications which results in their self-devised formula for the treatment of enuresis. The two main formulas (*Si Jun Zi Tang* and *Wu Zi Yang Zong Tang*) address the vacuity of the two main organs involved in enuresis—the spleen and the kidneys.

2. From "The Treatment of 30 Cases of Long-term Pediatric Enuresis with *Gui Zhi Tang* (Cinnamon Twig Decoction)" by Wang Wei & Wang Yue, *Ji Lin Zhong Yi Yao (Jilin Chinese Medicine & Medicinals)*, 1998, #4, p. 36

Cohort description:

In total, the current study group involved 30 children between the ages of 3-6 years old. The disease condition manifested as frequent enuresis during the night with long, clear urination. The children were habitually fatigued and were too lazy to move. There was also sweating after slight exertion, a somber white facial complexion, cool limbs, and fear of cold. Their stool and appetite were basically normal.

Treatment method:

Jia Wei Gui Zhi Tang (Added Flavors Cinnamon Twig Decoction) was composed of:

Gui Zhi (Ramulus Cinnamomi), 10g
Bai Shao (Radix Paeoniae Albae), 10g
Sheng Jiang (uncooked Rhizoma Zingiberis), 3 slices
Da Zao (Fructus Jujubae), 5 pieces
 mix-fried *Gan Cao* (Radix Glycyrrhizae), 6g
Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 15g
Tu Si Zi (Semen Cuscutae), 15g
Wu Yao (Radix Linderae), 10g
Mu Gua (Fructus Chaenomelis), 2 pieces

Twenty packets of these medicinals equaled one course of treatment. These medicinals were taken after supper, and the parents were instructed not to give the child any soup, water, or other fluids prior to the decoction. Also, every evening, the child was awakened in a timely manner to urinate.

Study outcomes:

There was full recovery in four cases, obvious improvement in 15 cases, and some improvement in 11 cases. The overall effectiveness rate was thus 100%.

Discussion:

In ancient Chinese medicine, *Gui Zhi Tang* was a commonly used classical formula for the treatment of *tai yang* wind stroke (exterior or vacuity) pattern. However, in modern Chinese medicine, this formula may be used as a basic formula for both external contractions and internal damage. The authors of this article say that, if one analyzes the disease mechanism of pediatric enuresis, one will see that there is lung vacuity and qi weakness as well as vacuity cold of the lower origin. *Gui Zhi Tang* not only regulates and harmonizes the constructive and defensive, it also warms and frees the flow of the bladder channel. *Yi Zhi Ren* and *Tu Si Zi* are added to warm the kidneys and secure and contain. *Wu Yao* is added to strengthen and warm the kidneys and dissipate cold.

3. From “The Treatment of 43 Cases of Pediatric Enuresis Combining *Jin Suo Gu Jing Wan* (Golden Lock Essence-securing Pills) with *Liu Wei Di Huang Wan* (Six Flavors Rehmannia Pills)” by Zou Shi-chang, *Ji Lin Zhong Yi Yao (Jilin Chinese Medicine & Medicinals)*, 1998, #5, p. 39

Cohort description:

Among the 43 patients included in this clinical trial, 29 cases were male and 14 cases were female. Twenty-five cases were between the ages of 5-10, and 18 cases were between the ages of 10-16 years old. These children had enuresis as much as 2-3 times per night and as little as 3-4 times per week. Among the patients, 18 cases had frequent urination during the day, and 14 cases had urgency of urination, fatigued spirit, and lack of strength. The patients were not easy to awake and, after awake, were drowsy. Their tongues were pale with thin, white fur, and their pulses were fine and weak.

Treatment method:

Five to 10 year-olds took five grams of *Jin Suo Gu Jing Wan* (Golden Lock Essence-securing Pill) two times per day; 10-16 year-olds took eight grams two times per day. These pills were taken on an empty stomach with warm water. At the same time, 5-10 year-olds took three grams of *Liu Wei Di Huang Wan* (Six Flavors Rehmannia Pills) two times per day; 10-16 year-olds took

five grams of *Liu Wei Di Huang Wan* two times per day. These pills were also taken on an empty stomach with warm water.

Study outcomes:

In general, after approximately seven days of treatment, the child was able to wake to urinate and the frequency of enuresis was reduced. Most times, it took 20-30 days of taking medicinals to stop the enuresis. Among the 43 patients, the longest a patient took the medicinals was 30 days and the shortest length of time was 10 days. Among these cases, 36 (83.37%) were cured, five (11.6%) improved, and two (4.7%) did not improve. The total amelioration rate was 95.3%.

Discussion:

Dr. Zou says pediatric enuresis is often due to kidney essence insufficiency, kidney qi not securing, and loss of regulation of the bladder's opening and closing. Therefore, the author believes the appropriate treatment to stop enuresis is to strengthen, regulate, and supplement the kidneys and secure and contain. *Jin Suo Gu Jing Wan* secures the kidneys and astringes the essence and, therefore, can be used to treat enuresis due to kidney vacuity. *Liu Wei Di Huang Wan* supplement the kidneys and enrich yin. *Jin Suo Gu Jing Wan* and *Liu Wei Di Huang Wan* are available in ready-made form from many different companies in North America and Europe.

4. From "The Treatment of 126 Cases of Pediatric Enuresis with *Shao Yao Gan Cao Tang Jia Wei* (Peony & Licorice Decoction with Added Flavors)" by Wang Shi-biao, *Zhe Jiang Zhong Yi Za Zhi* (Zhejiang Journal of Chinese Medicine), 1992, #2, p. 54

Cohort description:

There were 126 cases included in this study, 96 males and 30 females. The patients were between 3-13 years old. Forty-four cases were between 3-5 years old, 69 cases were 6-8 years old, 13 cases were 9-13 years old. The course of disease was between two months to 10 years. The frequency of enuresis ranged from two times per week to five times per night, with the majority of patients having enuresis 1-2 times per night. Eighty-two cases were

difficult to wake when called, 43 cases had a tongue with red sides, 34 cases had a red tongue, and 14 cases had a pale tongue. The tongue fur was thin and yellow in 57 cases, slimy in 26 cases, and peeled in 12 cases. The pulse was bowstring in 96 cases, fine in 14 cases, and slippery and rapid in 16 cases.

Treatment method:

The basic formula administered in this study consisted of:

Bai Shao (Radix Paeoniae Albae), 15-60g
 mix-fried *Gan Cao* (Radix Glycyrrhizae), 9g
Fu Pen Zi (Fructus Rubi), 9g
Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 9g
Shan Yao (Radix Dioscoreae), 9g
Gui Zhi (Ramulus Cinnamomi), 3-6g

If there was severe qi vacuity, nine grams of *Dang Gui* (Radix Angelicae Sinensis) and five grams of *Wu Wei Zi* (Fructus Schisandrae) were added. If the child was difficult to wake, nine grams of uncooked *Ma Huang* (Herba Ephedrae) and five grams of mix-fried *Yuan Zhi* (Radix Polygalae) were added. If there was chronic or severe enuresis, 20 grams of *Qian Shi* (Semen Euryalis) and 20-30 grams of *Ying Su Ke* (Pericarpium Papaveris Somniferi) were added. Each day, one packet of these medicinals was decocted in water for 30-60 minutes and administered orally.

Study outcomes:

One hundred thirteen cases were cured, 10 cases improved, and three cases got no improvement. Therefore, the total amelioration rate was 97.6%. The shortest length of treatment was three days and the longest was 27.

5. From "Modified *Gui Zhi Jia Long Gu Mu Li Tang* (Cinnamon Twig Plus Dragon Bone & Oyster Shell Decoction) in the Treatment of 104 Cases with the Pattern of Lower Origin Vacuity Cold" by Cheng Li-chang, *An Hui Zhong Yi Lin Chuang Za Zhi* (Anhui Clinical Journal of Chinese Medicine), 1999, # 2, p. 99

Cohort description:

In this study, there were 104 cases of pediatric enuresis, 58

males and 46 females. Their ages ranged from three to 14 years of age. Forty-two cases were between 3-5 years old, 31 cases were between 6-8 years old, 15 cases were between 9-11 years old, and 16 cases were between 12-14 years old. The course of disease was 1-3 years in 54 cases, 4-6 years in 37 cases, and 7-9 years in 13 cases. X-ray examination showed 13 cases (12.5 %) had spina bifida. The patients also had routine urine tests and all tests were normal. These children were all unable to contain themselves, with enuresis during sleep that was frequent and copious and more than one time each evening. During the day-time, these children felt fatigued. Other signs and symptoms included lack of strength, a somber white facial complexion, fear of cold, cold limbs, lack of warmth in the extremities, low back and knee aching and limpness, somewhat less than normal intelligence, usually long, clear urination, a pale tongue with thin, white fur, and a fine, deep or slow, deep pulse.

Treatment method:

Modified *Gui Zhi Jia Long Gu Mu Li Tang* consisted of:

Gui Zhi (Ramulus Cinnamomi), 10g
Bai Shao (Radix Paeoniae Albae), 10g
 mix-fried *Gan Cao* (Radix Glycyrrhizae), 5g
 calcined *Long Gu* (Os Draconis), 15g
 calcined *Mu Li* (Concha Ostreae), 15g
Ba Ji Tian (Radix Morindae Officinalis), 10g
Bu Gu Zhi (Fructus Psoraleae), 10g
Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 10g
Sang Piao Xiao (Ootheca Mantidis), 10g
Wu Yao (Radix Linderae), 10g
Da Zao (Fructus Jujubae), 7 pieces
Sheng Jiang (uncooked Rhizoma Zingiberis), 3 slices

One packet of these medicinals was decocted in water, divided into four doses, and administered warm per day. Seven packets equaled one course of treatment. Total length of treatment was three courses. While taking these medicinals, all other medicinals and treatments were stopped.

If there was inability to wake from sleep, five grams of *Dan Nan*

Xing (bile-processed Rhizoma Arisaematis) and seven grams of *Shi Chang Pu* (Rhizoma Acori Tatarinowii) were added in order to transform phlegm and arouse the spirit. If there was devitalized intake and sloppy stools, 10 grams of earth-fried *Bai Zhu* (Rhizoma Atractylodis Macrocephalae) and five grams of *Sha Ren* (Fructus Amomi) were added in order to fortify the spleen and harmonize the center. If there was shortness of breath and laziness to speak, 10 grams each of *Huang Qi* (Radix Astragali) and *Tai Zi Shen* (Radix Pseudostellariae) were added in order to boost the qi and support the righteous. If there was spontaneous perspiration or night sweats 15 grams each of *Ma Huang Gen* (Radix Ephedrae) and *Fu Xiao Mai* (Fructus Levis Triticici) were added in order to secure the interstices and stop sweating.

Study outcomes:

After the above treatment, 83 cases (79.8%) had no enuresis and were considered cured. Among these, 23 cases took seven packets of medicinals, 37 cases took 14 packets of medicinals, and nine cases took 21 packets of medicinals. Some improvement was shown in 16 cases (15.4%), and no improvement was observed in five cases (4.8%). Therefore, the total amelioration rate was 95.2%, and there were no side effects observed during treatment.

Discussion:

The formula *Gui Zhi Jia Long Gu Mu Li Tang* first appeared in the *Jin Gui Yao Lue* (*Essentials from the Golden Cabinet*). In this classic, it was indicated for vacuity taxation and loss of essence conditions. Dr. Cheng finds this formula often produces instantaneous results when used to treat the lower origin vacuity cold pattern of enuresis. *Gui Zhi Jia Long Gu Mu Li Tang* regulates and supplements both yin and yang, subdues yang, and promotes absorption. Within the above formula, *Bai Ji Tian* and *Bu Gu Zhi* are added to warm yang and supplement the kidneys. *Wu Yao* fortifies the spleen, assists in movement, and warms the bladder qi transformation. *Yi Zhi Ren* and *Sang Piao Xiao* secure, astringe, and stop enuresis. If yang is secured and yin is stabilized, then the qi transformation of the bladder returns to normal and enuresis is stopped.

6. From "The Treatment of 50 Cases of Pediatric Enuresis with *Jia Wei Wu Zi Yan Zong Tang* (Five Seeds Increase Progeny Decoction with Added Flavors)" by Peng Xi-zhen, *Shang Hai Zhong Yi Yao Za Zhi* (Shanghai Journal of Chinese Medicine & Medicinals), 1984, #3, p. 18

Cohort description:

There were 50 cases of pediatric enuresis included in this clinical trial. All presented a pattern of spleen-kidney dual vacuity.

Treatment method:

Jia Wei Wu Zi Yan Zong Tang was composed of:

Tu Si Zi (Semen Cuscutae)

Gou Qi Zi (Fructus Lycii)

Fu Pen Zi (Fructus Rubi)

Che Qian Zi (Semen Plantaginis)

Wu Wei Zi (Fructus Schisandrae), no amounts given

If there was spleen-lung qi vacuity, *Dang Shen* (Radix Codonopsis), *Yi Zhi Ren* (Fructus Alpiniae Oxyphyllae), and *Shan Yao* (Radix Dioscoreae) were added.

Study outcomes:

Forty-two cases were cured, three cases improved, and five cases got no improvement. In general, these patients needed to take 8-20 packets to cure their condition.

Discussion:

Wu Zi Yang Zong Tang originally appeared in *Dan Xi Xin Fa* (Dan Xi's Heart Methods) where it was primarily used to treat kidney qi insufficiency, impotence, premature aging in adolescents, and seminal cold with no semen. Dr. Peng, based on the Chinese medical theory of "different diseases, same treatment," uses *Wu Zi Yang Zong Tang* to treat pediatric enuresis. Within this formula, the sovereign and ministerial medicinals, *Tu Si Zi* and *Fu Pen Zi*, have a warm nature and both enter the liver and kidney channels. These medicinals boost the kidneys and reduce urination. *Gou Qi Zi* supplements the kidneys, secures and astringes, nourishes the

liver and fortifies the spleen. This medicinal enters the lung, spleen, and kidney channels. *Che Qian Zi* is the assistant medicinal. Its nature is cold, and it enters the lung, kidney, and small intestine channel. *Che Qian Zi*'s function is to disinhibit urination and percolate dampness. It is used here to eliminate dampness which might otherwise damage the center and to counteract the slimy nature of the other medicinals. *Wu Wei Zi* is the envoy medicinal. It enters the lung and kidney channels and has the ability to guide the action of the formula to these channels. *Wu Wei Zi* also has the functions to constrain the lungs, enrich the kidneys and secure and astringe. The addition of *Dang Shen*, *Yi Zhi Ren*, and *Shan Yao* is in order to supplement the lungs and fortify the spleen.

7. From "The Therapeutic Effects of Treating 167 Cases of Pediatric Enuresis by Regulating & Supplementing the Spleen & Kidneys" by Yang Li-Guo, *Zhe Jiang Zhong Yi Xue Yuan Xue Bao (Academic Journal of Zhejiang College of Chinese Medicine)*, 1993, #5, p. 26

Cohort description:

There were 167 cases in this study, 91 males and 76 females, all between the ages of 3-16 years old. All these patients had enuresis more than one time every day during their nap or at night during sleep. These patients were divided into three groups: a supplement the spleen group, a supplement the kidneys group, and a supplement the spleen and kidneys group. In the supplement the spleen group, there were 42 patients, 23 males and 19 females. In the supplement the kidneys group, there were 61 patients, 33 males and 28 females, and, in the supplement the spleen and kidneys group, there were 64 patients, 35 males and 29 females.

Treatment method:

All three groups were administered as the basis of treatment *Suo Quan Wan Jia Sang Piao Xiao* (Reduce the Stream Pills plus Mantis Egg-case). This was composed of:

Wu Yao (Radix Linderae)

Yi Zhi Ren (Fructus Alpiniae Oxyphyllae)

Shan Yao (Radix Dioscoreae)

Sang Piao Xiao (Ootheca Mantidis)

In addition, the supplement the spleen group was also administered *Bu Zhong Yi Qi Tang* (Supplement the Spleen & Boost the Qi Decoction) minus *Dang Gui* (Radix Angelicae Sinensis):

- Huang Qi* (Radix Astragali)
- Gan Cao* (Radix Glycyrrhizae)
- Dang Shen* (Radix Codonopsitis)
- Ju Pi* (Exocarpium Citri)
- Sheng Ma* (Rhizoma Cimicifugae)
- Chai Hu* (Radix Bupleuri)
- Bai Zhu* (Rhizoma Atractylodis Macrocephalae).

The supplement the kidney group was also administered *Wu Zi Yan Zong Wan* (Five Seeds Increase Progeny Pills) minus *Che Qian Zi* (Semen Plantaginis):

- Gou Qi Zi* (Fructus Lycii)
- Wu Wei Zi* (Fructus Schisandrae)
- Tu Si Zi* (Semen Cuscutae)
- Fu Pen Zi* (Fructus Rubi)

The supplement the spleen and kidneys group used a combination of the above three formulas. One packet of the above group-appropriate medicinals was decocted in water and administered per day to all three groups.

Study outcomes:

GROUP	NUMBER	CURE	IMPROVED	NO IMPROVEMENT	TOTAL AMELIORATION
Spleen group	42	16	11	15	64.22%
Kidney group	61	28	15	18	70.49%
Spleen-kidney	64	39	17	8	87.5%

Pattern discrimination

This section includes abstracts of articles where the doctors pre-scribed various Chinese herbal formulas based on pattern discrimination or modified their base formula based on pattern discrimination.

1. From "The Treatment of Enuresis with Self-devised *Ma Chang Long Mu Tang* (Ephedra, Acorus, Dragon Bone & Oyster Shell Decoction)" by Meng Xiang-min *et al.*, *Gui Lin Zhong Yi Yao* (Guilin Chinese Medicine & Medicinals), 2001, #6, p. 89

Cohort description:

There were 40 patients included in this clinical trial, 24 males and 16 females. These children were all between the ages of 4-12 years old. Twenty-six cases presented a particular pattern of night-time enuresis and 14 cases did not. The number of times of enuresis per night ranged from 1-7 times. The course of disease ranged from 1-7 years.

Treatment method:

Ma Chang Long Mu Tang (Ephedra, Acorus, Dragon Bone & Oyster Shell Decoction) was composed of:

Ma Huang (Herba Ephedrae), 5-10g

Shi Chang Pu (Rhizoma Acori Tatarinowii), 10-20g

calcined *Long Gu* (Os Draconis), 15-25g

Mu Li (Concha Ostreae), 15-25g

If there was kidney qi vacuity as evidenced by enuresis many times per night, cold limbs, aversion to cold, a pale tongue, and deep, forceless pulse, 15-25 grams of *Shan Zhu Yu* (Fructus Corni) and 20-30 grams of *Huang Qi* (Radix Astragali) were added. If there was liver channel damp heat as evidenced by scanty, yellowish urine, a bitter taste in the mouth, a red tongue with yellow fur, and a rapid pulse, 15-25 grams of *Long Dan Cao* (Radix Gentianae) and 10-20 grams each of *Sheng Di* (uncooked Radix Rehmanniae) and *Mu Tong* (Caulis Akebiae) were added. One packet of these medicinals was decocted in water until 200 milliliters of medicinal liquid remained. This resulting liquid was taken in 50 milliliter doses after lunch and dinner. Eight days equaled one course of treatment. If the disease was not cured in one course, treatment was continued for another course.

Study outcomes:

Thirty-four cases were cured, four improved, and two got no

improvement. Fourteen of these cases were cured and one case improved after just one course of treatment. After completing two courses, another case was cured. Therefore, the total amelioration rate was 95%.

2. From “The Empirical Treatment of 36 Cases of Enuresis Mainly by Using Self-devised *He Che Gu Quan San* (Placenta Secure the Stream Powder)” by Yang Dong-shan & Cao Sheng-you, *Gan Su Zhong Yi (Gansu Chinese Medicine)*, 2000, #1, p. 23

Cohort description:

There were a total of 36 patients enrolled in this study, 25 males and 11 females. The youngest was six years old, and the oldest was 36 years old. The shortest course of disease was one year, and the longest was 20 years. All these patients had enuresis 1-2 times per night, and eight cases also had enuresis during their daytime nap. The TCM pattern presented by these patients was central qi vacuity in 18 cases, yang vacuity in 11 cases, damp heat in five cases, and blood stasis in two cases.

Treatment method:

He Che Gu Quan San (Placenta Secure the Stream Powder) was composed of:

Zi He Che (Placenta Hominis) 1 (after washing the placenta and allowed to dry)

Niu Yin Jing (bull penis) 1

Huang Qi (Radix Astragali), 50g

Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 30g

scorched *Du Zhong* (Cortex Eucommiae), 30g

Shu Di (cooked Radix Rehmanniae), 30g

Sang Piao Xiao (Ootheca Mantidis), 30g

Shan Zhu Yu (Fructus Corni), 30g

Gou Qi Zi (Fructus Lycii), 30g

stir-fried *Bai Zhu* (Rhizoma Atractylodis Macrocephalae), 30g

Fu Ling (Poria), 20g

Sha Ren (Fructus Amomi), 20g

If there was shortness of breath, disinclination to talk, lack of strength in the four limbs, a pale tongue, and a weak pulse, 30

grams of *Ren Shen* (Radix Ginseng) and 20 grams of *Sheng Ma* (Rhizoma Cimicifugae) were added. If there was lumber pain, a bitter taste in the mouth, a red tongue with slimy, yellow fur, and a slippery pulse, 30 grams each of *Long Dan Cao* (Radix Gentianae) and *Yi Yi Ren* (Semen Coicis) were added. If there was a dark facial complexion, dark, blue-green tongue body with static spots on the side, and a choppy or rough pulse, 30 grams each of *Tao Ren* (Semen Persicae) and *Di Long* (Pheretima) were added.

These medicinals were all ground into a fine powder and placed in a glass bottle for storage. Children under 12 years of age took 6-10 grams of this powder, two times per day mixed in 80-100 milliliters of hot water and taken warm. One dose was given before breakfast and another was given before dinner. Twelve weeks equaled one course of treatment. During treatment, the patients were asked to avoid fatty, greasy, sweet, or spicy food, alcohol, and cigarettes.

Study outcomes:

Twenty-six cases (72.2%) were cured. nine cases (25.5%) improved, and one case (2.8%) did not improve. Therefore, the total amelioration rate was 97.2%.

3. From “The Treatment of 78 Cases of Pediatric Enuresis by the Method of Regulating Both the Lungs & Kidneys” by Li Xiang Dong, *He Bei Zhong Yi (Hebei Chinese Medicine)*, 2003, #4, p. 269

Cohort description:

There were 78 patients in this study, 47 males and 31 females. These patients ranged in age from 3-14 years old. The course of disease was as short as two months and as long as 11 years. These patients had enuresis less than three times per day in 52 cases and more than three times in 26 cases. Twenty-two cases had a history of enuresis in their family. Nine cases were determined to have occult spina bifida by an x-ray of their lumbosacral area.

Treatment method:

All the patients received the following Chinese medicinal formula:

mix-fried *Ma Huang* (Herba Ephedrae), 9g
Fu Ping Zi (Herba Spirodela), 9g
Gao Ben (Rhizoma Ligustici), 9g
Shi Chang Pu (Rhizoma Acori Tatarinowii), 9g
Jin Ying Zi (Fructus Rosae Laevigatae), 9g
 mix-fried *Gan Cao* (Radix Glycyrrhizae), 5g

If there was lower origin vacuity cold, nine grams each of *Tu Si Zi* (Semen Cuscutae) and *Bu Gu Zhi* (Fructus Psoraleae) were added. If there was spleen-lung dual qi vacuity, nine grams each of *Tai Zi Shen* (Radix Pseudostellariae), *Bai Zhu* (Rhizoma Atractylodis Macrocephalae), and *Shan Yao* (Radix Dioscoreae) and six grams of *Chen Pi* (Pericarpium Citri Reticulatae) were added. If there was liver channel damp heat, nine grams each of *Zhi Mu* (Rhizoma Anemarrhenae) and *Huang Bai* (Cortex Phellodendri) were added.

One packet of these medicinals was decocted per day until the medicinal liquid was reduced to 150 milliliter of liquid. This was divided into two doses and administered. This regime was continued for one month.

Study outcomes:

Thirty-two cases were cured, 41 cases improved, and five cases did not improve. Therefore, the total amelioration rate was 93.6%.

Discussion:

Dr. Li believes that enuresis is often caused by insufficiency of the kidneys and lungs and their consequent inability to perform their physiological functions. Because of this, the author employs the method of regulating both the lungs and kidneys to treat enuresis. Within the above formula, mix-fried *Ma Huang* and *Gao Ben* enter the lung and bladder channels. They diffuse and free the flow of the lung qi and regulate the waterways. *Shi Chang Pu*, when combined with *Ma Huang*, has the ability to arouse the spirit and open the orifices. *Jin Ying Zi* is a sour and astringent medicinal which is able to constrain and contain the urine and stop enuresis, while *Gan Cao* regulates and harmonizes all the other medicinals in the formula.

4. From "The Treatment of Pediatric Enuresis Based on Experience [Using] Chinese Medicinals" by Hou Ge-ping, *Zhe Jiang Zhong Yi Xi Yi Jie He Za Zhi (Zhejiang Journal of Integrated Chinese-Western Medicine Journal)*, 1998, #6, p. 400

Cohort description:

There were 33 cases of pediatric enuresis between the ages of three and 14 years old enrolled in this study. Of these, 19 were male and 14 were female. If the case was considered mild, the child would wet the bed 3-4 times each week, while serious cases would wet the bed 1-2 times a night or even 3-4 times a night. The course of disease was as short as one month and as long as one year.

Treatment method:

Suo Quan Wan (Reduce the Stream Pills) were composed of:

Shan Yao (Radix Dioscoreae), 10-20g

Wu Yao (Radix Linderae), 5-10g

Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 5-10g

If there was kidney yang vacuity presenting with a bright, white facial complexion, aversion to cold, cold limbs, fatigued spirit, lack of strength, long, clear, frequent urination, tender, pale tongue with white fur, and a deep, slow, forceless pulse, 5-10 grams each of *Tu Si Zi* (Semen Cuscutae) and *Fu Pen Zi* (Fructus Rubi) and 3-5 grams of *Bu Gu Zhi* (Fructus Psoraleae) were added. For even more serious cases, the author chose between *Rou Gui* (Cortex Cinnamomi), *Zhi Fu Zi* (Radix Lateralis Praeparatus Aconiti Carmichaeli), and/or *Long Gu* (Os Draconis). If there was spleen vacuity presenting with a sallow yellow, lusterless facial complexion, feeble spirit, emaciation, shortness of breath, laziness to speak, torpid intake, sloppy stools, a tender, pale tongue with white fur, and a fine, vacuous pulse, 5-10 grams of stir-fried *Bai Zhu* (Rhizoma Atractylodis Macrocephalae) and *Fu Ling* (Poria) were added.

The continuous administration of 10 packets of these medicinals equaled one course of treatment.

Study outcomes:

After 1-2 courses of treatment, 28 cases were cured, four cases improved, and one case did not improve. Therefore, the overall improvement rate was 96.97%.

Discussion:

According to Dr. Hou, the cerebrum, urination, and spinal function on the whole have already been established in children more than three years old, and their kidney function also has already basically reached normal adult standards. Therefore, the child is already able control their desire to urinate and urinate at will. However, the child's nervous system function is still not perfectly developed, and the central nervous system excitation and control process is not fully coordinated when fast asleep. Thus, the child does not always have command of their urination during sleep. According to Chinese medicine, the regulation of water fluids in the human body is controlled by the spleen, lungs, kidneys, and triple burner. This is because the qi of the triple burner is transformed and engendered by the kidney qi, spleen yang is the root source of kidney yang, and the bladder's urinary function is also dependent on the kidney's qi transformative function. Therefore, if the child suffers from either a former heaven natural endowment insufficiency with kidney vacuity and debilitation or latter heaven bodily vacuity and weakness, there will be a spleen-lung qi vacuity resulting in the bladder and sphincter muscle's loss of power. In that case, one cannot contain oneself, thus causing enuresis and urinary incontinence.

Based on the preceding theory, within the above formula, *Shan Yao* fortifies the spleen and supplements the lungs and kidneys. *Yi Zhi Ren* warms and supplements the spleen and kidneys and astringes urination. *Wu Yao* warms the kidneys, scatters cold, and stops frequent urination. Therefore, the formula as a whole has the function of supplementing the kidneys, scattering cold and reducing urine. In terms of spleen vacuity loss of restraint, stir-fried *Bai Zhu* and *Fu Ling* increase the functions of strengthening and supplementing the qi as well as fortifying the spleen to promote the astringing of urine. In terms of kidney yang vacuity, medicinals must also be added because children's viscera and bowels are fragile and their body is categorized as young yin and

young yang. Generally, doctors do not use greatly hot or drastically supplementing medicinals. In this case, *Tu Si Zi*, *Yi Zhi Ren*, and *Bu Gu Zhi* are three medicinals that are added to strengthen and supplement kidney yang and boost kidney yin. In a small number of cases of severe kidney yang vacuity debilitation, Dr. Hou recommends the practitioner to use their discretion and also add *Rou Gui* and *Zhi Fu Zi*.

5). From “Clinical Observations on 220 Cases of Enuresis” by Huang Xiang-juan, *Shang Hai Zhong Yi Yao Za Zhi (Shanghai Journal of Chinese Medicine & Medicinals)*, 1991, #11, p. 17

Cohort description:

There were 220 patients enrolled in this study, 132 males and 88 females. There were 190 cases between 1-9 years old, seven cases between 10-19 years old, and 23 cases were more than 20 years old. The course of disease was less than one year in 18 cases, 1-2 years in 76 cases, 3-4 years in 92 cases, and more than five years in 34 cases. The frequency of enuresis ranged from one time per several days in 42 cases, to one time per night in 38 cases, to two or more times per week in 140 cases. One hundred sixteen cases presented a kidney yang vacuity pattern which consisted of a lusterless facial complexion, fatigued essence-spirit, cold limbs, a pale tongue with thin fur, and a fine pulse. Another 55 cases presented a kidney yin vacuity pattern which consisted of a dry mouth, sore throat, dizziness, tinnitus, lumbar soreness, fatigue, an emaciated body, a red tongue with thin fur, and a fine, slightly rapid pulse. Yet another 49 cases presented a pattern of qi and blood vacuity which consisted of a bright facial complexion, shortage of qi, laziness to speak, a pale tongue with thin fur, and a fine pulse.

Treatment method:

Those with kidney yang vacuity were administered a formula composed of:

Shu Di (cooked Radix Rehmanniae), 12g
Shan Yao (Radix Dioscoreae), 12g
Du Zhong (Cortex Eucommiae), 12g
Xu Duan (Radix Dipsaci), 12g

Tu Si Zi (Semen Cuscutae), 12g
Jin Ying Zi (Fructus Rosae Laevigatae), 12g
Shan Zhu Yu (Fructus Corni), 12g
Fu Ling (Poria), 12g
Ze Xie (Rhizoma Alismatis), 12g
Qian Shi (Semen Euryalis), 12g
Suo Quan Wan (Reduce the Stream Pills), 12g

If there was severe lumbar soreness, 12 grams of *Gou Ji* (Rhizoma Cibotii) were added. If there were teeth-marks on the side of the tongue, 12 grams each of mix-fried *Huang Qi* (Radix Astragali) and stir-fried *Dang Shen* (Radix Codonopsitis) were added. If there were severe cold limbs, three grams each of *Gan Jiang* (dry Rhizoma Zingiberis) and *Zhi Fu Zi* (Radix Lateralis Praeparatus Aconiti Carmichaeli) were added. If there was long, clear, copious urination, 12 grams of *Fu Pen Zi* (Fructus Rubi) were added.

Those with kidney yin vacuity were administered:

Sheng Di (uncooked Radix Rehmanniae), 9g
Bai Shao (Radix Paeoniae Albae), 9g
Zhi Mu (Rhizoma Anemarrhenae), 9g
Huang Bai (Cortex Phellodendri), 9g
Lian Xu (Stamen Nelumbinis), 9g
Shan Zhu Yu (Fructus Corni), 12g
 calcined *Long Gu* (Os Draconis), 12g
Mu Li (Concha Ostreae), 12g
Sang Ji Sheng (Herba Taxilli), 18g
Wu Wei Zi (Fructus Schisandrae), 3g
 mix-fried *Gan Cao* (Radix Glycyrrhizae), 3g

If there was severe lumbar soreness, 12 grams of *Du Zhong* (Cortex Eucommiae) and nine grams of *Niu Xi* (Radix Achyranthis Bidentatae) were added.

Those presenting a qi and blood vacuity pattern were given:

mix-fried *Huang Qi* (Radix Astragali), 12g
Dang Shen (Radix Codonopsitis), 12g
Bai Zhu (Rhizoma Atractylodis Macrocephalae), 12g
Dang Gui (Radix Angelicae Sinensis), 12g
Huang Jing (Rhizoma Polygonati), 12g

Bai Shao (Radix Paeoniae Albae), 12g
 calcined *Long Gu* (Os Draconis), 12g
 calcined *Mu Li* (Concha Ostreae), 12g
Wu Wei Zi (Fructus Schisandrae), 3g
 mix-fried *Sheng Ma* (Rhizoma Cimicifugae), 3g
 mix-fried *Gan Cao* (Radix Glycyrrhizae), 3g
Chai Hu (Radix Bupleuri), 6-9g
Can Jian Ke (Coccum Bombycis), 6-9g

For frequent urination, 12 grams each of *Suo Quan Wan* (Reduce the Stream Pills) and *Qian Shi* (Semen Euryalis) were added. For cold limbs, three grams each of *Gan Jiang* (dry Rhizoma Zingiberis) and *Zhi Fu Zi* (Radix Lateralis Praeparatus Aconiti Carmichaeli) were added.

Study outcomes:

One hundred six cases registered marked improvement, 76 cases improved, and 38 cases got no improvement. Therefore, the total amelioration rate was 82.7%. The following table shows the breakdown by pattern.

GROUP	NUMBER	MARKED IMPROVEMENT	IMPROVEMENT	NO IMPROVEMENT
Kidney yang vacuity	116	60	40	16
Kidney yin vacuity	55	25	19	11
Qi and Blood vacuity	49	21	17	11

Empirical formulas

The following abstracts all describe clinical trials on the Chinese medicinal treatment of pediatric enuresis using a formula based on a particular doctor's treatment approach in turn derived from their clinical experience.

1. From "Clinical Observations on the Treatment of Pediatric Enuresis with *Yi Niao Ting* (Enuresis Stopper)" by Yu Jin-mao, *Zhong Yi Za Zhi (Journal of Chinese Medicine)*, 1993, #7, p. 421-422

Cohort description:

All 64 patients in this study suffered from primary enuresis. The oldest patient was 12 years old and the youngest was three years, with an average age of 6.92 years. The patients were divided into two groups, a treatment group (42 cases) and a comparison group (22 cases). Nine cases in the treatment group and 10 cases in the comparison group had a family history of enuresis. Four cases in the treatment group and two cases in the comparison group were diagnosed with occult spina bifida. In terms of severity, mild enuresis was defined as bed-wetting less than two times per week with a scanty amount of urine and easy to awaken. In the treatment group, there were three cases of mild enuresis and no cases in the comparison group. Medium enuresis referred to bed-wetting 1-3 times per week with a moderate amount of urine, and able to awaken after enuresis. In the treatment group, there were five cases of medium enuresis and three cases in the comparison group. Severe enuresis was defined as enuresis more than one time per day with a large amount of urine. The child was difficult to awaken, did not wake when called, and had enuresis during their daytime nap and frequent urination during the day. In the treatment group, there were 34 cases of severe enuresis and 19 cases in the comparison group.

In terms of pattern discrimination in the treatment group, there were 32 cases of lung-spleen qi vacuity who presented with frequent urination that was scanty in amount, a lusterless facial complexion, fatigue, lack of strength, devitalized appetite, thin, sloppy stools, and a deep, forceless pulse. There were six cases who presented with spleen-kidney yang vacuity. This manifested as clear, copious urine, difficulty waking when called, a white facial complexion, devitalized essence-spirit, a cold body and chilled limbs, a pale tongue with thin, white fur, and a deep, moderate or slightly slow, and forceless pulse. There were also four cases with non-interaction of the heart and kidneys. This presented as urination while dreaming as if they were urinating during the day, hyperactivity during the day, possible increase of psycho-emotional tension at night, poor memory, timidity, easy crying, easily frightened, and, if scared before bed, they wet the bed. The course of disease is long, and the pulse is fine, deep and forceless.

Treatment method:

Members of the treatment group were prescribed *Yi Niao Ting* (Enuresis Stopper) which was composed of:

Huang Qi (Radix Astragali)
mix-fried *Ma Huang* (Herba Ephedrae)
Jiu Cai Zi (Semen Alli Tuberosi)
Wu Wei Zi (Fructus Schisandrae)
Sang Piao Xiao (Ootheca Mantidis)
uncooked *Zhi Zi* (Fructus Gardeniae)

These medicinals were ground into powder and then loaded into size "1" capsules. Each pill weighed 0.5 grams. Three to six year-olds took 1.5 grams each time, 7-9 year-olds took two grams each time, and children between 10-12 years old took 2.5 grams each time. All age groups took these medicinals three times per day. If the children had difficulty swallowing the capsules, the contents of the capsules were poured into water and taken. Seven days of this treatment equaled one course of treatment and was continued for 2-4 courses.

Members of the comparison group were administered Ditropan®. The dosage of this medicine was 25 milligrams per kilogram, and this dosage was divided and taken two times per day. The course of treatment was the same as the treatment group.

Note: Ditropan® (oxybutynin chloride) is an antispasmodic, anticholinergic agent used for the treatment of overactive bladder.

Study outcomes:

In the treatment group, 18 cases (42.9%) were cured, while only two cases (9.1%) were cured in the comparison group. In the treatment group, 11 cases (26.2%) experienced marked improvement, but only five cases (22.7%) experienced marked improvement in the comparison group. Five cases (11.9%) improved in the treatment group and four cases (18.2%) improved in the comparison group. Eight cases (19.0%) got no improvement in the treatment group compared to 11 cases (50.0%) in the comparison group. Therefore the total amelioration rate was 81% in the treatment group and 50% in the comparison group. The following table shows

TREATMENT RESULT	TOTAL	PATTERN DISCRIMINATION			SEVERITY		
		Lung-Spleen Qi Vacuity	Spleen-Kidney Yang Vacuity	Heart-Kidney Non-interaction	Mild	Moderate	Severe
CURE	18	16	1	1	1	2	15
MARKED IMPROVEMENT	11	6	4	1	2	2	7
IMPROVEMENT	5	4	1	0	0	0	5
NO IMPROVEMENT	8	6	0	2	0	1	7
TOTAL	42	32	6	4	3	5	34

the treatment group results in relationship to pattern discrimination and severity of enuresis.

Discussion:

Professor Yu Jin-mao, a teacher of mine in Hangzhou, explains that many children who suffer from enuresis are also deep sleepers. Because the “heart governs the spirit brilliance,” many doctors add *Shi Chang Pu* (Rhizoma Acori Tatarinowii) and *Yuan Zhi* (Radix Polygalae) to their enuresis formulas to open the orifices and arouse the spirit. Dr. Yu says these medicinals are not very effective and prefers to use *Ma Huang*. Professor Yu uses *Ma Huang* in his enuresis formula because his very famous pediatric teacher, Wang Bo-yu, also used this medicine. Dr. Wang was referred to as the “King of Children” in Beijing due to his renowned ability to heal children of various ailments. *Ma Huang* enters the lung and bladder channels, and its flavor and nature are acrid and warm. The function of *Ma Huang* is to free the flow of yang and transform the qi, diffuse and depurate the lung qi and regulate the waterways. However, a side effect of using too much *Ma Huang* in clinical practice is that it arouses the brain and causes insomnia. For this reason, this medicinal is added to the formula to arouse the brain and, therefore, treats the tip or branch of enuresis.

Huang Qi, on the other hand, addresses the root of this condition by supplementing the qi and upbearing the clear. This medicinal also strengthens the constitution of the individual by strengthening their ability to resist disease. *Jiu Cai Zi*, *Tu Si Zi*, *Wu Wei Zi* and *Sang Piao Xiao* are used to warm the kidneys, reduce the stream, and restore the kidneys’ function of governing opening and closing. It is also said, “Children easily become vacuous and easily become replete.” Thus, Dr. Yu adds a small amount of herbs to clear heat and disinhibit dampness. In this study, he uses *Zhi Zi* to accomplish this function. With the addition of these medicinals, the formula is able to warm without drying, secure without obstructing, and simultaneously constrict and scatter and warm and clear.

Professor Yu also points out that 30% of enuresis sufferers have a history of recurrent upper respiratory tract infections and simultaneously develop asthma. In clinical practice, he observes that, when the enuresis is cured, these individuals also experience an obvious reduction in respiratory tract infections.

During treatment there were no side effects in the treatment group who took the Chinese herbal medicine. In the comparison group who took Western pharmaceuticals, one case developed hives and three cases had facial flushing as if they had been drinking. All these side effects disappeared after discontinuing the medication. These four cases represented 18.2% of the patients treated in the comparison group. Other common side effects, such as dry mouth and difficulty urinating, were not noted in this study.

The patients in the treatment group took *Yi Niao Ting* between 7-28 days. Typically, there was an obvious improvement in the patient's condition after only three days, and the very slowest response was two weeks. If the patient did not improve after two weeks, they were considered difficult to treat.

Dr. Yu believes that the way a child is toilet trained influences the rate of enuresis. He believes that these rates are higher in the West compared to China where only 5-6% of six year-olds have enuresis because we use diapers. He believes the main TCM patterns of enuresis are kidney vacuity and lung-spleen vacuity. Other factors to consider are heart heat, deep sleep, and damp heat. He also said that, if there was occult spina bifida, this related to the governing vessel in TCM and medicinals must be added to the formula which specifically enter this vessel.

In summary, Professor Yu's treatment of enuresis is based on five principles:

1. Warm the kidneys with *Sang Piao Xiao* (Ootheca Mantidis), *Wu Wei Zi* (Fructus Schisandrae), *Jiu Cai Zi* (Bulbus Allii Fistulosi), *Tu Si Zi* (Semen Cuscutae), and *Bu Gu Zhi* (Fructus Psoralea).
2. Supplement the lungs and spleen with *Huang Qi* (Radix Astragali) and *Dang Shen* (Radix Codonopsis).
3. Strengthen the *du mai* by adding either 20 grams of *Lu Jiao Shuang* (Cornu Degelatinum Cervi), 10 grams of *Lu Jiao* (Cornu Cervi), six grams of *Lu Jiao Jiao* (Gelatinum Cornu Cervi), or 0.1 grams of *Lu Rong* (Cornu Parvum Cervi). Other medicinals which enter and strengthen the governing vessel include *Du*

Zhong (Cortex Eucommiae), *Gou Ji* (Rhizoma Cibotii), *Xiang Ling Pi* (Herba Epimedii), *Ba Ji Tian* (Radix Morindae Officinalis), and *Suo Yang* (Herba Cynomorii).

4. Arouse the brain with 4-6 grams each of mix-fried *Ma Huang* (Herba Ephedrae) and *Shi Chang Pu* (Rhizoma Acori Tatarinowii).

5. Prevent side effects from the use of warm medicinals by using cool- or cold-natured medicinals, such as *Huang Qin* (Radix Scutellariae), *Dan Pi* (Cortex Moutan), and/or *Zhi Zi* (Fructus Gardeniae). However, if there was obvious vacuity cold then it is not necessary to add these medicinals.

2. From “Using *Lu Qi Zhi Yi Tang* (Deer Horn & Astragalus Stop Night [Urination] Decoction) to Treat 38 Cases of Pediatric Enuresis” by Huang Wu-guang, *Guang Xi Zhong Yi Yao* (Guangxi Chinese Medicine & Medicinals), 1993, #5, p. 22

Cohort description:

Of the 38 cases included in this study, 18 cases were male and 20 cases were female. Eighteen of these cases were 2-3 years old, 12 were 6-10 years old, and eight were 11-14 years old. The course of disease in these children was as short as one half year and as long as six years. Nocturnal enuresis ranged from scanty (*i.e.*, 1-2 times per night) to profuse (*i.e.*, more than two times per night). In most cases, this enuresis was accompanied by lassitude of essence spirit, emaciation, a bright white facial complexion, fatigue, lack of strength, a cold body and chilled limbs, torpid intake, a pale tongue with white fur, and a moderate (*i.e.*, slightly slow), possibly a deep, fine, forceless pulse.

Treatment method:

The author's self-devised *Lu Qi Zhi Yi Tang* (Deer Horn & Astragalus Stop Night-time [Urination] Decoction) was composed of:

Lu Jiao Shuang (Cornu Degelatinum Cervi), 3-5g
(administered after mixing with the other decocted medicinals)
Huang Qi (Radix Astragali), 10-15g

Wu Wei Zi (Fructus Schisandrae), 6-10g

Chai Hu (Radix Bupleuri), 6-10g

If there was profuse bed-wetting, 6-10 grams of *Ba Ji Tian* (Radix Morindae Officinalis) were added. If there was torpid intake, 10-15 grams of *Ji Nei Jin* (Endothelium Corneum Gigeriae Galli) were added. If there were sloppy stools, 10-15 grams of *Cang Zhu* (Rhizoma Atractylodis) were added. One packet of these medicinals were decocted in water and administered per day in two divided doses, and five days equaled one course of treatment.

Study outcomes:

All 38 cases were cured using the above treatment method. Of these, 25 were cured with one course of treatment, and 13 were cured after two courses of treatment.

Discussion:

Within the above formula, *Lu Jiao Shuang's* flavor is salty and its nature is warm. It enters the kidneys and warms yang. *Huang Qi* grasps or absorbs the yang qi. *Chai Hu* scatters and upbears. It regulates the qi mechanism. *Wu Wei Zi* contrains the upper lung qi and secures and astringes the lower origin, boosts the qi and settles the spirit. When all these medicinals are used together, they warm the kidneys, diffuse the lungs, upbear the spleen, settle the heart, and supplement the kidneys in order to promote the bladder's function and to regulate the qi mechanism of the whole body. The doctor states that, when these objectives are achieved, the enuresis is cured.

3. From "Clinical Observations on the Treatment of 25 Cases of Enuresis with *Suo Niao San* (Reduce Urination Powder)" by Wang Xiao-yan & Wang Bao-liang, *He Nan Zhong Yi Yao Xue Kan* (Henan Chinese Medicine & Medicinals Academic Periodical), 1996, #1, p. 42

Cohort description:

Of the 25 cases enrolled in this study, 18 were male and seven were female. Nineteen cases were between 3-10 years old and six cases were more than 10 years old. The course of disease was as short as one year and as long as 10. Seven cases (28%)

had a family history of enuresis. Twelve cases urinated every night, and the remaining 13 cases had enuresis 1-3 times every week. Eighteen cases had no accompanying symptoms. Five cases had lack of strength and profuse sweating. Two cases had dizziness and low backache. Twelve cases had a fine, deep pulse. In the remaining cases, there were no obvious abnormalities in the pulse. X-rays of the lumbosacral area showed five cases of spina bifida.

Treatment method:

The formula used in this study was composed of the following medicinals:

Huang Qi (Radix Astragali), 150g
Sang Piao Xiao (Ootheca Mantidis), 150g
uncooked *Mu Li* (Concha Ostreae), 150g
Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 150g
Shan Yao (Radix Dioscoreae), 150g
Rou Gui (Cortex Cinnamomi), 50g

These medicinals were ground into a fine powder, mixed together, and then divided into 30 packets. Children who were 3-6 years old took one packet before sleep each night after infusing it in water. The 7-10 year olds took 1.5 packets each night, and children over 10 years old took two packets each day. One month equaled one course of treatment.

Study outcomes:

Of the 25 cases, 14 cases were cured, eight cases improved, and three cases did not improve. Therefore, the overall amelioration effect was 84%. Eight cases took the above medicinals for one course of treatment, 14 cases took them for two courses of treatment, and three cases took them for three courses of treatment.

Discussion:

According to the Chinese authors of this study, the viscera responsible for enuresis are the lungs, spleen, and kidneys. Enuresis is often due to vacuity detriment, especially that of the kidneys. Most Chinese medical practitioners realize that enuresis patients are often vacuous and propose that the basic guiding

treatment principle is to supplement this vacuity. However, Drs. Wang and Wang simultaneously use three methods to treat enuresis: boost the qi, supplement the kidneys, and secure and astringe. Within their formula, *Sang Piao Xiao* and *Yi Zhi Ren* supplement the kidneys, assist yang, and reduce urination. *Rou Gui* warms the center and supplements yang. *Huang Qi* boosts the qi and fortifies the spleen. *Shan Yao* supplements the spleen and stomach and boosts the liver and kidneys. Uncooked *Mu Li* promotes contraction and secures and astringes. Therefore, when all these medicinals are used together, the lungs and spleen become exuberant, the kidneys become full and replete, water fluids are contained, and the goal of stopping enuresis is achieved.

Five cases (20%) included in this study had spina bifida. Since the kidneys govern the bones, spina bifida is believed to be a manifestation of kidney vacuity in Chinese medicine. Likewise, many Chinese believe that enuresis is mainly due to kidney vacuity. In any case, it should be noted that all five cases of pediatric enuresis in this study who had spina bifida were cured by using *Suo Niao San* (Reduce Urination Powder).

4. From "The Use of Self-Devised *Zhi Yi Fang* (Stop Enuresis Formula) for the Treatment of 42 Cases of Pediatric Enuresis"

by Chen Jian-zhong & Chen Hai-sheng, *Gui Yang Zhong Yi Xue Yuan Xue Bao* (Guiyang College of Chinese Medicine Academic Journal), 1998, #1, p. 4

Cohort description:

There were 22 males and 20 females enrolled in this study who ranged in age from 5-12 years old. The average age was 6? years old. The course of disease was as short as three months and as long as seven years. All cases had an x-ray or a CT scan examination, and 10 cases had spina bifida in the lumbrosacral area.

Treatment method:

The prescription *Zhi Yi Fang* (Stop Enuresis Formula) was composed of:

Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 9g
Fu Pen Zi (Fructus Rubi), 9g

Sang Piao Xiao (Ootheca Mantidis), 12g
Wu Yao (Radix Linderae), 9g
Dang Shen (Radix Codonopsitis), 9g
Fu Ling (Poria), 15g
Shi Chang Pu (Rhizoma Acori Tatarinowii), 6g
Yuan Zhi (Radix Polygalae), 6g
uncooked *Long Gu* (Os Draconis), 15g

One packet of these medicinals was decocted in water two times, the decoction was then divided into two doses, and these two doses were administered once in the morning and once at night.

If there was qi and blood vacuity weakness with profuse sweating, a bright white or sallow yellow facial complexion, and the essence spirit was less than normal, 12 grams of *Huang Qi* (Radix Astragali) and nine grams of *Dang Gui* (Radix Angelicae Sinensis) were added.

If there was poor appetite, six grams each of *Shen Qu* (Massa Medica Fermentata), *Mai Ya* (Fructus Germinata Hordei), and *Ji Nei Jin* (Endothelium Corneum Gigeriae Galli) were added.

Ten days equaled one course of treatment, and, in general, the medicinals were given for three courses of treatment.

Study outcomes:

Twenty-six cases (61.9%) markedly improved, 10 cases (23.9%) got some improvement, and six cases (14.3%) got no improvement. Of the 10 cases with spina bifida, four cases markedly improved, three cases got some improvement, and three cases got no improvement.

Discussion:

The authors say that those who have studied Chinese medicine recognize that this disease is because of kidney qi insufficiency, non-interaction of the heart and kidneys, and failure of the bladder's power of retention. Among these three mechanisms, kidney qi insufficiency is the main aspect of enuresis's pathology. Therefore, within the above formula, *Yi Zhi Ren*, *Fu Pen Zi*, and

Sang Piao Xiao supplement the kidneys and reduce urination. *Wu Yao* warms the kidneys to assist the bladder in qi transformation. *Dang Shen* and *Fu Ling* boost the heart qi, while *Shi Chang Pu* and *Yuan Zhi* open the heart orifices and promote the interaction of the heart and kidneys. Uncooked *Long Gu* quiets the spirit and secures and astringes. When all these medicinals are used together, they supplement the kidneys, boost the heart, promote the interaction of the heart and kidneys, reduce urination, and stop enuresis. Similar to the above protocol, this protocol also was able to achieve success in those with spina bifida.

5. From "The Treatment of 33 Cases of Pediatric Enuresis with *Yi Zhi Ren Zhu Pao Tang* (Alpina & Pork Bladder Decoction)"

by Pei Wei-hua, *Guang Xi Zhong Yi Yao* (Guangxi Chinese Medicine & Medicinals), 1999, #4, p. 36

Cohort description:

There were 33 patients, 18 males and 15 females, included in this clinical trial. Twenty-two of these were 3-9 years old, nine were 10-16 years old, and two were 17-19 years old. The average course of the disease was two years, but it ranged from 0.5-11 years. Twenty-eight cases had enuresis every night, and five cases had enuresis 3-5 times per week. The patients presented clinically with dizziness, fatigued spirit, lack of strength, low back and knee soreness and limpness, a cold body and chilled limbs, a white, lusterless facial complexion, torpid intake, a pale tongue with white fur, and a deep, fine, weak pulse. Therefore, these patients' patterns were categorized as spleen-kidney yang vacuity and lung-spleen qi vacuity.

Treatment method:

Based on the principles of fortifying the spleen and boosting the lungs, supplementing the kidneys, invigorating yang, and securing and containing the lower origin, *Yi Zhi Ren Zhu Pao Tang* (Alpinia & Pork Bladder Decoction) was composed of:

Zhu Pao (pork bladder), 30-50g

Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 3-10g

Sang Piao Xiao (Ootheca Mantidis), 3-10g

Bu Gu Zhi (Fructus Psoraleae), 5-10g

Jin Ying Zi (Fructus Rosae Laevigatae), 5-10g

Tu Si Zi (Semen Cuscutae), 3-10g

Dang Shen (Radix Codonopsis), 10-15g

Da Zao (Fructus Jujubae), 10-15g

Shan Yao (Radix Dioscoreae), 10-20g

Wu Wei Zi (Fructus Schisandrae), 3-5g

Nuo Mi (Semen Oryzae Glutinosae), 30-50g

If there was torpid intake, 5-10 grams of *Shen Qu* (Massa Medica Fermentata) were added. If there were sloppy stools, 5-10 grams of stir-fried *Bai Zhu* (Rhizoma Atractylodis Macrocephalae) were added.

The dosage was 60 milliliters of the decocted liquid two times per day for 3-10 year-olds, and 100 milliliters two times per day for 11-19 year-olds. All ages ate the cooked pork bladder and rice after drinking the decoction. One packet of the above medicinals was decocted per day, and five days equaled one course of treatment. Three days rest was allowed between each successive course of treatment. If there was no results, then the treatment was continued for a second course of treatment.

Study outcomes:

Among these 33 cases, 29 cases were cured, three cases improved, and only one case got no improvement. Therefore, the total amelioration rate was 96.67%, and the average length of treatment was eight days. The shortest length of treatment was five days and the longest was 10 days.

Discussion:

Within the above formula, the pork bladder has a “meaty” quality. It strengthens the transformation of the former heaven essence, supplements the qi, and upbears while guiding the other medicinals in the formula to the appropriate channel. *Dang Shen*, *Shan Yao*, and *Nuo Mi* fortify the spleen and boost the lungs. *Wu Wei Zi* constrains the lung qi, boosts the qi, and quiets the spirit. *Yi Zhi Ren* and *Tu Si Zi* warm the kidneys and invigorate yang. They also warm and transform cold qi in the lower warmer. *Bu Gu Zhi*, *Sang Piao Xiao*, and *Jin Ying Zi* supplement kidney yang, secure the essence, and reduce urination. When all these medicinals are used together, the kidney yang is warmed, the lung qi is diffused,

the spleen qi is upborne, and the heart spirit is quieted. In addition, the kidney qi is sufficient and the bladder can restrain. Thus the body's qi mechanism is regulated and enuresis is cured.

6. From "A Brief Summary of the Treatment of 44 Cases of Pediatric Enuresis with *Fang Fu Shen Tang* (Saposhnikovia Plus Codonopsis Decoction)" by Xu Guo-shi, *Chang Chun Zhong Yi Xue Yuan Xue Bao (Academic Journal of Changchun College of Chinese Medicine)*, 2000, #16, p. 37

Cohort description:

Of 44 cases included in this clinical trial, the oldest was 12 years old and the youngest was five. The course of disease varied from three months to one year. Thirty-four cases had enuresis more than one time per evening, five cases urinated one time every 2-3 days, and, in four cases, there was no regular pattern. All the children had enuresis between 1-3 A.M.

Treatment method:

Self-devised *Fang Fu Shen Tang* (Saposhnikovia Plus Codonopsis Decoction) consisted of:

Fang Feng (Radix Saposhnikoviae), 6g
Dang Shen (Radix Codonopsitis), 10-15g
Ji Nei Jin (Endothelium Corneum Gigeriae Galli), 10g
Mai Ya (Fructus Germinatus Hordei), 10g
Chan Tui (Periostracum Cicadae), 5 pieces
Jiang Can (Bombyx Batryticatus), 5-8g
Shen Qu (Massa Medica Fermentata), 12g
Sheng Ma (Rhizoma Cimicifugae), 3g
Chai Hu (Radix Bupleuri), 3g
Lian Xu (Stamen Nelumbinis), 3g
Cong Bai (Bulbus Allii Fistulosi), 3g
Niao Zhi Hui (ashed urine paper), 1g (dissolved after decoction)

Niao Zhi Hui was prepared by laying a piece of bamboo paper under the child while they slept. When the paper was soaked with urine, it was dried in the sun. After the paper was dried, it was burnt in a bowl. It was then covered until the heat receded, collected, and stored for future use.

If there was spleen-lung qi vacuity, *Gao Li Shen* (Korean Radix Ginseng) and *Huang Qi* (Radix Astragali) were added. If there was lower origin vacuity cold, one gram of *Rou Gui* (Radix Cinnamomi) was added.

Each day, one packet of the above medicinals were boiled for 30 minutes in 350 milliliters of water until 250 milliliters of medicinal liquid was obtained. This was divided into two doses which were administered before eating at noon and in the evening. Ten days equaled one course of treatment.

Study outcomes:

Thirty-two cases were cured and 12 cases improved. Therefore, the overall amelioration rate was 100%. The treatment lasted as long as 20 days and as short as 10 days.

Discussion:

Although enuresis is often caused by lower origin vacuity cold, Dr. Xu believes spleen-stomach vacuity weakness to be the root of this disease. If the spleen and stomach are vacuous and weak, there will be insufficient engenderment of the qi and blood. If there is a qi vacuity, the kidneys and bladder cannot perform their functions of warming, qi transformation, and securing and constraining. If there is qi vacuity, this will also affect the middle burner's qi mechanism of upbearing and downbearing. Hence, there will be nonregulation of the water fluids. On the other hand, if there is blood vacuity, then the residence of the heart spirit is not nourished and moistened. If the spirit is not quiet at night, then the child cannot contain their urine. Therefore, this self-devised formula supplements the spleen and fortifies the stomach, quiets the spirit and secures and contains.

7. From "*Xuan Fei Wen Shen Tang* (Diffuse the Lungs & Warm the Kidneys Decoction) in the Treatment of 38 Cases of Pediatric Enuresis" by He Jian-hua & Zhang Ping, *Chang Chun Zhong Yi Xue Yuan Xue Bao* (Academic Journal of Changchun College of Chinese Medicine), 2000, #1, p. 39

Cohort description:

There were 38 cases included in this clinical trial, 20 males and 18

females. These patients were between 3-14 years old, and the course of disease ranged from two months to 10 years. All these patients categorized as presenting a pattern of kidney qi depletion and vacuity with non-diffusion and downbearing of lung qi.

Treatment method:

Xuan Fei Wen Shen Tang (Diffuse the Lungs & Warm the Kidneys Decoction) was composed of:

Bu Gu Zhi (Fructus Psoraleae), 10g
Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 10g
Jin Ying Zi (Fructus Rosae Laevigatae), 10g
Fang Feng (Radix Saposhnikoviae), 10g
Gao Ben (Rhizoma Ligustici), 10g
Shi Chang Pu (Rhizoma Acori Tatarinowii), 10g
Fu Ping Zi (Herba Spirodela), 10g
Gan Cao (Radix Glycyrrhizae), 6g

One packet of these medicinals was decocted in water and administered per day. The above doses were reduced for children under four years old. Seven days equaled one course of treatment, and treatment was limited to four courses.

Study outcomes:

Among these 38 cases, 35 (92.1%) cases were cured, two (5.3%) improved, and one (2.6%) did not improve. Thus, the overall effectiveness rate was 97.4%.

Discussion:

Within the above formula, *Bu Gu Zhi* and *Yi Zhi Ren* both supplement the spleen. However, these two medicinals are commonly used to supplement the kidneys and invigorate yang, warm the spleen and reduce urination. *Jin Ying Zi* promotes contraction and stems desertion. It also has the function of securing and containing the lower origin. *Fang Feng* and *Gao Ben* are added to strengthen the warming function. These two medicinals enter the lungs and bladder and have a markedly strong effect on diffusing the lungs, dissipating cold, eliminating wind, and overcoming dampness. *Fu Ping Zi* also promotes diffusion and effusion of the lung qi which then regulates the waterways. This medicinal is a

warm medicinal and is well suited to balance cold and heat. Although it is warm, it is not too drying. *Shi Chang Pu* is used to aromatically transform dampness, open the orifices, and arouse the spirit. When all these medicinals are used together, they warm the kidneys, secure and constrain, and also warm the bladder; they also promote the diffusion and effusion of the lung qi while not neglecting to pay attention to cold and warmth. If the case is stubborn, Drs. He and Zhang say one can add *Ma Huang* (Herba Ephedrae) in order to increase the strength of the diffusion, effusion, and warming functions, increase the bladder's function of qi transformation, and increase the function of the sphincter muscles.

8. From "Observations on the Results of Treating 50 Cases of Pediatric Enuresis with *Yi Niao Ling Fang* (Effective Enuresis Formula)" by Xi Yu-lian, Lu Xiao-yun & Da Chun-hua, *Xin Zhong Yi (New Chinese Medicine)*, 2002, #12, p. 27-28

Cohort description:

The 96 cases in this study were divided into two groups, a treatment group and a comparison group. The treatment group included 50 cases, 38 males and 12 females. These cases were between the ages of 5-12 years old, with a median age of 7.32 ± 1.12 years old. The course of disease was two months to six years long, with a median duration of 1.95 ± 0.41 years. In this group, the patients had enuresis 1-3 times per night, with a median occurrence of 1.28 ± 0.21 episodes per night.

The comparison group included 46 cases, 35 males and 11 females. These cases were between the ages of 6-13 years old, with a median age of 7.18 ± 1.09 years old. The course of disease was seven weeks to seven years long, with a median duration of 1.95 ± 0.41 years. In this group, the patients had enuresis 1-4 times per night, with a median occurrence of 1.36 ± 0.29 episodes per night. Therefore, there was no significant difference between the two groups prior to treatment.

Treatment method:

The treatment group was administered *Yi Niao Ling Fang* (Effective Enuresis Formula) which was composed of:

fresh *Bai Guo* (Semen Ginkgonis), 10g
Mu Li (Concha Ostreae), 10g
Sang Ji Sheng (Herba Taxilli), 10g
Sang Piao Xiao (Ootheca Mantidis), 10g
Wu Bei Zi (Galla Rhois), 10g
Wu Wei Zi (Fructus Schisandrae), 10g
Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 10g
Shan Zhu Yu (Fructus Corni), 10g
Shu Di (cooked Radix Rehmanniae), 10g
Suan Zao Ren (Semen Zizyphi Spinosae), 10g
Shan Yao (Radix Dioscoreae), 8g
Jiu Cai Zi (Semen Alli Tuberosi), 8g

If there was encumbered sleep and inability to wake, *Ban Xia* (Rhizoma Pinelliae Ternatae) and *Shi Chang Pu* (Rhizoma Acori Tatarinowii) were added.

If there was poor appetite and sloppy stools, *Dang Shen* (Radix Codonopsis), *Fu Ling* (Poria), and *Bai Zhu* (Rhizoma Atractylodis Macrocephalae) were added.

If the disease was enduring and there was low-grade fever, frequent urination, a red tongue with scanty fur, the above formula was used in combination with *Zhi Bai Di Huang Wan* (Anemarrhena & Phellodendron Rehmannia Pills).

These medicinals were decocted and divided in two doses per day. Eight days equaled one course of treatment.

Comparison group: 12.5-25 milligrams of imipramine hydrochloride were taken once every evening one hour before bed. Eight days equaled one course of treatment.

Study outcomes:

GROUP	CURED	IMPROVED	No IMPROVEMENT	TOTAL EFFECTIVENESS
Treatment	42(84%)	7(14%)	1(2%)	98%
Comparison	22(47.83%)	12(26.09%)	12(26.09%)	(73.91%)

In those cases that were cured, the course of treatment in the treatment group was 4-21 days, with a median of 9.24 ± 1.21 days, and the course of treatment of the comparison group was 10-32 days, with a median of 18.35 ± 1.29 days. Four cases in the comparison group had side effects of dizziness and dry mouth that disappeared with a decrease in dosage.

Discussion:

Within the above Chinese medicinal formula, *Shan Zhu Yu* and *Shu Di Huang* supplement the kidneys and secure the root. *Wu Bei Zi*, *Wu Wei Zi*, and *Shan Zhu Yu* are sour and constrain, secure, and astringe. *Yi Zhi Ren*, *Shan Yao*, and *Mu Li* treat lung-spleen vacuity. *Sang Ji Sheng* and *Sang Piao Xiao* supplement the kidneys, secure the essence, and reduce urination. *Jiu Cai Zi* is acrid and warm, homes to the kidneys and warms the bladder. The flavor of fresh *Bai Guo* is particularly excellent at treating this disease. Its qualities are sweet, bitter, and astringent. This medicinal is excellent for treatment to constrain the lungs and calm panting and is also taken to constrain, astringe, and reduce urination. The *Ben Cao Gang Mu (Detailed Outline of Materia Medica)* says this medicinal can “reduce urination and stop white turbidity.” In general, by looking at this whole formula, you may see there are cold and warm ingredients mutually existing. This formula overall is warm but not drying and uses many ingredients that are sour, astringent, and neutral that effect the three main viscera involved in enuresis—the lungs, spleen, and kidneys.

9. From “The Treatment of 30 Cases of Pediatric Enuresis with *Yi Qi Suo Niao Yin* (Boost the Qi & Reduce Urine Beverage)”
by Zhao Ling, *Si Chuan Zhong Yi (Sichuan Chinese Medicine)*,
2002, #8, p. 59-60

Cohort description:

Thirty cases of pediatric enuresis were treated using the method described below; 18 of these were male and 12 were female. The youngest child was three years old and the oldest was 17 years old. The course of the disease was as short as 30 days and as long as 12 years. In 10 cases, the child would have enuresis 2-3 times a night, in 15 cases, they would urinate one time per night, and five cases had intermittent enuresis.

Treatment method:

Yi Qi Suo Niao Yin (Boost the Qi & Reduce Urine Beverage) was composed of:

Huang Qi (Radix Astragali)
Dang Shen (Radix Codonopsis)
Chai Hu (Radix Bupleuri)
Sheng Ma (Rhizoma Cimicifugae)
 stir-fried *Zhi Ke* (Fructus Aurantii)
Wu Mei (Fructus Pruni Mume)
Yu Jin (Tuber Curcumae)
Shi Chang Pu (Rhizoma Acori Tatarinowii)
Yuan Zhi (Radix Polygalae)
Sang Piao Xiao (Ootheca Mantidis)
Shan Yao (Radix Dioscoreae)
Tu Si Zi (Semen Cuscutae)
Fu Pen Zi (Fructus Rubi)
Wu Yao (Radix Linderae)
Jin Nei Jin (Endothelium Corneum Gigeriae Galli)

The dosage was determined based on the age of the child. Three to 15 grams of each medicinal were prescribed and one packet was administered each day. One packet was soaked in 30 Chinese teacups of cold water, decocted, and boiled three times. After decocting three times, the resulting medicinal liquid was mixed together and divided into three doses for each day. Seven days equaled one course of treatment. Simultaneously, the parents or guardian of the child were told to pay attention to limiting the amount of water the child drank each evening before bed. To support and achieve better results, the parents or guardians were encouraged to remind the child to urinate before sleep each night. Scheduling a time to wake up and urinate each night also increased the curative effect of the medicinals. Counseling was given to anyone whose course of disease was more than one year. This counseling was used in order to overcome the disease by establishing confidence in the treatment and to eliminate any feelings of pessimism.

For lassitude of the spirit and lack of strength, reduced food intake and sloppy stools, 10 grams of processed *Huang Qi* (Radix Astragali Membranacei), three grams of *Sha Ren* (Fructus

Amomi), and five grams of *Bai Zhu* (Rhizoma Atractylodis Macrocephalae) were added. For a vacuous body and/or profuse sweating, 10 grams each of calcined *Long Gu* (Os Draconis), *Mu Li* (Conchae Ostreae), and *Tai Zi Shen* (Radix Pseudostellariae) were added. For a bright white facial complexion, fear of cold, and chilled limbs, 10 grams of *Bu Gu Zhi* (Fructus Psoraleae) were added.

Study outcomes:

In 15 cases, symptoms disappeared after one course of treatment, and in 10 cases, the symptoms disappeared after two courses of treatment. An obvious decrease in frequency of enuresis was observed in five cases. Follow-up visits after one year showed no recurrence in 20 cases.

Discussion:

This formula was created by the Chinese author's teacher, Lu Chang-qing. It treats the heart, spleen, kidneys, bladder, and small intestine. Within it, *Huang Qi*, *Dang Shen*, *Chai Hu*, and *Sheng Ma* supplement and boost the middle qi by uplifting and descending. By re-establishing the upbearing and downbearing, shifting and transporting mechanism, the bladder's qi is able to recover its ability to transform and retain. Stir-fried *Zhi Ke* and *Wu Mei* have a retaining function which affects the bladder and the sphincter. These medicinals combined together with *Huang Qi* and *Dang Shen* achieve the function of boosting the qi and securing and containing. *Sang Piao Xiao*, *Shan Yao*, *Tu Si Zi*, *Fu Pen Zi*, and *Wu Yao* boost the kidneys' securing and containing and reduce urination. According to Dr. Zhao, when there is insufficiency of kidney yang, the heart yang is not aroused. This then results in an extremely deep sleep and spontaneous urination. The following medicinals are used in order to open the heart orifices, diffuse the qi, dispel phlegm, arouse the brain, and clear the spirit: *Yu Jin*, *Shi Chang Pu*, and *Yuan Zhi*. *Jin Nei Jin* reduces and stops urination and fortifies the spleen. Qi transformation is returned to normal when the spleen qi is strong and fortified, the kidney essence is sufficient, and the office of water is controlled. If the qi transformation is normal, then the bladder has the ability to retain water and correctly estimate the amount of opening and closing. Hence enuresis is stopped.

10. From “Observations on the Therapeutic Results of Treating 50 Cases of Pediatric Enuresis with the Method of Regulating Both the Lungs & Kidneys” by Wu Min & Gu Meiqin, *Shang Hai Zhong Yi Yao Za Zhi (Shanghai Journal of Chinese Medicine & Medicinals)*, 1998, Journal #312, p. 23

Cohort description:

There were altogether 125 patients in this study, 74 males and 51 females. These patients ranged in age from 3-14 years old. The course of the disease was as short as two months and as long as 12 years. The majority of those in the study had enuresis since they were young, but 17 cases developed their enuresis after five years of age. The enuresis was less than three times per day in 78 cases and more than three times in 47 cases. Twenty-one cases had a history of enuresis in their family. Seventy-two cases had an x-ray of the lumbosacral area, and 18 of these cases presented with occult spina bifida. The patients in the study were divided into three groups: a regulating both the lungs and kidneys group (50 cases), a laser acupuncture group (45 cases), and a *Suo Quan Wan* (Reduce the Stream Pills) group (30 cases). In regards to clinical data, there were no significant statistical differences between these three groups.

Treatment method:

Members of the regulating the lungs and kidneys group all received the following Chinese medicinals:

mix-fried *Ma Huang* (Herba Ephedrae), 5g
Fu Ping Zi (Herba Spirodelae), 10g
Gao Ben (Rhizoma Ligustici), 10g
Shi Chang Pu (Rhizoma Acori Tatarinowii), 10g
Bu Gu Zhi (Fructus Psoraleae), 10g
Jin Ying Zi (Fructus Rosae Laevigatae), 10g
Can Jian (Bombyx Batryticatus), 10 pieces
mix-fried *Gan Cao* (Radix Glycyrrhizae), 5g

If there were signs and symptoms of damp heat, 10 grams each of *Zhi Mu* (Rhizoma Anemarrhenae) and *Huang Bai* (Cortex Phellodendri) were added. One packet of these medicinals was decocted in water and administered in two divided doses per day.

This was continued for three months.

Members of the laser acupuncture group received laser stimulation at the following acupoints:

Guan Yuan (CV 4)
Zhong Ji (CV 3)

Each treatment lasted for 10 minutes, and one treatment was given every other day. Ten treatments equaled one course of treatment.

Members of the *Suo Quan Wan* (Reduce the Stream Pills) were administered 3-6 grams three times per day of these pills. This was continued for three months.

Study outcomes:

The following table shows the comparison of outcomes in the three groups.

GROUP	CURED	IMPROVED	NO IMPROVEMENT	TOTAL EFFECTIVENESS
Reg. Lung & Kidney	33	14	3	94%
Laser Acu.	19	21	5	88.9%
<i>Suo Quan Wan</i>	4	13	13	56.7%

Discussion:

According to Drs. Wu and Gu, *Ma Huang*, *Gao Ben* and *Fu Ping* all enter the lung and bladder channels. They diffuse and free the flow of the lung qi and free the flow and regulate the waterways. *Shi Chang Pu* and *Ma Huang* are combined to arouse the spirit and open the orifices. *Bu Gu Zhi* and *Can Jian* supplement the kidneys and invigorate yang. Thus they stimulate the bladder's qi mechanism. They are assisted by *Fu Pen Zi*'s sour, astringent nature to constrain the urine and stop enuresis.

11. From "The Treatment of 30 Cases of Pediatric Enuresis with *She Quan Tang* (Contain the Stream Decoction)" by Song Tingbin & Song Qing, *Gansu Zhong Yi Xue Yuan Xue Bao (Academic Journal of the Gansu College of Chinese Medicine)*, 1994, #3, p. 35-36

Cohort description:

Of the 30 patients enrolled in this trial, 22 were males and eight were females. All were between the ages of 3-14 years old. Nine cases were between 3-6, 16 cases were between 7-10, and five cases were between 11-14 years old. The course of disease ranged from one month to six years. All patients in this group had nocturnal enuresis that increased on exposure to cold and when fatigued. The main symptom was accompanied by lack of strength of the four limbs, fatigue, spontaneous perspiration, and torpid intake. Five cases had frequent urination at a rate of once every 5-10 minutes.

Treatment method:

Based on the principles of fortifying the spleen and securing the kidneys, warming and supplementing the life-gate, containing the spring and reducing urination, all members of this study received the following Chinese medicinals:

Huang Qi (Radix Astragali), 40g
Dang Shen (Radix Codonopsitis), 20g
Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 10g
Fu Pen Zi (Fructus Rubi), 10g
Sang Piao Xiao (Ootheca Mantidis), 10g

One packet of these medicinals was decocted in water and administered per day.

Study outcomes:

Cure was defined as disappearance of both enuresis and frequent urination as well as all accompanying signs and symptoms. In addition, the child had a normal spirit and their appetite increased. Based on this definition, all but one patient were judged cured. The longest course of treatment was nine days and the shortest length of treatment was three days. In three cases, the enuresis returned but was cured when the treatment was resumed.

Discussion:

According to the Chinese authors, *Huang Qi* and *Dang Shen* within this formula supplement the center and boost the qi. *Yi Zhi Ren*, *Fu Pen Zi*, and *Sang Piao Xiao* all secure the kidney qi and

warm the life-gate. If the kidney qi is full and the life-gate is exuberant, then they are able to warm the latter heaven spleen. Hence, these two groups of medicinals are a good match. These last three medicinals also astringe and reduce urination. In general, the medicinals which are warm in nature easily damage the fluids and humors, especially if there is frequent urination. In addition, children have delicate yin. Therefore, this formula should not be taken long-term but should be discontinued as soon as the disease is cured for fear that it may eliminate the old disease but engender a new one.

12. From “The Treatment of Pediatric Enuresis by the Methods of Lifting the Pot & Uncovering the Canopy, Opening the Orifices & Arousing the Spirit” by Wu De-guang & Zhao Ying-feng, *Zhong Yi Yao Yan Jiu (Chinese Medicinal Research)*, 1995, #2, p. 47-48

Cohort description:

There were 26 cases in the treatment group, 17 males and 9 females. Their ages ranged from 3-13 years old. The course of disease was as long as six months and as short as 20 days. In all cases, there was no apparent etiology. In most cases, the condition developed in the autumn and winter seasons. daytime urination was normal, and none of the cases had frequent, urgent, and/or painful urination. In 12 cases, urine analysis was done, including a bacteria culture. There was no bacterial growth in any of these cases.

Six cases manifested with some obvious symptoms of lung qi vacuity. Three cases had slimy, yellow tongue fur indicating damp heat, and the remaining children had a pale tongue with a thin, white fur. The authors were unable to identify any obvious yang vacuity symptoms. Every patient in this study had difficulty waking from sleep. Mild cases had enuresis one time every 2-4 days, and severe cases had enuresis daily or even sometimes more than two times each evening. In general, the nutritional development, the essence spirit, and spirit mind were all normal in all members of the treatment group.

Treatment method:

All members of this study were orally administered the authors' self-devised *Yi Niao Tang Jia Jian* (Enuresis Decoction with

Additions & Subtractions) which was composed of:

Ma Huang (Herba Ephedrae), 5g
Gui Zhi (Ramulus Cinnamomi), 5g
Fu Ling (Poria), 10g
Jie Geng (Radix Platycodi), 10g
Shi Chang Pu (Rhizoma Acori Tatarinowii), 15g
Sang Piao Xiao (Ootheca Mantidis), 10g
Deng Xin Cao (Medulla Junci), 1g
Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 10g

If there was obvious qi vacuity, 10 grams each of *Dang Shen* (Radix Codonopsis) and *Huang Qi* (Radix Astragali) were added.

If there was damp heat, five grams of *Long Dan Cao* (Radix Gentianae) were added. One packet of these medicinals was decocted in water and administered per day.

If the patient was less than seven years old, they used the above dosages. If the child was more than seven years old, they used one and a half times these doses. In addition, the family had to make sure the child refrained from playing excessively in order to prevent their essence spirit from being provoked. At supper, the child was instructed to drink little water and to urinate one time before sleep.

Study outcomes:

After treatment, all the children were cured. Twenty-three cases were cured after taking six packets, while three cases were cured after taking nine packets. In four cases, the enuresis returned after one month, but, after resuming the treatment, the condition was cured again. All other cases had no recurrence.

Discussion:

Based on their clinical observations over a long period of time and their reading of the literature, Drs. Wu and Zhao believe that pediatric enuresis is basically caused by the lungs not diffusing and downbearing and phlegm turbidity clouding the orifices. Therefore, they believe one should mainly use medicinals that free the flow and diffuse the lung qi, arouse the spirit, transform phlegm and

open the orifices. Within their formula, *Ma Huang*, *Gui Zhi*, and *Jie Geng* free the flow and diffuse the lung qi. *Gui Zhi* also frees the flow of yang and transforms qi. When these three medicinals are used together, it is as if they were lifting the pot and uncovering the canopy. *Shi Chang Pu* arouses the spirit and transforms phlegm. *Sang Piao Xiao* reduces urination and stops enuresis. *Deng Xin Cao* clears the heart and frees the flow of the orifices, and *Yi Zhi Ren* strengthens the intelligence and opens the orifices. *Fu Ling* seeps dampness and transforms phlegm, quiets the heart and calms the spirit.

13. From “*Gu Quan Yin* (Secure the Stream Beverage) in the Treatment of 37 Cases of Pediatric Enuresis” by Zhao Guo-ren, *Zhe Jiang Zhong Yi Za Zhi* (*Zhejiang Journal of Chinese Medicine*), 1991, #6, p. 252

Cohort description:

Of the 37 cases in this study, 26 were male and 11 were female. Twenty-one patients were 5-10 years old, 11 cases were 11-15 years old, and five cases were 16-21 years old. The course of the disease was less than three years long in 24 cases, 3-5 years long in three cases, and more than five years long in five cases.

Treatment method:

Self-devised *Gu Quan Yin* (Secure the Stream Beverage) was composed of:

Bu Gu Zhi (Fructus Psoraleae), 15-30g
Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 15-30g
Tu Si Zi (Semen Cuscutae), 15-30g
Sang Piao Xiao (Ootheca Mantidis), 15-30g
 mix-fried *Huang Qi* (Radix Astragali), 30g
Shan Yao (Radix Dioscoreae), 30g
Wu Wei Zi (Fructus Schisandrae), 10g
Shi Chang Pu (Rhizoma Acori Tatarinowii), 5-10g
 uncooked *Ma Huang* (Herba Ephedrae), 3-5g

One packet of these medicinals was decocted in water per day and administered in two divided doses.

Study outcomes:

The course of treatment ranged from three days to one month in length, with an average length of treatment of 8.5 days. In this time, 30 cases were cured, five cases improved, and two cases got no improvement. Therefore, the total amelioration rate was 94.5%.

Discussion:

The Chinese author has used this formula for more than 20 years to treat enuresis. Within it, *Bu Gu Zhi*, *Yi Zhi Ren*, *Tu Si Zi*, and *Sang Piao Xiao* warm yang and supplement the kidneys, secure the essence and astringe urination. *Huang Qi*, *Shan Yao*, and *Wu Wei Zi* supplement the lungs and spleen, boost the qi, and secure and contain. *Shi Chang Pu* is fragrant and aromatic and has the function to open the orifices. Uncooked *Ma Huang* diffuses the lungs and depurates water from the upper source. The formula's main function is to warm the kidneys, but, when all these medicinals are combined they simultaneously regulate the heart, lungs, spleen, and kidneys.

14. From "The Treatment of 40 Cases of Pediatric Enuresis with *Yi Niao He Ji* (Enuresis Mixture)" by Zhou Ci-fa, *Shang Hai Zhong Yi Yao Za Zhi* (*Shanghai Journal of Chinese Medicine & Medicinals*), 1989, #7, p. 23-24

Cohort description:

Of the 40 patients in this study, 20 were male and 20 were female. Twenty-six of these cases were between 3-5 years old, 11 were between 6-9, and three were more than 10 years old. The course of the disease was less than six months in 13 cases, 1-2 years in 15 cases, and more than three years in 12 cases. The accompanying symptoms included thirst in 27 cases, difficulty waking in 14 cases, thin, white tongue fur in 27 cases, peeled fur in five cases, and thin, slimy fur in eight cases.

Treatment method:

Yi Niao He Ji (Enuresis Mixture) was comprised of:

Dang Shen (Radix Codonopsitis), 9g
Bei Sha Shen (Radix Glenniae), 9g

Bai Zhu (Rhizoma Atractylodis Macrocephaleae), 9g
Sheng Di (uncooked Radix Rehmanniae), 9g
Fu Pen Zi (Fructus Rubi), 9g
Sang Piao Xiao (Ootheca Mantidis), 9g
Xian He Cao (Herba Agrimoniae), 9g
Dang Gui (Radix Angelicae Sinensis), 6g
Shi Chang (Rhizoma Acori Tatarinowii), 6g
Yuan Zhi (Radix Polygalae), 4.5g
Wu Wei Zi (Fructus Schisandrae), 3g
 uncooked *Mu Li* (Concha Ostreae), 30g

Each day, one packet of these medicinals was decocted two times and the resulting medicinal liquid combined. The patient then took 20 milliliters each time, three times per day. Seven days equaled one course of treatment.

Study outcomes:

After three courses of treatment, 22 cases were cured, 12 cases improved, and six cases did not improve. Therefore, the total effectiveness rate was 85%. All six cases that did not respond to this treatment were diagnosed with lower burner damp heat enuresis.

Discussion:

According to Dr. Zhou, within this formula, *Dang Shen*, *Bai Zhu*, and *Xian He Cao* supplement the center and boost the qi, fortify the stomach and engender fluids. *Sheng Di* and *Dang Gui* nourish and supplement the blood. *Fu Pen Zi* and *Sang Piao Xiao* secure the essence. *Wu Wei Zi* and *Bei Sha Shen* nourish yin and engender fluids. *Mu Li* constrains yin and astringes the essence. *Yuan Zhi* and *Shi Chang Pu* quiet the spirit, boost intelligence, and open the orifices.

15. From “The Use of *Yi Niao Fang* (Enuresis Formula) in the Treatment of 11 Cases of Pediatric Enuresis” by Miao Lin-yan *et al.*, *Han Dan Yi Xue Gao Deng Zhuan Ke Xue Xiao Xue Bao* (*Handan Medical Training Center Professional Training Periodical*), 1999, #9, p. 109

Cohort description:

All 11 cases enrolled in this clinical trial were outpatients. Eight of

these were male and three were female. All were between 4-9 years old. The course of disease was from two months to one year in one case, 2-3 years in five cases, 4-5 years in four cases, and nine years in one case. All the patients without exception had kidney yang vacuity symptoms. In most cases, other doctors had already used moxibustion, ear press seeds, or the application of heat to treat these cases without good results.

Treatment method:

Yi Niao Fang (Enuresis Formula) was composed of:

Tu Si Zi (Semen Cuscutae), 15g
Wu Yao (Radix Linderae), 10g
Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 10g
Sang Piao Xiao (Ootheca Mantidis), 10g
Shan Yao (Radix Dioscoreae), 15g
Wu Wei Zi (Fructus Schisandrae), 6g
Shi Chang Pu (Rhizoma Acori Tatarinowii), 10g
Bu Gu Zhi (Fructus Psoraleae), 12g
Jiu Xiang Chong (Aspongous), 15g
Chuan Xiong (Rhizoma Chuanxiong), 10g

One packet of these medicinals was soaked in water for 40 minutes. Then it was decocted and administered in two divided doses per day. Ten days of this regime equaled one course of treatment. During this period, the patients were told to stop using any other internal or external herbal medicines.

Study outcomes:

In this study, the least number of packets taken was 12 and the most taken was 30. Eight cases (72.7%) were cured, two cases (18.2%) improved, and one case (9.1%) did not improve. Therefore, the overall effectiveness rate was 90.9%.

Discussion:

Dr. Miao *et al.* believe that, when treating enuresis, the most important principles are to supplement the kidney yang and secure and astringe urination. Therefore, within their formula, *Tu Si Zi* and *Bu Gu Zhi* warm and supplement kidney yang. *Wu Wei Zi* and *Sang Piao Xiao* boost the kidneys, secure and astringe in order to reduce

urination. *Wu Yao* warms and transforms the bladder. *Jiu Xiang Chong* and *Yi Zhi Ren* supplement the spleen and kidneys. *Shan Yao* fortifies the spleen. *Chuan Xiong* and *Shi Chang Pu* quicken the blood and arouse the brain. The combination of these medicinals warms and supplements kidney yang, secures and astringes urination, fortifies the spleen and harmonizes the center, quickens the blood and arouses the brain. Because this formula uses medicinals with a warm, drying nature, they should not be overused.

16. From "The Treatment of 63 Cases of Enuresis with *Yi Niao San* (Enuresis Powder)" by He Zhe, *Bei Jing Zhong Yi (Beijing Chinese Medicine)*, 1991, #2, p.17

Cohort description:

Of the 63 cases in this study, 44 were male and 19 were female. All the patients were between 3-16 years old. Forty-three were diagnosed as PNE and 20 cases were diagnosed with SNE. Eighteen cases had severe enuresis (*i.e.*, two times each night), 38 cases had moderate enuresis (3-5 times per week), and seven cases had mild enuresis (2-3 times per month). In 38 cases, enuresis presented in a regular pattern; in 25 cases, it did not. The course of the disease ranged from 1-12 years.

Treatment method:

Yi Niao San (Enuresis Powder) was composed of:

Ma Huang (Radix Ephedrae), 12g

Wu Wei Zi (Fructus Schisandrae), 28g

Tu Si Zi (Semen Cuscutae), 28g

Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 21g

If there was kidney qi vacuity weakness with enuresis many times per night, cold limbs, low back and lower limb soreness and limpness, a pale tongue, and a deep, forceless pulse, 28 grams of *Shan Zhu* (Fructus Corni) and 21 grams each of *Gui Zhi* (Ramulus Cinnamomi) and *Fu Zi* (Radix Lateralis Praeparatus Aconiti Carmichaeli) were added. If there was spleen-lung qi vacuity with enuresis during sleep, shortage of qi, laziness to talk, fatigued spirit, lack of strength, devitalized appetite, a pale tongue with white fur, and a moderate or slightly slow, forceless pulse, 21 grams of *Shan Yao* (Radix Dioscoreae) and 42 grams of *Dang*

Shen (Radix Codonopsis) were added. For liver channel damp heat with a scanty amount of enuresis, yellow urine, a bitter taste in the mouth, red lips, a red tongue with yellow fur, and a rapid pulse, 42 grams of *Long Dan Cao* (Radix Gentianae) and 21 grams of *Ze Xie* (Rhizoma Alismatis) were added.

After the appropriate medicinals were chosen, they were ground into a fine powder and divided into seven packets. One half packet was administered each time for 5-8 year-olds, one packet was administered each time for 9-12 year-olds, and patients more than 13 years old were given even more. One dose was dissolved and taken warm before sleep each night, with seven days equaling one course of treatment. If the case was not cured after one course of treatment, the treatment continued for another course.

Study outcomes:

Sixty-two cases were cured and one case got no improvement. However, this patient discontinued treatment during the study. Of the 62 cases that were cured, five cases were cured after taking three doses, 24 cases were cured after taking seven doses, 17 cases were cured after 11 doses, and 16 cases were cured after 14 doses. The total amelioration rate was 96%.

17. From "Clinical Observations on Using Chinese Herbs to Treat Enuresis" by Wan Shu-bo, *Zhong Yi Za Zhi (Journal of Chinese Medicine)*, 1985, #6, p. 36

Cohort description:

There were 143 cases of enuresis enrolled in this study. These patients were randomly divided into two groups, a Chinese medicine group and a comparison group. There were 65 patients in the Chinese medicine group, 53 males and 12 females. Thirty-eight cases were between 5-9 years old, and 27 cases between 10-14 years old. The course of disease was less than five years in 54 cases, and more than six years in 11 cases. Forty-six of these cases had PNE and 19 cases had SNE. Also in this group, 27 cases had severe enuresis (enuresis one or more times per night), 33 cases had moderate enuresis (enuresis 1-6 times per week), and five cases had mild enuresis (enuresis 1-3 times per month). There was first degree deep sleep in three cases, second degree

deep sleep in 25 cases, and third degree deep sleep (*i.e.*, the most severe type) in 37 cases. The TCM pattern discrimination was lower origin vacuity cold in 41 cases, lung-spleen qi vacuity in 21 cases, and liver channel damp heat in three cases.

In the comparison group, there were 78 patients, 57 males and 21 females. Forty-five cases were between 5-9 years old, and 33 cases between 10-14 years old. The course of disease was less than five years in 67 cases and more than six years in 11 cases. Fifty-seven of these cases had PNE, and 21 cases had SNE. Also in this group, 27 cases had severe enuresis, 44 cases had moderate enuresis, and seven cases had mild enuresis. There was first degree deep sleep in six cases, second degree deep sleep in 34 cases, and third degree deep sleep in 38 cases. In this group, the TCM pattern discrimination was lower origin vacuity cold in 58 cases, lung-spleen qi vacuity in 16 cases, and liver channel damp heat in four cases.

Treatment method:

All members of the Chinese medicine group were administered *Yi Niao Ling Fang* (Effective Formula for Enuresis):

Sang Piao Xiao (Ootheca Mantidis), 10g
Tu Si Zi (Semen Cuscutae), 10g
Fu Pen Zi (Fructus Rubi), 10g
Shi Chang Pu (Rhizoma Acori Tatarinowii), 10g
Chuan Xiong (Rhizoma Chuanxiong), 10g
Jin Ying Zi (Fructus Rosae Laevigatae), 10g
Huang Qi (Radix Astragali), 30g

The above medicinals were made into soluble granules in the pharmacy of the Chinese author's hospital. Each day, one packet of these soluble granules was administered after being divided into three doses. Seven days equaled one course of treatment, and this treatment was continued for two courses.

All members of the comparison group were administered 0.1 grams of meclofenazine/centrofenazine per day in three divided doses. Seven days equaled one course of treatment, and this treatment was also continued for two courses.

Study outcomes:

The following table shows the outcomes in these two groups.

GROUP	CURED	IMPROVED	No IMPROVEMENT	TOTAL EFFECTIVENESS
CHINESE MEDICINE	27 (41.5%)	30 (46.2%)	8 (12.3%)	87.7%
COMPARISON	26 (33.3%)	29 (37.2%)	23 (29.5%)	70.5%

Discussion:

According to the Chinese author, in clinical practice, lower origin vacuity cold and lung-spleen qi vacuity are the most commonly seen patterns of enuresis. Therefore the author uses the treatment principles to bank the origin and supplement the kidneys, fortify the spleen and boost the qi, constrain the lungs and reduce urination as his main methods. He then combines these main methods with the secondary methods of opening the orifices and arousing the brain, moving the qi and quickening the blood. Within the above formula, *Tu Si Zi*, *Jin Ying Zi*, and *Fu Pen Zi* supplement the kidneys and bank the origin, invigorate yang and reduce urination. Therefore, they can treat lower origin vacuity cold. The large dose of *Huang Qi* used in this formula has the ability to boost the qi and fortify the spleen. When combined with *Sang Piao Xiao* to invigorate yang and transform qi, *Shi Chang Pu* promotes the interaction between the heart and kidneys, quiets the spirit, settles the mind, frees the flow of the nine orifices, and arouses the brain. *Chuan Xiong* quickens the blood and transforms stasis, moves the qi and frees the flow of stagnation. When all these medicinals are combined together, they strengthen the spleen and kidneys' qi transformation and, therefore, effectively treat enuresis.

18. From "The Experience of Dr. Xu Xiao-zhou in the Treatment of 109 Cases of Pediatric Enuresis" by Xu Mei-lin, *Shang Hai Zhong Yi Yao Za Zhi (Shanghai Journal of Chinese Medicine & Medicinals)*, 1985, #6, p. 20

Cohort description:

There were 109 patients with enuresis included in this study, 68 males and 41 females. Thirty cases were between 3-5 years old

(27.52%), 29 cases were between 5-7 years old (26.61%), 17 cases were between 7-9 years old ((15.60%), and 33 cases were between 9-12 years old (30.27%). Inclusion criteria for this study included being between 3-12 years old, enuresis when sleeping during the day or at night, and testing showing no organic cause of the enuresis.

Treatment method:

Based on the treatment principles of warming the kidneys and securing and containing, diffusing the lungs and opening the orifices, all members enrolled in this study were administered the following Chinese medicinals:

Bu Gu Zhi (Fructus Psoraleae), 10g
Jin Ying Zi (Fructus Rosae Laevigatae), 10g
Fang Feng (Radix Saposhnikoviae), 10g
Gao Ben (Rhizoma Ligustici), 10g
Fu Ping Zi (Herba Spirodelae), 10g
Shi Chang Pu (Rhizoma Acori Tatarinowii), 10g
Gan Cao (Radix Glycyrrhizae), 5g

Depending on the patient's signs and symptoms, 10 grams each of *Ma Huang* (Herba Ephedrae) and *Zhi Mu* (Rhizoma Anemarrhenae) and two grams of *Huang Bai* (Cortex Phellodendri) may have been added. Other possible additions included unspecified doses of *Dang Shen* (Radix Codonopsitis), *Huang Qi* (Radix Astragali), and *Shan Zha* (Fructus Crataegi).

One packet of these medicinals was decocted in water and administered per day. Every seven days, the child was reassessed, and four assessments equaled one course of treatment.

Study outcomes:

After four weeks of treatment, two cases were cured, 93 cases had improved, and 14 cases had not improved. Therefore, the total amelioration rate at that time was 87.16%. One month after stopping treatment, four cases were cured, 77 cases had improved, and 28 cases had not improved, for a total amelioration rate at that time of 74.31%. Six or more months after stopping treatment, 17 cases were cured, 61 cases had improved, and 31 cases had not improved. The total amelioration rate at this time was 71.56%.

Discussion:

Xu Xiao-zhou says that *Bu Gu Zhi* is an important medicinal to treat enuresis. This medicinal enters the kidney channel and has the functions of supplementing the kidneys and invigorating yang. When combined with *Jin Ying Zi*, this strengthens this medicinal's ability to secure and contain the lower origin. When it is combined with *Fang Feng* and *Gao Ben*, it strengthens *Bu Gu Zhi*'s warming function. These last two medicinals enter the lung and bladder channels and have the functions of scattering cold and dispelling wind and dampness. Thus they can scatter bladder cold. *Fu Ping Zi*'s nature is cold, and it diffuses and emits the lung qi, thus freeing the flow of the waterways. When used with warm, drying medicinals, it balances the formula. If kidney yang is insufficient, then heart yang is devitalized. This, in turn, can lead to deep sleep and enuresis. *Shi Chang Pu* aromatically transforms dampness and opens the orifices. Therefore, it is important in the treatment of enuresis. Zhang Jie-bin, in his *Jing Yue Quan Shu* (*Jing-yue's Complete Book*), when discussing enuresis, says, "To treat water, you must treat the qi, and, to treat the kidneys, you must treat the lungs." The lungs are in the upper burner and regulate the waterways in this area. Because they descend water downward to the bladder, they are considered the upper source of water. The kidneys are in the lower burner, they govern water, are responsible for urination and excretion, and are the lower source of water in the body. If the lungs are exuberant, then the lungs' function of diffusing and downbearing is normal. Thus the kidney qi is sufficient and can do its duty of securing and containing. Therefore, an appropriate amount of *Fang Feng*, *Gao Ben*, and *Fu Ping Zi* are used in order to diffuse and emit the lung qi. In stubborn cases, this doctor suggests adding *Ma Huang*. This medicinal's nature is warm and it enters the lung and bladder channels. It strengthens the diffusing, emitting, and warming functions of this formula. When the lungs' qi is diffused and free flowing, the qi transformation of the triple burner is normal, the bladder qi transformation is strengthened, and the urine is retained.

External treatments

In Chinese medicine, enuresis is categorized as an internal disease. Therefore, the articles in this section are based on the TCM theory "[for] internal disease, [use] an external treatment." This

category includes abstracts of articles about using Chinese herbal medicine externally applied to the navel (*i.e.*, *Shen Que*, CV 8) and other acupuncture points. Navel therapy or herbal medicine applied to the navel is a special treatment modality commonly used in TCM pediatrics. The medicinals are applied to the center of the navel at *Shen Que* (CV 8) because the navel is a thin and weak part on the abdominal wall. The periphery of the navel is abundant in blood and nerve sensitivity, and the concave shape of the navel makes this hollow part of the body concealed. Therefore, the medicinals easily penetrate through the skin and are diffused in all directions to circulate internally. In addition, as an acupoint, *Shen Que* frees the flow of the qi internally of the viscera and bowels and connects to the lower root of the original qi. Thus it banks the origin, secures the root, and warms yang. In my experience, the external treatments below are excellent options for the treatment of children. These treatments may be combined with other therapies or used by themselves. This form of treatment is very cost-effective and is good for children unable to take internal medicine and/or are afraid of acupuncture needles.

1. From “The Treatment of 48 Cases of Pediatric Enuresis with Chinese Medicinals Applied to the Navel” by Han Zhi, *Liao Ning Zhong Yi Za Zhi (Liaoning Journal of Chinese Medicine)*, 1995, #6, p. 264

Cohort description:

There were 48 cases included in this clinical trial, 32 males and 16 females. The ages of the children ranged from 4-16 years, and the course of disease was between 1-4 years. The main symptom in all these cases was nocturnal enuresis, and none of the patients had an organic disease.

Treatment method:

Zhi Yi San (Stop Night-time [Urination] Powder) was composed of equal portions of:

He Shou Wu (Radix Polygoni Multiflori)
Liu Huang (Sulphur)
Sang Piao Xiao (Ootheca Mantidis)
Long Gu (Os Draconis)

These medicinals were ground into a powder and put into a bottle for later use. Prior to sleep, the navel region was washed and cleaned. Then five grams of *Zhi Yi San* were combined with fresh bulbs of *Cong Bai* (Bulbus Allii Fistulosi). The *Cong Bai* was pounded with a pestle into a mash and formed together with the powder into a round cake. The cake was applied to the navel area, covered with a piece of gauze, and secured in place with an adhesive plaster. This plaster was then removed in the morning. Seven days of this treatment equaled one course of treatment. The child was told to urinate before sleep. In addition, the doctor asked the parents to find out when the child usually had enuresis and asked them to wake the child at this time before they had enuresis.

Study outcomes:

After 1-6 courses of treatment, 40 out of 48 patients fully recovered, seven cases had some improvement, and one case did not improve. Thus, the overall rate of effectiveness was 97.9%.

Discussion:

In the Chinese author's self-devised formula, *He Shou Wu* is bitter, sweet, and astringent and enters the liver and kidney channels. *He Shou Wu* supplements the liver and kidneys and boosts both the essence and blood as well as promotes the contraction of the essence qi. *Liu Huang* grasps pure yang's essence. Its greatly warm nature is good at supplementing the life-gate fire and reinforcing yang. *Sang Piao Xiao* supplements kidney yang and reduces urination. This medicinal also has a relatively strong effect on promoting contraction, securing and astringing. *Long Gu* has a sweet and astringent nature. It has a calming effect, boosts the qi and contains, astringes, and stops urination. *Cong Bai* frees the flow of yang and transforms the qi. When all these medicinals are used together, they achieve a good effect in the treatment of pediatric enuresis due to kidney vacuity. Together, they supplement the kidneys and reinforce yang, reduce urine and stop urination.

2. From "The Treatment of 30 Cases of Pediatric Nocturnal Enuresis by the Methods of Chinese Medicinals Applied to the Navel Combined with Behavioral Therapy" by Hu Wen-bao, *Hu Nan Zhong Yi Yao Bao (Hunan Guiding Journal of Chinese Medicine)*, 1996, #2, p. 26

Cohort description:

Among the 30 outpatients enrolled in this study, 21 were male and nine were female. Nineteen cases were between 5-6 years old, five cases were between 7-8 years old, and six cases were between 9-11 years old. Two cases averaged one episode of enuresis every two nights, 26 cases had enuresis 1-3 times a night, and two cases had enuresis more than three times per night. Twenty-seven cases had enuresis within the first three hours after falling asleep. In 10 cases, there was a family history of enuresis.

Treatment method:

The following two treatment modalities were used in tandem.

A. Chinese medicinals

Each application consisted of two grams each of powdered *Ma Huang* (Herba Ephedrae), *Rou Gui* (Cortex Cinnamomi), *Yi Zhi Ren* (Fructus Alpiniae Oxyphyllae), and *Wu Bei Zi* (Galla Rhois). Water was added to make pills which were placed into the center of the navel and secured in place with an adhesive plaster. Each evening, the medicinals were changed, and this application was used for seven consecutive days.

B. Behavioral therapy

The family was first asked when the child usually had enuresis in the past. When this was established, the parent was asked to wake the child 30-60 minutes before the child normally wet the bed. When these required conditions were established, the objective was to have the child independently use the toilet to urinate. The author explained that, if this condition takes place all the time, the child will regain consciousness and will be able to hold their urine. In addition, the child was supervised so as to drink a lot of water during the day and then lengthen the intervals between urination to two times its current length. This was done to expand the bladder to become larger. At the same time, the child was encouraged during urination to suspend the expulsion of urine, hold their breath, and count to 10. By holding their urine to the best of their ability, it would hopefully increase the bladder's and sphincter's ability to control urination.

Study outcomes:

Eighteen cases made a full recovery after seven days of treatment. Another nine cases improved, and three cases got no improvement. Therefore, the overall rate of effectiveness was 90.1%.

Discussion:

According to Dr. Hu, nocturnal enuresis basically develops because of constitutional insufficiency, a vacuous, weak constitution, kidney yang depletion and damage, and, therefore, the kidneys not securing and containing and the bladder not restraining. Thus treatment should warm the kidneys and stop urination. In the above formula, *Rou Gui* is acrid and warm and warms the kidneys. *Yi Zhi Ren* is acrid and warm and supplements the kidneys and reduces urination. *Wu Bei Zi* has a sour flavor and astringent nature and also reduces urination. *Ma Huang* contains ephedrine. If the bladder receives choline, it has the effect of enlarging the bladder's capacity as well as simultaneously stimulating the cerebral cortex.

3. From "[Achieving] Good Results in the Treatment of Pediatric Enuresis with *Cong Liu Gao* (Scallion & Sulfur Paste)" by Liu Jun-yun & Zhao Xiu-ling, *Guo Yi Lun Tan (Chinese Medicine Tribune)*, 1998, #2, p. 9

Cohort description:

There were 132 cases of pediatric enuresis in this study. No further description of these patients was given.

Treatment method:

Seven pieces of fresh *Cong Bai* (*Bulbus Allii Fistulosi*) were washed, cleaned, and pounded with a pestle until they were like mud in consistency. Then nine grams of *Liu Huang* (Sulphur) were added and mixed together. This paste was applied to *Shen Que* (CV 8) each night before sleep after cleaning the area with 75% alcohol. A piece of gauze was placed over the area to secure the paste in the navel. These medicinals were replaced one time every day.

Study outcomes:

All 132 cases obtained a complete cure in 2-4 days, and there was no reoccurrence of enuresis in any of the cases two years after treatment.

4. From "Clinical Observations of Using *Yi Shen San* (Boost the Kidneys Powder) Externally to Treat 60 Cases of Pediatric Enuresis" by Lin Jie, *Hu Bei Zhong Yi Za Zhi* (Hubei Journal of Chinese Medicine), 2002, #9, p. 31

Cohort description:

Altogether, there were 120 patients in this study who were randomly divided into two groups, 60 individuals in the treatment group and 60 individuals in the comparison group. In the treatment group, 38 patients were male and 22 were female. They ranged in age from 5-14 years old, with an average age of 7.6 years. The course of diseases in these children was as short as two months and as long as nine years. Among this group, 16 had a family history of enuresis. In the comparison group, 40 patients were male and 20 were female. They ranged in age from 5-14 years old, with an average age of 7.4 years. The course of diseases in these children was as short as three months and as long as 8.5 years. Among this group, 17 had a family history of enuresis. Therefore, there was no significant statistical difference in the data of both groups.

Treatment method:

All members of the treatment group were treated with *Yi Shen San* (Boost the Kidneys Powder) which consisted of equal amounts of:

Rou Gui (Cortex Cinnamomi)
Fu Pen Zi (Fructus Rubi)
Yi Zhi Ren (Fructus Alpiniae Oxyphyllae)
Qian Shi (Semen Euryalis)
Wu Wei Zi (Fructus Schisandrae)
 mix-fried *Gui Ban* (Plastrum Testudinis)
Ding Xiang (Flos Caryophylli)

Thirty grams of this powder was applied externally before sleep to

Shen Que (CV 8) and *Ming Men* (GV 4), secured in place with a piece of gauze one time each night, and then replaced the following evening.

All members of the comparison group were treated with Shanghai Chinese Medicinal Factory's *Suo Quan Wan* (Reduce the Stream Pills). Six grams of these pills were administered orally three times a day.

In both groups, eight weeks equaled one course of treatment and, during the course of treatment, all other methods of treatment were stopped. The patients were advised not to have any water or other fluids to drink two hours before bed and to also urinate before going to bed. During the day, they were encouraged to drink a lot of water and other fluids. They were asked to try and increase the length of the intervals between urinations in order to strengthen the function of the bladder.

Study outcomes:

In the treatment group 34 cases registered obvious improvement, meaning that the main symptoms were reduced by more than or equal to 50%. Eighteen cases improved, and eight cases did not improve. Therefore, the total amelioration rate in this group was 86.6%. In the comparison group, there were nine cases of obvious improvement, 15 other cases improved, and 36 cases got no improvement. Therefore, the total amelioration rate in this group was only 40.0%. On a follow-up visit three months after treatment was suspended, there were 30 cases of obvious improvement, 19 cases of some improvement, and 11 cases of no improvement in the treatment group for a total amelioration rate of 81.6%. In the comparison group, there were six cases of obvious improvement, 17 cases of improvement, and 37 cases of no improvement for a total amelioration rate of 38.33%. This meant that, after three months, there was still a significant statistical difference between the treatment group and the comparison group.

Discussion:

According to Dr. Lin, the main treatment of this condition should be to enrich and supplement the kidneys, warm yang, transform the qi, secure and contain, and reduce urination. Correspondingly,

within *Yi Shen San*, *Ding Xiang*, and *Rou Gui* warm the kidneys and assist yang. *Yi Zhi Ren* warms the kidneys and reduces urination. *Wu Wei Zi* supplements the kidneys and secures and astringes. *Fu Pen Zi* and *Qian Shi* boost the kidneys, reduce urination, and stop enuresis. Together, the whole formula has the function of warming the kidneys and securing and containing. According to modern pharmacology, *Yi Zhi Ren* and *Fu Pen Zi* possess the function of inhibiting urination. *Wu Wei Zi* improves the function of the central nervous system and, therefore, has a positive effect on enuresis due to both functional immaturity and organic causes.

External application of these medicinals achieves its effect via both chemistry and physics, while the points selected regulate the function of the viscera and bowels and promote the equilibrium of yin and yang. *Shen Que* frees the flow of the qi internally of the viscera and bowels and is the lower root connecting to the original qi. It banks the origin, secures the root, and warms yang. As stated above, at this location, the skin is thin, and, therefore, the medicinals penetrate through the skin barrier easily. *Ming Men* is on the governing vessel and possesses the ability to supplement the kidney qi, warm kidney yang, assist qi transformation, and secure the bladder. This study suggests that the external application of *Yi Shen San* is superior to the internal administration of *Suo Quan Wan*. Dr. Lin emphasizes that this treatment is beneficial because it is simple to use, there is no pain, and children accept this method easily.

5. From “The Treatment of 10 Cases of Pediatric Enuresis with *Ding Gui Zhang Nao San* (Cloves, Cinnamon & Camphor Powder) Applied to the Umbilicus” by Wu Lian Zhen, *He Nan Zhong Yi* (Henan Journal of Traditional Chinese Medicine), Vol. 22, #1, January 2002, p. 18

Cohort description:

Ten cases of simple pediatric enuresis were described in this study.

Treatment method:

Ding Gui Zhang Nao San (Cloves, Cinnamon & Camphor Powder) was composed of:

Ding Xiang (Flos Caryophylli), 1.5g

Rou Gui (Cortex Cinnamomi), 1.5g

Zhang Nao (Camphor), 3g

Ding Xiang and *Rou Gui* were mixed together and ground into powder. Then *Zhang Nao* powder was mixed with the above and applied to the umbilicus one time per day. Seven days equaled one course of treatment. This area was covered with a *Shang Shi Zhi Tong Gao* (Dampness Damage Pain-Relieving Plaster). If the child had an allergy to this plaster, the child could use cheesecloth with *Jie Du Xiao Yan Gao* (Anti-Inflammatory Resolve Toxins Plaster) instead. The author also suggested that this treatment be combined with acupuncture at *Zu San Li* (St 36) and *San Yin Jiao* (Sp 6) or combined with the internal administration of *Gui Fu Ba Wei Wan* (Cinnamon & Aconite Eight Flavors Pills).

Study outcomes:

Five of these cases were cured after one course of treatment, four cases were cured after two courses, and one case, who was 18 years old, was cured after three courses of treatment. Therefore, the total cure rate was 100%.

6. From "Clinical Observations on & a Comparison Study of the Treatment of Pediatric Enuresis Combining *Yi Niao Ding* (Settle Enuresis [Powder]) & Behavioral Therapy" by Hu Yi-bao *et al.*, *Si Chuan Zhong Yi* (Sichuan Chinese Medicine), 2001, #12, p. 54-55

Cohort description:

There were 166 cases in this study who were randomly divided into a treatment group and a comparison group. There were 124 patients in the treatment group, 86 males and 38 females. The ages of the patients were 5-6 years old in 65 cases, 7-8 years old in 23 cases, and 9-11 years old in 36 cases. On average, the children wet their beds every other night in seven cases. One hundred ten cases wet their bed 1-3 times per night, and seven cases had enuresis more than three times per night. Twenty-six cases had a history of enuresis in the family, and 38 cases had an ultrasound of their bladder to determine its capacity. The capacity was 2/3 of normal in six cases, half of normal in nine cases, 1/3 of normal in 13 cases, and normal (*i.e.*, equal to 10ml/kg) in 10 cases. Twenty-four cases in the treatment group received an echocephalography. Of these patients, six

cases were borderline abnormal, three cases had epilepsy-like changes, and 15 cases were normal. Fifteen cases had an x-ray of the lumbar area. Of these, six cases had occult spina bifida and nine cases were normal. Thirty-six cases had routine urine analysis. Of these, two cases had increased leukocytes in their urine.

There were 42 patients in the comparison group, 31 males and 11 females. The ages of the patients in this group were 5-6 years old in 19 cases, 7-8 years old in 10 cases, and 9-11 years old in 13 cases. On average, the children wet their beds every other night in three cases and 1-3 times per night in 36 cases. Five cases had enuresis more than three times per night. Nine cases had a history of enuresis in the family, and 16 cases had an ultrasound of their bladder to determine its capacity. The capacity was 2/3 of normal in four cases, half of normal in seven cases, 1/3 of normal in four cases, and normal in one case. Nine cases in the comparison group received an echocephalography. Of these patients, one case was borderline abnormal, one case had epilepsy-like changes, and seven cases were normal. Six cases had an x-ray of the lumbar area. Two of these cases had occult spina bifida and four cases were normal. Thirteen cases had routine urine analysis, and one case had increased white blood cells in their urine.

Treatment method:

All members of the treatment group had *Yi Niao Ding* (Settle Enuresis [powder]) applied to their umbilicus. This powder consisted of two grams each of:

Ma Huang (Herba Ephedrae)

Rou Gui (Cortex Cinnamomi)

Yi Zhi Ren (Fructus Alpiniae Oxyphyllae)

Wu Bei Zi (Galla Rhois)

The above medicinals were ground into powder and mixed with an appropriate amount of water to make a pill or bolus. This was then applied to the umbilicus and secured in place. This treatment was applied one time each evening, and seven days equaled one course of treatment. The length of treatment for all patients was between 2-4 courses.

All members of the comparison group were administered an

unspecified dose of Ditropan®, and the length of treatment was the same as the treatment group.

In addition, all members of both groups received the following advice. The parents were asked to record when the child did not have enuresis and to reward them for this. This reward consisted of buying them something or complimenting them. In addition, the doctor provided encouragement to the patient during weekly visits. These methods of positive reinforcement improved the treatment results. The parents were also asked to wake the child or set an alarm to wake the child one half hour before they usually wet the bed. When awake, the child was encouraged to go to the bathroom to empty their bladder. Further, the child was encouraged to increase their water consumption during the day and to increase the intervals between urination. These exercises were meant to improve the child's ability to hold more urine and decrease the frequency of their urination. Also, during urination, the child was asked to stop their urine mid-stream 1-10 times and hold it in order to strengthen the bladder muscles.

Study outcomes:

In the treatment group, 74 cases (59.7%) were cured, 37 cases (29.8%) were improved, and 13 cases (10.5%) got no improvement. Therefore, the total amelioration rate in this group was 89.5%. In the comparison group, six cases (14.3 %) were cured, 17 cases (40.5%) were improved, and 19 cases (45.2%) got no improvement. Thus, the total amelioration rate in this group was 54.8%.

Combined internally administered & externally applied Chinese herbal medicine

1. From "*Jia Wei Liu Wei Di Huang Wan* (Added Flavors Six Flavors Rehmannia Pills) Combined with the External Application of *Wu Bei Zi Fen* (Galla Rhois Powder) in the Treatment of Pediatric Enuresis" by Huang Jian-qun, *He Bei Zhong Yi Za Zhi* (Hebei Journal of Chinese Medicine), 2002, #8, p. 45

Cohort description:

Thirty-eight cases were enrolled in this study, 23 males and 15 females. Twelve cases were less than seven years old, 20 cases

were between 8-10 years old, and six cases were between 11-13 years old. The average age of these patients was 8.5 years old. The course of the disease was 1-3 years long in 18 cases and 4-6 years long in 10 cases, with the average length of time being 2.7 years. Eighteen cases had enuresis one time per night, 12 cases had enuresis 2-3 times per night, and eight cases had enuresis more than four times per night.

Treatment method:

Internal treatment consisted of the administration of *Jia Wei Liu Wei Di Huang Wan* (Added Flavors Six Flavors Rehmannia Pills):

Shu Di (cooked Radix Rehmanniae), 15g
Shan Yao (Radix Dioscoreae), 15g
Shan Zhu Yu (Fructus Corni), 5g
Dan Pi (Cortex Moutan), 5g
Ze Xie (Rhizoma Alismatis), 10g
Fu Ling (Poria), 10g
Sang Piao Xiao (Ootheca Mantidis), 10g
Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 10g
 uncooked *Ma Huang* (Herba Ephedrae), 3g

For night sweats, two grams of *Wu Wei Zi* (Fructus Schisandrae) and 15 grams of *Huang Qi* (Radix Astragali) were added.

For spleen vacuity with poor appetite, five grams of *Cang Zhu* (Rhizoma Atractylodis), 15 grams of *Yi Yi Ren* (Semen Coicis), and five grams of *Ji Nei Jin* (Endothelium Corneum Gigeriae Galli) were added.

One packet of these medicinals was decocted in water and administered in two divided doses per day. Ten days equaled one course of treatment, and the treatment was continued for 3-5 courses.

External treatment consisted of powdered *Wu Bei Zi* (Galla Rhois) combined with an appropriate amount of rice vinegar and applied to the umbilicus. This was covered before sleep each night. Five consecutive days equaled one course of treatment. After a two-day interval, the patient began the second course of treatment.

In addition to the above treatment, the doctor instructed the

parents to let the child relax and encourage the child to believe the disease could be cured. They should have the child empty his or her bladder before sleep and the child should not play exciting games before sleep.

Study outcomes:

Twenty-three cases were cured, 12 cases improved, and three cases did not improve. Therefore, the total amelioration rate was 92%. The shortest length of treatment was three courses and the longest was nine courses.

2. From "The Treatment of 15 Cases of Pediatric Enuresis with the External Application of *Wu Zhu Yu* (Fructus Evodiae Rutecarpae) & the Internal Administration of *Jin Gui Shen Qi Wan* (Golden Cabinet Kidney Qi Pills)" by Hu Xian-guo, *Shi Yong Zhong Xi Yi Jie He Lin Chuang Za Zhi (The Clinical Journal of Practical Integrated Chinese-Western Medicine)*, 2002, #2, p. 35

Cohort description:

There were 15 patients in the study, five males and 10 females. All these patients were between the ages of 3-15 years old, and the course of disease ranged from three months to 10 years.

Treatment method:

External treatment consisted of the application of *Wu Zhu Yu* (Fructus Evodiae Rutecarpae). An appropriate amount of this medicinal was ground into powder, mixed with rice vinegar, and applied to the navel. These medicinals were covered and were applied once every 24 hours. Seven days equaled one course of treatment, and the treatment was continued for 1-2 courses.

Internal treatment consisted of the oral administration of *Jin Gui Shen Qi Wan* (Golden Cabinet Kidney Qi Pills). Patients three years old took three pills each time, and the dosage was increased by one pill for every two years of age. The maximum number of pills taken was eight per time, and every patient took their appropriate dosage three times per day.

Study outcomes:

The above treatment was continued for two weeks, at which

time, 11 cases were cured and four cases improved. Therefore, the total effectiveness rate was 100%.

3. From “The Treatment of 25 Cases of Pediatric Enuresis with *Suo Quan Wan Jia Wei* (Reduce the Stream Pills with Added Flavors) & Powdered *Wu Bei Zi* (Galla Rhois) Externally Applied to the Umbilicus” by Xia Zhen-lian & Li Wei-wei, *Si Chuan Zhong Yi (Sichuan Chinese Medicine)*, 2001, #7, p. 54-55

Cohort description:

Of the 25 cases included in this study, nine were female and 16 were male. These children's ages ranged from 4-9 years old. The course of disease was between 1-6 years, with an average duration of three years.

Treatment method:

The internal treatment consisted of the oral administration of *Suo Quan Wan Jia Wei* (Reduce the Stream Pills with Added Flavors):

stir-fried *Yi Zhi Ren* (Radix Alpiniae Oxyphyllae), 10g
 stir-fried *Wu Yao* (Radix Linderae), 10g
 stir-fried *Shan Yao* (Radix Dioscoreae), 15g
Sang Piao Xiao (Ootheca Mantidis), 25g
 stir-fried *Yan* (salt), an appropriate amount

Using the stir-fried version of the above medicinals together with an appropriate amount of salt guides this formula to enter the kidneys and strengthens its ability to constrain, secure, and astringe.

For kidney qi vacuity, *Wu Zi Yan Zong Wan* (Five Seeds Increase Progeny Pills) were added. These consist of *Gou Qi Zi* (Fructus Lycii), *Tu Si Zi* (Semen Cuscutae), *Fu Pen Zi* (Fructus Rubi), *Wu Wei Zi* (Fructus Schisandrae), etc.

For spleen vacuity, *Bu Zhong Yi Qi Tang* (Supplement the Center & Boost the Qi Decoction) was added. This consists of *Huang Qi* (Radix Astragali), *Dang Shen* (Radix Codonopsis), *Bai Zhu* (Rhizoma Atractylodis Macrocephalae), *Sheng Ma* (Rhizoma Cimicifugae), *Chai Hu* (Radix Bupleuri), etc. For spleen-kidney dual vacuity, a combination of the above two formulas was added.

If there was difficulty waking, *Shi Chang Pu* (Rhizoma Acori Tatarinowii) was added.

One packet of these medicinals was decocted in water and administered in three divided doses per day. Two weeks equaled one course of treatment. In general, the above treatment was used for 3-5 courses or longer.

External treatment consisted of 10 grams of powdered *Wu Bei Zi* (Galla Rhois) mixed with an appropriate amount of rice vinegar and applied to the umbilicus. This paste was applied one time per night for five consecutive days (one course of treatment), and then the treatment was stopped for two days. This was repeated for two courses of treatment.

Study outcomes:

Fifteen cases (60%) were cured, eight cases (32%) improved, and two cases (8%) had no improvement. The least treatment needed was three courses, and the most was 10. There was no recurrence at six and 12 month follow-up visits.

Acupuncture

1. From "The Treatment of 105 Cases of Pediatric Enuresis with Acupuncture" by Gao Jie-yin, *Hu Bei Zhong Yi Za Zhi (Hubei Journal of Chinese Medicine)*, 1992, #5, p. 40

Cohort description:

There were 105 cases in this study, 73 males and 32 females. The patients were between 5-10 years old in 56 cases, between 10-14 years old in 43 cases, and more than 14 years old in six cases. The course of disease was between one half to 15 years. These cases of enuresis were often accompanied by poor appetite, a lusterless facial complexion, and decreased essence-spirit. Compared to other children their age, these children had a lower body weight.

Treatment method:

The main points consisted of:

Guan Yuan (CV 4)

Qi Hai (CV 6)

San Yin Jiao (Sp 6)

Auxiliary points included:

Shen Shu (Bl 23)

Zhong Ji (CV 3)

Zu San Li (St 36)

Two to four points were chosen each time and these points were alternated. Hand stimulation was applied to the points, and the needles were retained for 20 minutes. The patient received two treatments each week, and 2-4 treatments equaled one course.

Study outcomes:

After 1-2 courses of treatment, 76 cases were cured, 29 cases improved, and two cases did not improve. Therefore, the total amelioration rate was 96.8%.

2. From “The Treatment of 53 Cases of Pediatric Enuresis Using *Bai Hui* (GV 20) & Pattern Discrimination” by Dong Wen-yi & Wu Chao, *Liao Ning Zhong Yi Za Zhi (Liaoning Journal of Chinese Medicine)*, 1995, #9, p. 420

Cohort description:

Fifty-three cases of enuresis between the ages of 3-14 years old were enrolled in this clinical trial. Of these, 29 were male and 24 were female. Therefore, there was a ratio of 1.2:1 of male to females in this study. Eighteen cases were less than five years old, 27 cases were between 6-10 years old, and eight cases were between 11-14 years old. The Chinese medical pattern discrimination was heart-kidney yang vacuity in 38 cases and spleen-lung qi vacuity in 15 cases. Testing showed 32 of the 53 cases (60.37%) in this study suffered from occult spina bifida.

Treatment method:

Bai Hui (GV 20) was the main point used in this protocol. If there was heart-kidney yang vacuity, the following points were added bilaterally: *Shen Shu* (Bl 23), *Tai Xi* (Ki 3), *Shen Men* (Ht 7), and

Guan Yuan (CV 4). If there was spleen-lung qi vacuity, then *San Yin Jiao* (Sp 6), *Zu San Li* (St 36), *Nei Guan* (Per 6), and *Qi Hai* (CV 6) were added.

The even supplementing-even draining method of stimulation was used on all these points except for *Bai Hui* which was supplemented. Needles were retained for 15 minutes and stimulated three times during this period. One treatment was given per day, and 10 treatments equaled one course. The least number of courses a patient was treated was one, and the most was four courses of treatment.

Study outcomes:

The following table shows the comparative outcome between those manifesting different patterns.

RESULTS	HEART-KIDNEY YANG VACUITY PATTERN(%)	SPLEEN-LUNG QI VACUITY PATTERN(%)	TOTAL NUMBER OF CASES (%)
Cured	27 (52.83)	2 (3.77)	29 (56.60)
Marked results	4 (7.55)	5 (9.43)	9 (16.98)
Improvement	3 (5.66)	3 (5.66)	6 (11.32)
Some improvement	2 (3.77)	4 (7.55)	6 (11.32)
No improvement	2 (3.77)	1 (1.88)	3 (5.66)
Total effectiveness	36 (67.93)	1	50 (94.34)

Discussion:

According to the Chinese authors, *Bai Hui* quiets the spirit, boosts the intelligence, arouses the brain, and opens the orifices and is an important point for the treatment of mental-emotional diseases. Due to these functions, *Bai Hui* is an important addition to acupuncture and tuina protocols when treating enuresis.

3. From “The Treatment of 83 Cases of Pediatric Enuresis with Acupuncture” by Xu Guang-li & Cui Da-ming, *Ji Lin Zhong Yi Yao (Jilin Chinese Medicine & Medicinals)*, 1994, #4, p. 29

Cohort description:

There were 83 out-patients in this study. Forty-eight were male and 35 cases were female. All children were between the ages of 4-18 years old, with an average age of 7.2 years. The course of

disease was as short as one year and as long as 11 years, with an average length of 3.4 years. Enuresis occurred 2-3 times per day in 21 cases, one time a day in 36 cases, two times a week in 17 cases, and an indefinite number of times in nine cases.

Treatment method:

Acupuncture points used in this protocol consisted of:

Qu Gu (CV 2)
Heng Gu (Ki 11)
Qi Hai (CV 6)
Tai Xi (Ki 3)

Supplementation method was used with medium stimulation on all points except *Tai Xi* which was drained with strong stimulation. All points were stimulated until an aching or distention was felt, and it was recommended that the patient empty their bladder before having the treatment. All needles were retained for 30 minutes. The treatment was given one time per day, and 10 times equaled one course of treatment. On average, the patients received two courses of treatment.

Study outcomes:

Of the 83 cases, 41 cases were cured (49.38%), 31 cases got marked improvement (37.37%), six cases got some improvement (7.23%), and five cases got no improvement (6.02%). Thus, the total amelioration rate was 93.98%.

4. From “The Use of Acupuncture on the Yin & Yang Spring Vessels in the Treatment of 32 Cases of Pediatric Enuresis” by Zhang Hui-ping, *An Hui Zhong Yi Xue Yuan Bao (Academic Journal of the Anhui College of Chinese Medicine)*, 2000, #4, p. 43-44

Cohort description:

The total of 62 patients enrolled in this study were randomly divided into two groups—a treatment group and a comparison group. The treatment group of 32 cases included 12 males and 20 females. The age of the patients ranged from 4-20 years old. The course of disease in this group ranged from three months to 17 years. The comparison group of 30 cases included 13 males and

17 females. The age of the patients in this group ranged from 4-12 years old, and the course of disease ranged from 1-9 years.

Treatment method:

All members of the treatment group received acupuncture along the *yin qiao mai* and *yang qiao mai*. The points included:

Jiao Xin (KI 8) unilaterally
Fu Yang (BL 59) unilaterally
Zan Zhu (BL 2) bilaterally

Two-inch, 28-gauge needles were used. *Jiao Xin* on the left was drained, and *Fu Yang* on the right was supplemented. At *Zan Zhu*, even supplementing-even draining was used. The needles were retained for 30 minutes, and each afternoon the treatment was given one time. Seven days equaled one course of treatment.

All members of the comparison group received acupuncture at the following points:

He Gu (LI 4) bilaterally
Nei Guan (Per 6) bilaterally

These points were needled with even supplementing-even draining hand technique. This treatment was given one time per day, and seven days equaled one course of treatment. In addition, nine grams of *Shi Chang Pu* (Rhizoma Acori Tatarinowii) and three grams of *Lian Zi* (Semen Nelumbinis) were decocted and administered each day.

In addition to receiving the above treatments both groups were counseled and given suggestions on how to prevent enuresis. These included avoiding becoming overtired, not eating or drinking too many liquids at dinner, urinating before sleep, having the family set an alarm to wake the child, and, for older children, having them relax and making sure they are not ashamed or nervous about their problem.

Study outcomes:

The following table shows the outcomes of the treatment and comparison groups.

GROUP	NUMBER	CURED	IMPROVED	NOT IMPROVED	CURATIVE EFFECT	AMELIORA- TION RATE
Treatment	32	32	0	0	100%	100%
Comparison	30	1	28	1	3.3%	97%

5. From “The Treatment of 10 Cases of Pediatric Enuresis with Acupuncture Given at Specific Times” by Huang Dai-wang, *Shang Hai Zhen Jiu Za Zhi (Shanghai Journal of Acupuncture & Moxibustion)*, 2000, #6, p. 32

Cohort description:

Of the 10 cases in this study, five were male and five were female. The youngest was five years old, and the oldest was 12 years old. The shortest course of disease was one year and the longest was 10 years.

Treatment method:

Yi Niao (N-LE-49, an extra-channel acupoint located on the pinky finger of the hand) was needled with a 13 millimeter needle to a depth of 2-3 *fen*. This treatment was given between 17:00-19:00 hours (5-7 P.M.). The needles were retained for 15 minutes, and three treatments equaled one course.

Study outcomes:

Six cases were judged cured and four cases improved. Therefore, the total effectiveness rate was 100%.

Discussion:

Dr. Huang decided to give acupuncture treatments during the time of day that corresponds to the kidney channel. The doctor said the results of this method are very good when combined with *Yi Niao* which has the functions of strengthening the bladder's ability to contract, warm, and secure the lower origin, and, therefore, stop enuresis.

6. From “The Treatment of 114 Cases of Pediatric Enuresis with Needle Embedding Technique” by Li Nan-an, *Shang Hai Zhen Jiu Za Zhi (Shanghai Journal of Acupuncture & Moxibustion)*, 2002, #1, p. 10

Cohort description:

Altogether, there were 114 cases of pediatric enuresis enrolled in this trial. No other description was offered.

Treatment method:

Acupuncture points in this protocol consisted of:

Guan Yuan (CV 4)

Zhong Ji (CV 3)

San Yin Jiao (Sp 6) or *Ming Men* (GV 4)

Lie Que (Lu 7)

For chronic enuresis, *Chang Qiang* (GV 1) was used as an alternative point. The needles were inserted at a 15° angle. If done correctly, there was no pain or discomfort and the needle was then secured in place. The needle was kept in place for 5-7 days. This was defined as a single treatment. Five treatments equaled one course of therapy.

Study outcomes:

Seventy-six cases (66.67%) were cured, 22 cases (19.30%) markedly improved, 10 cases (8.77%) improved, and six cases (5.26%) did not improve. Thus, the total amelioration rate was 94.74%. Twenty-six cases were cured after embedding the needle one time, and 56 cases were cured after embedding the needle five times.

7. From "A Summary on the Effectiveness of Acupuncture Point Imbedded Needle Therapy in the Treatment of 48 Cases of Enuresis" by Dian Yong *et al.*, *Jiang Xi Zhong Yi Yao (Jiangxi Chinese Medicine & Medicinals)*, 2002, #4, p. 39

Cohort description:

Among these 48 patients, there were 27 males and 21 females. The youngest patient was four years old, and the oldest was 19 years old. The longest course of disease was 15 years, and the shortest was one half year. All these patients presented with enuresis one or more times per night. The enuresis was frequently accompanied by devitalized essence spirit, lumbar and knee

soreness and encumbrance, insomnia, profuse dreams, fatigue, lack of strength in the limbs, decreased appetite, and a sallow yellow facial complexion.

Treatment method:

San Yin Jiao (Sp 6) was embedded with a needle using tweezers until a sensation of soreness or numbness was felt in the whole body. The needle was imbedded 0.5-1 centimeters deep, flat against the body, and secured in place. This treatment was given one time every three days (alternating sides), and two times equaled one course of therapy. This needle was pressed by the patient's finger one time every half day for one minute to improve its effects.

Study outcomes:

Cure was defined as the enuresis and accompanying symptoms disappearing and not recurring for one year. Thus 42 cases were judged cured. Obvious improvement meant that, after treatment, the enuresis was obviously reduced in frequency so that the child had enuresis occasionally 1-2 times per month. In addition, all other symptoms were basically resolved. Thus four cases were judged obviously improved. No improvement was defined as no change in the patient's symptoms after treatment. Based on this criterion, two cases registered no improvement. Therefore, the total amelioration rate was 95.9%.

8. From "Clinical Experience Using the Acupuncture Point *Shao Fu* (Ht 8) to Treat 85 Cases of Pediatric Enuresis" by

Chen Xue-chao, *Tian Jin Zhong Yi (Tianjin Chinese Medicine)*, 1995, #3, p. 32

Cohort description:

Eighty-five cases of pediatric enuresis were included in this study, all of whom were out-patients. All patients were between the ages of 4-13 years old. Twenty-six were female and 59 were male. The course of the disease was between 3-9 years. Forty of these cases were due to lower origin vacuity cold, 29 cases were due to spleen-lung qi vacuity, 10 cases were due to liver channel damp heat, and six cases were not pattern discriminated.

Treatment method:

Shao Fu (Ht 8) was needled bilaterally. The needle was inserted to a depth of 0.3-0.5 inches. Supplementation method was used and the needle was stimulated by hand for one minute. After the arrival of qi, the needle was quickly removed and not retained. After the needle was removed, the point was pressed. Each day, one such treatment was given, and 10 consecutive treatments equaled one course. Patients received 1-2 courses of treatment.

Study outcomes:

The following table shows the outcome of the above 85 cases of pediatric enuresis.

SEVERITY	NUMBER	CURED	IMPROVED	NOT IMPROVED
Mild	25	23 (92%)	2 (8%)	N/A
Medium	16	6 (38%)	9 (56%)	1 (6%)
Severe	44	25 (57%)	17 (39%)	2 (5%)
Total	85	54 (64%)	28 (33%)	3 (3%)

Discussion:

Dr. Chen says that they have gotten good results for many years using acupuncture at *Shao Fu* for the treatment of pediatric enuresis. The author suggests this is a good method because it is easy to do, there is little pain, and the results are good. *Shao Fu* is a point on the heart channel and has the functions of supplementing the heart and arousing the spirit. This study suggests that this point may be a valuable addition when using a multi-point protocol.

9. From “The Treatment of 88 Cases of Enuresis with the Acupuncture Point *Ji Men* (Sp 11)” by Yang Ri-he, *Bei Jing Zhong Yi Za Zhi (Beijing Journal of Chinese Medicine)*, 1988, #6, p. 40

Cohort description:

There were 88 patients in this study, 48 males and 40 females. The children were between 4-14 years old, with an average age of nine years old. The course of disease was between six months

and one year in 52 cases, 1-3 years in 33 cases, and more than three years in three cases. In those with a long course of disease, the patient may also have had a devitalized essence spirit, poor appetite, and an emaciated body. Only two cases had an organic cause to their enuresis. One case had consumption of the lumbar vertebrae, and the other case had enuresis since suffering an injury to the spine.

Treatment method:

Acupuncture was given at *Ji Men* (Sp 11) located six inches above *Xue Hai* (Sp 10). The needles were retained for 30 minutes and restimulated every five minutes. This treatment was repeated every day for seven days which equaled one course of treatment.

Study outcomes:

Seventy-four cases (84.1%) were cured, eight cases (9.1%) obviously or markedly improved, four cases (4.4%) improved, and two cases (2.4%) did not improve. Thus, the total amelioration rate was 97.6%, and both cases that did not improve were the cases with an organic cause.

Discussion:

As early as the *Zhen Jiu Da Cheng* (*The Great Compendium of Acupuncture & Moxibustion*), there have been discussions of *Ji Men*'s ability to treat enuresis. Dr. Yang says *Ji Men* has the ability to regulate the latter heaven root or spleen as well as the ability to supplement the former heaven root or kidneys. The author maintains that, when the kidneys' qi is full and sufficient, the lower origin is secure and contained and enuresis is stopped.

10. From "On Using Acupuncture Before Sleep to Treat 84 Cases of Stubborn Enuresis" by Yang Yuan-de, *Shan Xi Zhong Yi* (*Shanxi Chinese Medicine*), 1989, #11, p. 513

Cohort description:

Of the 84 patients in this study, 52 were male and 32 were female. Twelve of these cases were between 5-7 years old, 29 cases were between 8-10 years old, 35 cases were between 11-15 years old, and eight cases were between 16-18 years old. The

course of disease ranged from 2–15 years. Patients were only included in this study if they had previously been treated with herbal medicine or acupuncture-moxibustion without success.

Treatment method:

The main acupoints in this protocol consisted of:

Zhong Ji (CV 3)

San Yin Jiao (Sp 6)

Auxiliary points included:

Da He (Ki 12)

Bai Hui (GV 20)

Tai Xi (Ki 3)

Treatment was given 1-2 hours before sleep. All points were retained for 10-15 minutes. The points were stimulated every five minutes using the supplementation method.

Study outcomes:

All patients were cured in 3-15 treatments. Therefore, the total cure rate was 100% and there were no recurrences in any of these cases at six month and one year follow-up visits.

Discussion:

According to the Chinese author, the treatment principles that should be used to treat enuresis are to supplement and boost the kidney qi and secure and constrain the lower origin. The author recommended to not retain the needles for very long (10-15 minutes) and to stimulate the needles once every five minutes. *Zhong Ji* is the intersection point of the conception vessel and the three yin channels of the legs and is also the alarm point of the bladder. *Da He* is an important point on the kidney channel located on the abdomen. If the patient felt a sensation radiate to the genital area when these points were stimulated, there was a better clinical effect. *San Yin Jiao* is an important point on the spleen channel but is also the intersection point of the three yin channels of the leg. This point is useful in treating diseases of the urinary system of both men and women and is frequently used in the

treatment of stubborn enuresis. *Bai Hui* has the function of supplementing the central qì. *Tai Xi* is the source point on the kidney channel.

11. From “Acupuncture of *Chang Qiang* (GV 1) as the Main Method for Treating Enuresis” by Ye Chang-qing, *Zhe Jiang Zhong Yi Za Zhi (Zhejiang Journal of Chinese Medicine)*, 1991, #1, p. 38

Cohort description:

There were 136 cases in this study.

Treatment method:

The main point in this protocol was *Chang Qiang* (GV 1). Additional points were divided into two groups which were used alternately. These two groups were:

- A. *Qi Hai* (CV 6), *Guan Yuan* (CV 4), and *Zu San Li* (St 36)
- B. *Ba Liao* (Bl 31-34), *Shen Shu* (Bl 23), and *San Yin Jiao* (Sp 6)

All points were stimulated with even supplementing-even draining technique or electroacupuncture. Moxibustion may or may not have also been added. Treatment was given every day or every other day, and 7-10 days equaled one course of treatment.

Study outcomes:

After 1-3 courses of treatment, 90 cases were cured, 32 cases improved, and 14 cases did not improve.

Moxibustion

1. From “Observations on & Results of Using the Method of Moxibustion to Treat 430 Cases of Pediatric Enuresis” by Li Guo-shi *et al.*, *Shen Zhen Zhong Xi Yi Jie He Za Zhi (Shenzhen Journal of Integrated Chinese-Western Medicine)*, 1998, #1, p. 18 & 20

Cohort description:

The table on page 131 shows the sex, age, disease duration, and

severity of condition of the 430 patients enrolled in this study. All 430 cases had enuresis for more than three months, and all cases manifested with scanty intake of food and fluids, emaciation, and poor memory.

Treatment method:

Acupoints moxaed in this protocol consisted of:

Shen Shu (Bl 23)
Pang Guang Shu (Bl 28)
Ji Men (Sp 11)
San Yin Jiao (Sp 6)

The above points were moxaed with a moxa pole composed of:

Ai Ye (Folium Artemisiae Argyi), 500g
Chen Xiang (Lignum Aquilariae), 50g
Ru Xiang (Olibanum), 50g
Chuan Shan Jia (Squama Manitis), 50g
Rou Gui (Cortex Cinnamomi), 50g
Ren Shen (Radix Ginseng), 50g
She Xiang (Moschus), a small, unspecified amount

After the moxa pole was lit, it was held above the region of the acupuncture point. Moxibustion was done each night before bed, and five times equaled one course of treatment.

Study outcomes:

Cure was defined as no enuresis or other accompanying symptoms after two courses of treatment and no recurrence on follow-up for more than half a year after treatment was stopped. Basically cured meant that there was no enuresis or other symptoms after three courses of treatment but there were one or two recurrences on follow-up for more than half a year after treatment was suspended. However, the enuresis was again eliminated by further treatment. The table on page 132 shows the outcomes based on these criteria.

AGE OF CHILD IN YEARS								COURSE OF DISEASE IN YEARS									
SEVERITY	TOTAL #	5-10		11-15		16-18		0.3-1		2-3		3-6		7-9		10-14	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
MILD	337	183	39	82	23	9	1	161	33	61	28	38	7	9	3	5	1
SEVERE	93	47	18	19	5	4	0	41	9	13	7	11	6	4	2	1	0
TOTAL	430	230	57	101	28	13	1	202	42	74	35	49	13	13	5	6	1

AGE OF PATIENT IN YEARS	SEVERITY	NUMBER OF CASES	CURED (%)	BASICALLY CURED (%)	MEAN LENGTH OF TREATMENT IN DAYS
5-10	Mild	222	158 (71.2)	64 (28.8)	4.3 ± 1.34
	Severe	65	42 (64.62)	23 (35.38)	11.26 ± 0.87
11-15	Mild	105	101 (95.23)	4 (4.73)	4.15 ± 0.24
	Severe	24	21 (87.5)	3 (12.5)	6.78 ± 0.42
16-18	Mild	10	10 (100)	N/A	2.44 ± 0.93
	Severe	4	4 (100)	N/A	3.38 ± 1.75

Eighty-seven cases had enuresis for more than three years. Of these, 82 were cured and five cases were basically cured for a total amelioration rate of 94.25%. Three hundred forty-three cases had enuresis for less than three years. Of these, 254 were cured and 89 were basically cured for a total amelioration rate of 74.05%.

Discussion:

According to the Chinese authors of this study, *Ji Men* and *San Yin Jiao* were used in this protocol in order to regulate the three yin and supplement the root of latter heaven essence. Moxibustion was performed on *Shen Shu* and *Pang Guang Shu* to warm and supplement the root of former heaven essence. Moxa on these points treats the two mechanisms of vacuity weakness that are so common in enuresis. In addition, the bladder's function of qi transformation is strengthened. If the kidney qi is sufficient, the lower origin is secured and contained and the bladder and kidney's ability to store and contain the urine is normal. Therefore this method is effective at treating the root of this condition.

2. From "The Treatment of 45 Cases of Pediatric Enuresis with Moxibustion" by Wang Hui-sheng, *Liao Ning Zhong Yi Za Zhi* (*Liaoning Journal of Chinese Medicine*), 1993, #10, p. 39

Cohort description:

There were a total of 45 patients in this study, 21 males and 24 females. These patients were between 3-18 years old, and the course of disease ranged from three months to 10 years in length. The frequency and severity was either mild (three times per night) to severe (3-5 times per night). All these patients had the following signs and symptoms accompanying their enuresis:

an emaciated body, lack of strength, reduced appetite, aversion to cold, cold limbs, chilly pain in the lower abdomen, a pale tongue with white fur, and a slow, deep pulse.

Treatment method:

Based on the treatment principles of warming the kidneys, securing and astringing, the main points moxaed were:

Qi Hai (CV 6)

Guan Yuan (CV 4)

San Yin Jiao (Sp 6)

Auxiliary points included:

Shen Shu (Bl 23)

Zu San Li (St 36)

Treatment was given once per day, and seven treatments equaled one course.

Study outcomes:

Twenty-six cases (57%) were cured, 13 cases (29%) markedly improved, five cases (11%) improved, and one case (2%) did not improve. Thus, the total amelioration rate was 98%.

Acupuncture & moxibustion

1. From "The Treatment of 50 Cases of Pediatric Enuresis with Warm Needle Moxibustion" by Xiu Wei-guo *et al.*, *Jiang Su Zhong Yi* (*Jiangsu Chinese Medicine*), 2001, #3, p. 27

Cohort description:

There were 50 cases included in this study, 28 males and 22 females. Thirty-eight cases were 5-9 years old, and 12 cases were 10-13 years old. The TCM pattern discrimination was kidney qi insufficiency in 46 cases, and spleen-lung qi vacuity in four cases.

Treatment method:

The main acupoints used in this protocol were:

Guan Yuan (CV 4)
San Yin Jiao (Sp 6)
Zhong Ji (CV 3)
Pang Guang Shu (Bl 28)

Two of these main points were chosen each time and the points were alternated each time. If there was kidney qi insufficiency, *Shen Shu* (Bl 23) and *Tai Xi* (Ki 3) were added. If there was lung-spleen qi vacuity, *Zu San Li* (St 36) and *Qi Hai* (CV 6) were added. Each point was stimulated for 30 seconds to one minute after insertion of the needle. When stimulating *Qi Hai* and *Zhong Ji*, the patient felt distention radiating into the genital area. When stimulating *San Yin Jiao*, the results were better if the patient felt distention radiating up the leg. One inch of moxa was then put on the end of each needle and cardboard was put on the skin to prevent burning. Two or three moxa cones were used on each point, and the needles were retained for 30 minutes. One treatment was given every other day, and 10 treatments equaled one course of therapy. A 3-5 day interval was allowed between successive courses of treatment.

Study outcomes:

Thirty-one cases were cured, 16 cases improved, and three cases did not improve. Therefore, the total amelioration rate was 94%.

2. From "The Treatment of 31 Cases of Pediatric Enuresis with Acupuncture & Moxibustion" by Zhao Zeng-cui & Xue Fang, *Guilin Zhong Yi Yao (Guilin Chinese Medicine & Medicinals)*, 2001, #3, p. 49

Cohort description:

There were 21 males and 10 females all between the ages of 3-12 years old included in this clinical trial. The majority of these patients were eight years old.

Treatment method:

The main aupoints used in this protocol were:

Qi Hai (CV 6)
Bai Hui (GV 20)

San Yin Jiao (Sp 6)

Pang Guang Shu (Bl 28)

If there was kidney qi vacuity, *Guan Yuan* (CV 4) and *Shen Shu* (Bl 23) were added. If there was spleen-lung qi vacuity, *Lie Que* (Lu 7), *Zu San Li* (St 36), and *Pi Shu* (Bl 21) were added.

All these points were stimulated for 30 seconds after being needled. When the qi was obtained, warming moxa was added to the points. Supplementation method was used when stimulating *Qi Hai*, and the patient was expected to feel distention radiating into the genital area. The same stimulation method was used with *Pang Guang Shu*, but the patient was expected to feel distention radiating to the abdominal region. When stimulating *San Yin Jiao*, the authors said the results were better if the patient felt distention radiating up to the knee. When stimulating *Bai Hui*, the even supplementing-even draining method was used. Treatment was given once per day, and seven consecutive days equaled one course of treatment. Typically, this treatment was continued for 2-3 courses.

Study outcomes:

After one course of treatment, 13 cases were cured, and, after two courses, 14 more cases were cured. The patients that were cured received two treatments after the enuresis had stopped in order to secure the treatment results. There was no recurrence of enuresis in these 27 patients after six months. Four cases were improved. Therefore, the total amelioration rate was 100%.

3. From “The Treatment of 68 Cases of Enuresis of the Vacuity Type with Acupuncture & Moxibustion” by Yang Jian-hua, *Hu Nan Zhong Yi Yao Dao Bao (The Hunan Instructional Bulletin of Chinese Medicine & Medicinals)*, 2001, #5, p. 232

Cohort description:

There were 40 males and 28 females, all between the ages of 5-8 years old, included in this study. The TCM pattern discrimination was kidney qi insufficiency in 43 cases and spleen qi vacuity in 25 cases.

Treatment method:

The main acupoint used in this protocol was:

Guan Yuan (CV 4)

Auxiliary points included:

Qi Hai (CV 6)

San Yin Jiao (Sp 6)

He Gu (LI 4)

Bai Hui (GV 20)

Supplementation method was used on all these points. When stimulating *Qi Hai* and *Guan Yuan*, the patient was expected to feel distention radiating into the genital area. When stimulating *San Yin Jiao*, the results were better if the patient felt distention radiating up to the knee. After insertion of needles, all points were stimulated for two minutes. Then the needles were re-stimulated every three minutes after the initial stimulation. After repeating this three times, the needles were removed. Then the doctor used moxibustion on *Bai Hui* for five minutes. This treatment was done once per day, and 10 days equaled one course of treatment. After two courses of treatment, the results were analyzed.

Study outcomes:

Thirty-eight cases (47.01%) were cured, 28 cases (41.76%) improved, and eight cases (11.76%) did not improve. Hence, the total amelioration rate was 88.77%.

4. From “Clinical Observations on Treating 62 Cases of Pediatric Enuresis with Acupuncture” by Bao Zhao-gui, *Zhong Yi Za Zhi (Journal of Chinese Medicine)*, 1993, #1, p. 26

Cohort description:

There were 62 cases in this study, 37 males and 25 females. The patients were between 5-17 years old, with the majority of the patients between 6-10 years old. The course of disease was between one half to 12 years. Thirty-five cases had enuresis 1-2

times per night, 17 cases had enuresis 3-4 times per night, and 10 cases had enuresis one time per night.

Treatment method:

The acupoints used in this protocol were:

Tong Li (Ht 5)

Da Zhong (Ki 4)

Guan Yuan (CV 4)

After the qi was obtained, *Tong Li* was drained and *Da Zhong* was supplemented. Then the needles were retained for 10-15 minutes. After this acupuncture, moxibustion was used for 3-5 minutes on *Guan Yuan*. This was done one time per day, and six days equaled one course of treatment.

Study outcomes:

Thirty-five cases were cured, 21 cases markedly improved, four cases improved, and two cases did not improve. Therefore, the total amelioration rate was 96.8%.

Discussion:

According to Dr. Bao, children with enuresis often have a vacuous constitution. According to the book, *Bai Zheng Fu (Ode on the Hundreds of Symptoms)*, "[For] tiredness to speak and liking to lie down, *Tong Li* and *Da Zhong* brightens [these]." In other words, these two points are able to brighten the spirit and treat these conditions. The author uses this concept to treat enuresis because children with enuresis are often heavy sleepers and difficult to wake up. The treatment of the kidney and heart channels with the points above promotes the interaction between the heart and the kidney and restrains the bladder. Moxibustion on *Guan Yuan* makes the kidneys exuberant and boosts the kidney qi, securing and containing the lower origin.

5. From "The Treatment of 38 Cases of Enuresis with Acupuncture & Moxibustion on the Point *Hui Yin* (CV 1)" by Xu Yi-jing *et al.*, *Si Chuan Zhong Yi (Sichuan Chinese Medicine)*, 1988, #5, p. 46

Cohort description:

The patients in this study were between six and 23 years old, and the course of the disease ranged from three months to 12 years.

Treatment method:

The patient lied down on his or her back with both knees flexed. After disinfecting the point *Hui Yin* (CV 1), it was needled perpendicularly to a depth of 1-1.5 inches. Then moxibustion was applied for five minutes until the patient felt heat coursing upward to the face and head. Then the needle was inserted at a 15° angle under the skin forward, after which it was moxaed for another five minutes. Now the patient was supposed to feel a warm sensation in their lower abdomen. Finally, the needle was inserted at a 15° angle under the skin backward, and again the point was moxaed for five minutes. At this time, the patient was supposed to feel warmth in their lumbar region. One treatment lasted approximately 20 minutes, and this treatment was given once per day for three times. This equaled one course.

Study outcomes:

All 38 cases in this study were cured in 1-2 courses of treatment. Therefore, the cure rate was 100%.

Discussion:

Hui Yin is the meeting place of the conception vessel, the sea of yin, the governing vessel, the sea of yang, and chong mai, the sea of blood. Therefore, acupuncture and moxibustion on this point can regulate yin and yang and harmonize qi and blood as well as having an effect on the cerebral cortex.

Comparing acupuncture to other forms of treatment

1. From "A Comparison Study of Acupuncture & Massage and Chinese Medicinals in the Treatment of Occult Spina Bifida Enuresis" by Xue Hong & Hu Jun-xia, *Liao Ning Zhong Yi Za Zhi* (*Liaoning Journal of Chinese Medicine*), 2001, #8, p. 494

Cohort description:

All 60 patients enrolled in this clinical trial were diagnosed with enuresis due to occult spina bifida via x-ray. These patients were randomly divided into two equal groups—an acupuncture massage treatment group and a Chinese medicine comparison group. Of these patients, 32 were male and 28 were female. The ages of the patients ranged from 5-23 years old.

Treatment method:

All members of the treatment group received acupuncture based on the principles of supplementing the kidneys, securing and containing. The main acupoints used in this study consisted of:

Guan Yuan (CV 4)

Shen Shu (BL 23)

Pang Guang Shu (BL 28)

Qi Jie Gu (Seven Joints & Bones, a pediatric tuina “point” located on the posterior midline from *Ming Men*, GV 4, to the tip of the coccyx)

The area where the spina bifida was located

Supplementation method was used on *Guan Yuan*, *Shen Shu*, and *Pang Guang Shu* and the needles were retained for 15 minutes. These needles were stimulated two times throughout the treatment. After acupuncture, the lesser thenar eminence was used to rub *Qi Jie Gu* until the area was warm. This last method was meant to quicken the blood and dispel stasis, relax and disinhibit the local area. After this, the area of the occult spina bifida was pressed and stretched. This treatment was given every other day, and 10 treatments equaled one course of therapy. It was also suggested that all other treatments for this disorder be discontinued during the treatment period.

All members of the comparison group received *Gong Ti Wan* (Dyke-Strengthening Pills) based on the same treatment principles as above. These pills consisted of:

Shu Di (cooked Radix Rehmanniae)

Tu Si Zi (Semen Cuscutae)

Bai Zhu (Rhizoma Atractylodis Macrocephalae)

Wu Wei Zi (Fructus Schisandrae)

Fu Ling (Poria)

Yi Zhi Ren (Fructus Alpiniae Oxyphyllae)

Bu Gu Zhi (Fructus Psoraleae)

Fu Zi (Radix Lateralis Praeparatus Aconiti Carmichaeli)

Jiu Cai Zi (Semen Alli Tuberosi)

If there was a bright white facial complexion, fatigued spirit, and lack of strength, *Huang Qi* (Radix Astragali) and *Tai Zi Shen* (Radix Pseudostellariae) were added. For poor appetite, *Chen Pi* (Pericarpium Citri Reticulatae) and *Gu Ya* (Fructus Germinatus Oryzae) were added. If there was long, clear urination, chilled limbs, and aversion to cold, *Jin Ying Zi* (Fructus Rosae Laevigatae) and *Gui Zhi* (Ramulus Cinnamomi) were added.

One packet of these medicinals were decocted in water and administered per day, and one month of this treatment equaled one course of therapy.

Study outcomes:

In the treatment group, 16 cases were cured, 12 cases improved, and two cases had no improvement. The total amelioration rate in this group was 93.3%. In the comparison group, five cases were cured, 17 cases improved, and eight cases had no improvement. The total amelioration rate of this group was 73.4%.

2. From “A Clinical Study & Comparison on the Use of Varied Forms of Acupuncture & Massage for the Treatment of Occult Spina Bifida Enuresis” by Hu Jun-xia *et al.*, *Liao Ning Zhong Yi Za Zhi* (Liaoning Journal of Chinese Medicine), 2001, #5, p. 494

Cohort description:

All 60 patients in this study were diagnosed with enuresis due to occult spina bifida via x-ray. These patients were randomly divided into two equal groups—an acupuncture and massage treatment group and a Chinese medicine comparison group. Of these patients, 31 were male and 29 were female. The ages of the patients ranged from 5-23 years old.

Treatment method:

The main acupoints for all members of the treatment group in

order to supplement the kidneys, secure and contain were:

Guan Yuan (CV 4)

Shen Shu (BI 23)

Pang Guang Shu (BI 28)

Qi Jie Gu (Seven Joints & Bones)

The area where the spina bifida was located

Supplementation method was used on *Guan Yuan*, *Shen Shu*, and *Pang Guang Shu*, and the needles were retained for 15 minutes. The needles were stimulated two times throughout the treatment. After acupuncture, the lesser thenar eminence was used to rub *Qi Jie Gu* until it was red. After this, the area of the occult spina bifida was pressed and stretched.

For members of the comparison group, the main points were:

Shen Shu (BI 23)

Qi Jie Gu (Seven Joints & Bones)

The area where the spina bifida was located

Supplementation method was used at *Shen Shu*, and the needles were retained for 15 minutes. However, the needles were stimulated only one time throughout the treatment. After acupuncture, *Qi Jie Gu* was rubbed with the lesser thenar eminence until red, and the area of the spina bifida was pressed and stretched.

In both groups, treatment was given every other day, and 10 days equaled one course of treatment. It was also suggested that all other treatments for this disorder be discontinued during the treatment period.

Study outcomes:

In the treatment group, 16 cases were cured, 10 cases improved, and four cases had no improvement. The total amelioration rate in this group was 86.67%. In the comparison group, 15 cases were cured, 12 cases improved, and three cases had no improvement. The total amelioration rate in this group was 90.0%.

3. From "The Treatment of 36 Cases of Enuresis [By Comparing Acupuncture] to the Combination of Acupuncture and *Zhi Yi San* (Stop Loss [of Urine] Powder)" by Yu Qing-zhi & Yu Yang, *Zhong Yi Wai Zhi Za Zhi (The Chinese Medicine Journal of External Treatments)*, 2002, #6, p. 55

Cohort description:

The acupuncture group consisted of 10 cases 3-5 years old and 26 cases 6-15 years old. The Chinese medicine group consisted of 18 cases all between the ages of 3-15 years old.

Treatment method:

All patients in both groups took the Chinese medicinals, but the first group also received acupuncture in addition to the herbs. Acupoints consisted of the following points:

Guan Yuan (CV 4)

Zhong Ji (CV 3)

San Yin Jiao (Sp 6)

Zu San Li (St 36)

Bai Hui (GV 20)

Zu Yun Gan Qu (Foot Motor Sensory Area on the scalp), bilateral

The needles were retained in these points for 30-40 minutes. Electroacupuncture was used on the scalp points. This treatment was done one time each day, and 10 days equaled one course of treatment.

The Chinese medicinal formula taken by both the acupuncture and the Chinese medicine group was composed of:

Fu Zi (Radix Lateralis Praeparatus Aconiti Carmichaeli)

Rou Gui (Cortex Cinnamomi)

Yi Zhi Ren (Fructus Alpiniae Oxyphyllae)

Tu Si Zi (Semen Cuscutae)

Wu Yao (Radix Linderae)

Shan Yao (Radix Dioscoreae)

Long Gu (Os Draconis)

Wu Wei Zi (Fructus Schisandrae)

Mu Li (Concha Ostreae)

Shi Hu (Herba Dendrobii)

Gan Cao (Radix Glycyrrhizae)

The dosages of the above medicinals were based on the age and size of the child. These medicinals were decocted in water and taken in three divided doses per day, with 10 days equaling one course of treatment.

Study outcomes:

In the acupuncture group, 28 cases were cured, five cases markedly improved, two cases improved, and one case did not improve. The total amelioration rate in this group was 97.22% and the cure rate was 77.78%. In the Chinese medicine group, five cases were cured, 11 cases improved, and two cases did not improve. The total amelioration rate in this group was 88.89% and the cure rate was 27.78%.

4. From “Comparing the Treatment Results of Using Scalp Acupuncture, Hand Acupuncture & Chinese Medicinals in the Treatment of 129 Cases of Pediatric Enuresis” by Huang Wei *et. al.*, *Zhen Jiu Lin Chuang Za Zhi (Clinical Journal of Acupuncture & Moxibustion)*, 1994, # 6, p. 37

Cohort description:

Among the 129 cases enrolled in this clinical trial, there were 73 males and 56 females. These patients were as young as three years old and as old as 14. Eighty-one cases were less than eight years old, 42 cases were between 8-11 years old, and six cases were more than 11 years old. The course of disease was one year or less in 37 cases, 1-5 years in 71 cases, and more than five years in 21 cases. Sixty-one cases had enuresis on average one time per night, 43 cases had enuresis every other night, and 25 cases had enuresis three times per week. These 129 cases were randomly divided into three groups – a treatment group of 65, a comparison group #1 of 32, and a comparison group #2 also of 32.

Treatment method:

All members of the treatment group received scalp acupuncture at *Zu Yun Gan Qu* (Foot Motor Sensory Area) bilaterally. This “point” is located on the crown of the head one centimeter

anterior from the center on the midline. The point is three centimeters parallel to the midline anterior and posterior from this point. This area corresponds to the transverse line on the crown of the head found in standardized international scalp acupuncture. A 26-28 gauge, 1.5-2 inch needle was used. After a quick insertion below the skin, the needle was slowly moved to a depth of three centimeters transversely. The needle was stimulated at a rate of 200 times per minute, and this was performed every 3-5 minutes. The needles were retained for 5-10 minutes and were removed after the third time the needles were manipulated. This treatment was given every other day, and 10 treatments equaled one course.

All members of comparison group #1 received hand acupuncture. *Ye Niao Dian* (Enuresis Point) was needled bilaterally using a half inch, 30 gauge filiform needle. The needles were manipulated until the child felt distention and then the needles were retained for 30-45 minutes. The needles were restimulated every 15 minutes. This treatment was administered one time every other day, and 10 times equaled one course of treatment.

All members of comparison group #2 were administered the following Chinese medicinals:

Sang Piao Xiao (Ootheca Mantidis)
Yuan Zhi (Radix Polygalae)
Shi Chang Pu (Rhizoma Acori Tatarinowii)
Long Gu (Os Draconis)
Fu Shen (Sclerotium Pararadicis Poriae Cocos)
Ren Shen (Radix Ginseng)
Dang Gui (Radix Angelicae Sinensis)
 vinegar mix-fried *Gui Ban* (Plastrum Testudinis)

Three to 10 grams of each medicinal was used according to the age of the patient. One packet of these medicinals was decocted in water and administered per day, with 10 days equaling one course of treatment.

Study outcomes:

The following table shows the outcomes of these three groups.

	NUMBER OF CASES	CURE (%)	IMPROVEMENT (%)	No IMPROVEMENT (%)	AMELIORATION RATE (%)
Treatment group	65	53 (81.54)	10 (15.38)	2 (3.08)	63 (96.92)
Comparison group #1	32	20 (62.50)	7 (21.88)	5 (15.62)	27 (84.38)
Comparison group #2	32	9 (28.12)	13 (40.63)	10 (31.25)	22 (68.75)

5. From “A Comparison Study & the Clinical Results of Treating Kidney Qi Insufficiency Pattern Enuresis with Moxibustion on Medicinal Cakes and Acupuncture” by Jiang He-xin, *Shang Hai Zhong Yi Yao Za Zhi (Shanghai Journal of Chinese Medicine & Medicinals)*, 1998, #5, p. 28-29

Cohort description:

There were a total of 220 patients with enuresis in this two-wing, comparison study. These 220 patients were randomly divided into a moxibustion on medicinal cake group and an acupuncture group. The moxibustion on medicinal cake group consisted of 120 cases, 67 males and 53 females, with an average age of nine years old. The course of disease in this group ranged from four months to 10 years. The acupuncture group was comprised of 100 cases, 54 males and 46 females, with an average age of 8.5 years old. The course of disease in this group ranged from five months to 11 years. All these patients had enuresis every night or every other night. In severe cases, they had enuresis multiple times per night. Their urine was copious in amount and clear. When asleep, the child was not easy to wake up. Other signs and symptoms included a bright white facial complexion, devitalized essence spirit, a cold body and chilled limbs, a pale tongue with white fur, and a deep, slow, forceless pulse. Urine tests were normal in all cases, and x-ray showed no abnormalities. Children had to be more than three years old to be enrolled in this study.

Treatment method:

The medicinal cakes that were used on all members of the moxibustion on medicinal cakes group were made from unspecified amounts of:

Fu Zi (Radix Lateralis Praeparatus Aconiti Carmichaeli)

Rou Gui (Cortex Cinnamomi)

Ding Xiang (Flos Caryophylli)

These three medicinals were ground into powder. This powder was then mixed with 70% alcohol to make the medicinal cakes which were 2.5 centimeters in diameter and one half centimeter thick. The circular medicinal cakes were placed on one of the following points:

Guan Yuan (CV 4)

Ming Men (GV 4)

Then a moxa cone 1.8 centimeters in diameter, 1.5 centimeters high, and 1.2 grams in weight was burnt on top of this cake. This process was then repeated each treatment, alternating between the two points, and one treatment was given every other day. Each time, five cones were used on each point, and six treatments equaled one course.

The acupoints used on all members of the acupuncture group were also:

Guan Yuan (CV 4)

Ming Men (GV 4)

One of these two points was needled each treatment and then the other point was needled the following treatment. The needles were retained for 20 minutes. The points were stimulated every five minutes, and one treatment was given every other day. Six days equaled one course of treatment.

Study outcomes:

In the moxibustion on medicinal cakes group, 91 cases were cured, 24 cases improved, and five cases had no improvement. The total amelioration rate in this group was 96%. In the acupuncture group, 42 cases were cured, 30 cases improved, and 28 cases had no improvement. The total amelioration rate in this group was 72%.

6. From “A Comparative Study on the Treatment of Pediatric Enuresis with Moxibustion & Acupuncture” by Xu Tian-bin,
Zhen Ci Yan Jiu (Acupuncture Research), 1999, #2, p. 93-94

Cohort description:

There were a total of 45 patients with enuresis included in this study. In the moxibustion group, there were 30 patients, 18 males and 12 females. The youngest child was three years old and the oldest was 14. The course of disease in this group ranged from three months to five years. In the acupuncture group, there were 15 patients, eight males and seven females. The youngest child in this group was five years old and the oldest was 13. The course of disease in this group ranged from 20 days to eight years.

Treatment method:

Both groups were treated at the same group of acupoints:

Guan Yuan (CV 4)
Shen Shu (BI 23)
San Yin Jiao (Sp 6)

In the acupuncture group, the needles were retained for 30 minutes after the qi was obtained. Supplementation method was used, and stimulation was applied one time every five minutes. In the both groups, moxibustion was used for 10 minutes on each point. In other words, the acupuncture group received acupuncture plus moxibustion, while the moxibustion group only received moxibustion. These treatments were administered one time each day in both groups, and seven days equaled one course of treatment.

Study outcomes:

In the moxibustion group, 22 cases were cured, five cases improved, and five cases had no improvement. The total amelioration rate in this group was 90.0%. In the acupuncture group, 12 cases were cured, two cases improved, and one case had no improvement. Therefore, the total amelioration rate in this group was 93.3%.

Tuina

1. From “The Treatment of Pediatric Enuresis with Rubbing the Abdomen & Spinal Pinch Pull” by Su Ping & Cheng Yun, *An Mo Yu Dao Yin (Massage & Dao Yin)*, 2002, #6, p. 54-55

Cohort description:

Among the 89 cases included in the study, 51 were male and 38 were female. The youngest child was 3.5 years old and the oldest was 10 years old. The course of enuresis was as short as one half year and as long as eight years. Nineteen cases had enuresis two times per night, 37 cases had enuresis one time per night, and 33 cases had enuresis 2-3 times per week. All 89 patients had taken Chinese medicinals without results prior to their initial assessment.

Treatment method:

Abdominal massage consisted of the patient lying on their back with their abdomen exposed and then massaging the following points:

Liang Men (St 21)
Jian Li (CV 11)
Zhong Wan (CV 12)
Tian Shu (St 25)
Qi Hai (CV 6)
Guan Yuan (CV 4)
Zhong Ji (CV 3)

For patients with kidney qi insufficiency pattern, more time was spent massaging the main points *Qi Hai*, *Guan Yuan*, and *Zhong Ji*. For patients with spleen-lung qi vacuity pattern, more time was spent massaging the main points *Jian Li*, *Zhong Wan*, and *Qi Hai*. Each point was massaged for 2-3 minutes mainly using supplementation method.

The rubbing and spinal-pinch method used talcum powder as a medium. With the child lying on their stomach and back exposed, the back was first rubbed to relax the muscles. Then the spinal column was stimulated using half circles on the midline, from top

to bottom. This was also then repeated on the left and right sides of the spine. The pressure was first light, then heavy, and this was repeated. The above method was used one time each day, and 10 times equaled one course of treatment. After a three day break, the second course of treatment was started. At the same time, practitioners made sure the following points were stimulated bilaterally for 5-6 minutes each:

Fei Shu (Bl 13)

Pi Shu (Bl 21)

Shen Shu (Bl 23)

Treatment results were measured after 1-3 courses of treatment.

Study outcomes:

Fifty-four cases were cured, 32 cases improved, and three cases did not improve. Thus, the total amelioration rate was 96.6%.

2. From "Clinical Observations on the Treatment of 78 Cases of Pediatric Enuresis with Massage" by Wang Zhi-lin & Guan Zhi-lin, *Guang Ming Zhong Yi Za Zhi (Guangming Journal of Chinese Medicine)*, 1995, #4, p. 20-21

Cohort description:

Of the 78 cases in total enrolled in this study, there were 43 males and 34 females. The children ranged in age from 4-18 years old. Sixteen cases were between the ages of 8-18, and 62 cases were less than eight years old. All 78 cases had had enuresis since infancy. Seven cases had enuresis three or more times per night, 66 cases had enuresis 1-2 times per night, and five cases had enuresis every other night.

Treatment method:

The following acupoints were massaged:

Zhong Wan (CV 12)

Qi Hai (CV 6)

Guan Yuan (CV 4)

Zhong Ji (CV 3)

Zu San Li (St 36)

San Yin Jiao (Sp 6)

Bai Hui (GV 20)

Ming Men (GV 4)

Shen Shu (Bl 23)

Pang Guang Shu (Bl 28)

Ba Liao (Bl 31-34)

With the child in the supine position, the doctor used their palm to press and massage the child's abdomen clockwise and then counter-clockwise for two minutes or approximately 100 times. Afterwards, the thumb was used to press down in the following points in the order provided for two minutes each: *Zhong Wan*, *Qi Hai*, *Guan Yuan*, and *Zhong Ji*. Next, the root of the palm was used to massage the area surrounding *Guan Yuan* for 1-2 minutes. Before performing the massage techniques, the child was asked to urinate. The pressure was at a fixed depth and force and was neither too light or too heavy. During treatment, it was important to maintain pressure on the points without moving across the skin and then afterwards relaxing.

Next, both thumbs were used to massage the following points bilaterally at the same time in the proper order for 1-2 minutes each: *Zu San Li* and *San Yin Jiao*. During this maneuver, the child may have experienced soreness, distention, or pain, all of which indicated the arrival of qi to the area. Next, *Bai Hui* was pressed and kneaded for two minutes, after which the child was asked to roll over. Using the root of the palm to knead or the lesser thenar eminence to apply the rolling method, the back region from the thorax to the waist along the bladder channel was massaged for three minutes. Then both thumbs were used to press and knead the following points bilaterally in order: *Shen Shu*, *Pang Guang Shu*, and *Ba Liao*. Each of these points was massaged for 1-2 minutes. And finally, the thumb was used to apply the effleurage method to the lumbar region in the area of *Shen Shu* and *Ming Men* as well as on the sacral region in the area of *Ba Liao* for one half minute each until there was a feeling of heat.

If the patient had a weak, vacuous body and poor appetite, the thumb was used to press and knead the following points for 1-2 minutes: *Fei Shu* (Bl 13), *Gan Shu* (Bl 18), *Pi Shu* (Bl 20), and *Wei Shu* (Bl 21). Then the pinch method was used 6-9 times from the tailbone up to *Da Zhui* (GV 14). If there was accompanying

abdominal pain and diarrhea, the method of kneading *Tian Shu* (St 25) was added. If the child had profuse dreams during sleep, then kneading *Xin Shu* (Bl 15) was added.

Each day, the child was treated one time, and each time the manipulations lasted 20-30 minutes. Seven consecutive days equaled one course of treatment.

Study outcomes:

After 1-3 courses of treatment, 65 cases (83.33%) were cured, 12 cases (15.38%) were markedly improved, and one case did not improve. In this case, the child suffered from pyelonephritis.

3. From “The Treatment of 116 Cases of Pediatric Enuresis with Spinal Pinch Pull Combined with Massage Applied to Acupuncture Points” by Zhan Jin-ran, *Ji Lin Zhong Yi Yao (Jilin Chinese Medicine & Medicinals)*, 1994, #1, p. 28

Cohort description:

Of the 116 cases included in this study, 73 were male and 43 were female. The age of these patients was between 4-6 years old in 51 cases, 7-10 years old in 39 cases, and 11-14 years old in 26 cases. In these patients, nocturnal enuresis varied from slight (once every 2-3 nights) to severe (2-3 times per night). In general, there were no other obvious symptoms.

Treatment method:

The following treatment was given one time each day, and 10 treatments equaled one course of therapy. With the thumbs and fingers, the practitioner pulled up the skin and then rolled this fold of skin progressively up along the bladder channel on the child's back until reaching *Feng Men* (Bl 12). This technique was repeated 3-5 times. After this was completed, the doctor proceeded to pinch the same area using the thumb and the first two fingers. This was repeated five times. Next, using the thumb and forefinger, the skin was pinched and rolled moving upwards along the governing vessel and the spinal column until *Da Zhui* (GV 14). This was repeated 3-5 times. This was followed by pressing and rubbing along the bladder channel by moving upwards and repeating this three times. And finally, the following points were massaged

by pressing each point 100 times:

Shen Shu (Bl 23)

Pang Guang Shu (Bl 28)

Guan Yuan (CV 4)

Zhong Ji (CV 3)

Qi Hai (CV 6)

Zu San Li (St 36)

San Yin Jiao (Sp 6)

Study outcomes:

Seventy-six cases (65.5%) were cured, 24 cases (20.7%) markedly improved, 13 cases (11.2%) improved, and three cases (2.6%) did not improve. Thus, the total amelioration rate was 97.4%.

4. From “The Treatment of 46 Cases of Pediatric Enuresis with Acupoint Massage” by Pang Cheng-ze, *Bei Jing Zhong Yi (Beijing Chinese Medicine)*, 1991, #1, p. 47-48

Cohort description:

Of the 46 cases in this study, 27 were male and 19 were female. These patients were between 6-18 years old. Four cases were between 4-5 years old, 32 cases were 6-13 years old, nine cases were 14-16 years old, and one case was 17-18 years old. The majority of cases (32 or 69.5%) were between 6-13 years old.

Treatment method:

The channels treated in this protocol consisted of the governing vessel, conception vessel, kidney channel, bladder channel, and spleen channel. The main points consisted of:

Zhong Ji (CV 3)

Guan Yuan (CV 4)

San Yin Jiao (Sp 6)

Bai Hui (GV 20)

Shen Shu (Bl 23)

Zhong Wan (CV 12)

Yin Ling Quan (Sp 9)

Ji Men (Sp 11)

Pi Shu (Bl 21)

Pang Guang Shu (Bl 28)

Auxiliary points included:

Ming Men (GV 4)

Qi Hai (CV 6)

Fu Liu (Ki 7)

Yin Gu (Ki 10)

Xue Hai (Sp 10)

Qi Chong (St 30)

Ba Liao (Bl 31-34)

The points first stimulated were those on the patients lower limbs, *i.e.*, *Fu Liu*, *Yin Gu*, *San Yin Jiao*, and *Yin Ling Quan*, with the techniques of pressing, rubbing, and pushing supplementation method. Next, the points on the governing vessel and bladder channels on the back were massaged. This included the following points which were pressed and rubbed: *Fei Shu*, *Pi Shu*, *Wei Shu*, *San Jiao Shu*, *Shen Shu*, *Pang Guang Shu*, and *Ming Men*. In addition, the spinal pinch-pull method was used from *Chang Qiang* (GV 1) to *Da Zhui* (GV 14) 3-5 times. Following this, the lumbar region of *Ba Liao* (Bl 31-34) was pushed and rubbed upwards with the root of the palm for two minutes. With the child in the supine position, the following points were pressed for one minute each using the thumb: *Zhong Ji*, *Guan Yuan*, *Zhong Wan*, and *Qi Hai*. *Qi Chong* was pressed bilaterally for two minutes using the root of the palm, and finally, *Bai Hui* was pressed and rubbed with the thumb for 1-2 minutes. The course of treatment was 10 days or less.

Study outcomes:

Forty-three cases (92.5%) were cured, two cases (4.4%) were markedly improved, and one case (2.1%) got no improvement. Therefore, the total amelioration rate was 97.9%.

Tuina combined with acupuncture

1. From "The Treatment of 23 Cases of Pediatric Enuresis with Tuina & Acupuncture" by Feng Yi, *An Mo Yu Dao Yin (Massage & Dao Yin)*, 2000, #6, p. 51.

Cohort description:

There were 23 cases in this study, 10 males and 13 females aged 5-14 years, with an average age of nine years.

Treatment method:

Tuina consisted of first using the rubbing method on *Dan Tian* (CV 4-6), *Shen Shu* (BL 23), and *Gui Wei* (GV 1). Then *Ba Liao* (BL 31-34) was rubbed and *San Yin Jiao* (Sp 6) rubbed and pressed. If there was spleen-lung qi vacuity, the pressing method was added at *Bai Hui* (GV 20), supplementation method was used on the spleen and lung channels, *i.e.*, the lateral palmar edge of the thumb and the palmar surface of the terminal phalange of the ring finger respectively, and *Wai Lao Gong* (Outer Palace of Labor, the center of the back of the hand) was rubbed. If there was liver channel depressive heat, the method of clearing the liver and small intestine channels was added as well as straight pushing *Liu Fu* (The Six Bowels, a line on the medial anterior surface of the forearm). Each of these points was massaged for approximately three minutes.

Acupuncture consisted of needling the following points:

Bai Hui (GV 20)
Guan Yuan (CV 4)
Qi Hai (CV 6)
Zhong Ji (CV 3)
San Yin Jiao (Sp 6)

If there was spleen-lung qi vacuity, *Zu San Li* (St 36) and *Tai Bai* (Sp 3) were added. If there was liver channel depressive heat, *He Gu* (LI 4) and *Tai Chong* (Liv 3) were added. After stimulation, the needles were not retained. When stimulating *Guan Yuan* and *Qi Hai*, the patient was expected to feel a sensation radiate to the genital region.

The above two methods were used together one time every other day, and 10 times equaled one course of treatment.

Study outcomes:

After three courses of treatment, 14 cases (60.87%) were cured, seven cases (30.43%) were improved, and there was no improvement in two cases (8.70%). The total amelioration rate was 91.30%.

Discussion:

The Chinese author of this study had some interesting advice for the children and their parents that is not usually given by other doctors. Dr. Feng recommended not to blame the child, to be patient, and not to stress the child. In addition, he also stressed that the volume of water must be monitored after dinner, the parents should regulate the time their child urinates, and, in the daytime, not to let the child get too tired. Before sleep it was recommended not to tell scary stories to the child and to not let the child sleep on their stomach or put their hands on their chest while lying on their back.

2. From "The Treatment of 56 Cases of Pediatric Enuresis with Acupuncture & Tuina" by Hu Zhen-xia, *Shang Hai Zhen Jiu Za Zhi (Shanghai Journal of Acupuncture & Moxibustion)*, 2000, #1, p. 27

Cohort description:

Of the 56 cases in this study, 31 were males and 25 were females. The ages of these patients ranged from 5-23 years old, and 17 cases had occult spina bifida. The TCM pattern was lower origin vacuity cold in 36 cases, lung-spleen qi vacuity in 11 cases, and liver channel damp heat in nine cases. Twenty cases had severe enuresis, 32 cases had medium enuresis, and four cases had mild enuresis.

Treatment method:

Acupoints used in this study included:

San Yin Jiao (Sp 6)

Pang Guang Shu (Bl 28)

These points were needled and the needles were retained for 10 minutes. The lumbosacral was then rubbed until there was a feeling of warmth. If there was lower origin vacuity cold, *Shen Shui* (Kidney Water) was massaged 100 times with supplementing method, *Dan Tian* (CV 4-6) was kneaded for three minutes, and *Shen Shu* (Bl 23) was pressed and kneaded 50 times. If there was lung-spleen qi vacuity, *Pi Tu* (Spleen Earth) was massaged with

supplementing method 100 times, *Pi Jing* (Spleen Channel) on the thumb was kneaded 100 times, *Zhong Wan* (CV 12) was kneaded for three minutes, and *Fei Shu* (BL 13) and *Pi Shu* (BL 21) were pressed and kneaded 50 times each. For liver channel damp heat, clearing *Gan Jing* (Liver Channel) and *Shen Jing* (Kidney Channel) on the fingers were done 100 times each. In those cases with occult spina bifida, the author used the methods of warming the kidneys and securing and astringing and after that used the stretching method. When massaging the lumbar region, the hand technique used was a little heavy and quick and was used for a short time, with each point being stimulated for 10 minutes.

This treatment was given three times per week, and 20 treatments equaled one course of therapy. During treatment, the family was asked to feed the child nourishing foods, ensure adequate rest, not to scare the child, and to make sure they did not get too tired. The child was not allowed to drink water for two hours before bed and was encouraged not to eat too much food with fluid for supper. The family also was encouraged to wake the child to urinate throughout the night to encourage healthy habits. It was also emphasized that the child be consoled and encouraged throughout the treatment process.

Study outcomes:

Thirty-five cases (62.50%) were cured, 16 cases (28.57%) improved, and five cases (8.93%) did not improve, for a total amelioration rate of 91.07%. The following table shows the relationship between treatment outcomes and TCM patterns.

PATTERN	TOTAL	CURED	IMPROVED	NO IMPROVEMENT
Lower origin vacuity cold	36	25	10	1
Lung-spleen qi vacuity	11	6	4	1
Liver channel damp heat	9	4	2	3

The next table shows the relationship between treatment outcome and severity of enuresis.

SEVERITY	TOTAL	CURED	IMPROVED	NO IMPROVEMENT
MILD	4	1	2	1
MEDIUM	32	20	9	3
SEVERE	20	14	5	1

3. From “The Treatment of 52 Cases of Pediatric Enuresis in Young People (*i.e.*, 7-16 years old) with Acupuncture & Tuina” by Wu Zhen, *Shan Xi Zhong Yi (Shanxi Chinese Medicine)*, 1996, #6, p. 32

Cohort description:

Of the 52 cases included in this study, 33 were male and 19 were female. The age of the patients ranged from 7-16 years old.

Treatment method:

Body acupuncture consisted of needling the following acupoints:

Shen Shu (Bl 23)

Pang Guang Shu (Bl 28)

San Yin Jiao (Sp 6)

Guan Yuan (CV 4)

Zhong Ji (CV 3)

The needles were retained for 30 minutes and supplementation method was used. Tuina consisted of first pressing and rubbing the above points for one minute each. Afterwards, the doctor used the method of transverse rubbing on the lower back region until the back became hot. Press seeds were also attached over the following ear points:

Bladder

Kidney

Urinary Tract

Brain

The points were pressed on one side each time. One treatment was given per day, and one week equaled one course of treatment. Usually, two courses of treatment were given.

Study outcomes:

Forty-one cases (78.85%) were cured, five cases (9.62%) markedly improved, and six cases (11.53%) improved. The total amelioration rate was, therefore, 100%.

Tuina combined with moxibustion

From "The Treatment of 15 Cases of Pediatric Enuresis with Tuina & Moxibustion" by Song Zhan-lin, *Shi Yong Zhong Yi Nei Ke Za Zhi (Clinical Journal of Chinese Medicine Internal Medicine)*, 1993, #1, p. 48

Cohort description:

Among the 15 cases described by this study, 13 were male and two were female. Ten cases were between 7-10 years old, three cases were 11-14 years old, and two cases were 15-18 years old. Nocturnal enuresis in these patients ranged from slight (one time per night) to severe (multiple times per night). Most children in this study did not have any other obvious symptoms, but five cases had frequent urination during the day.

Treatment method:

Tuina consisted of supplementing *Shen Jing* (Kidney Channel) on the pinky 500 times, supplementing *Pi Jing* (Spleen Channel) on the thumb 300 times, supplementing *Fei Jing* (Lung Channel) on the ring finger 300 times, transporting *Nei Ba Gua* (Inner Eight Trigrams), *i.e.*, pushing in a circular manner around the palm of the hand, 200 times, and rubbing *Er Ren Shang Ma* (Two Persons Upon a Horse), 300 times. Moxibustion was then applied to the following acupoints:

Dan Tian (CV 4-6)

Shen Shu (BL 23)

Bai Hui (GV 20)

These patients were treated one time per day, and five days equaled one course of treatment. In general, patients received 1-2 courses of treatment, although stubborn cases received three courses.

Study outcomes:

Ten cases (67%) were cured, four cases were markedly improved, and one case improved. Thus, the total amelioration rate was 100%.

Tuina combined with internal medicine

From "The Treatment of 60 Cases of Pediatric Enuresis Combining Chinese Medicinals & Spinal Pinch Pull Technique" by Wu Xiao-ju, *Huai Hai Zhong Yao* (Huaihai Chinese Medicine), 2002, #4, p. 315

Cohort description:

There were 60 patients in this study, 28 males and 32 females. Forty-eight of these patients (80%) were between 5-8 years old and 12 cases (20%) between 9-15 years old. All the children were more than three years old, and their course of disease was less than one year.

Treatment method:

External treatment consisted of the spinal pinch-pull technique. In other words, the practitioner pushed and pinch-rolled up the spine five times and then rubbed with their palm in a circular manner from the top to the bottom of the spine two times. Ten days equaled one course of treatment, and, after a three day interval, the patient continued with the next course of treatment.

Internal treatment consisted of the oral administration of *Bu Shen Suo Niao Tang* (Supplement the Kidneys & Reduce Urination Decoction) which was composed of:

Huang Qi (Radix Astragali), 30g
Dang Shen (Radix Codonopsis), 10g
Shan Yao (Radix Dioscoreae), 10g
Tu Si Zi (Semen Cuscutae), 10g
Yi Zhi Ren (Fructus Alpiniae Oxyphyllae), 10g
Sang Piao Xiao (Ootheca Mantidis), 10g
Wu Wei Zi (Fructus Schisandrae), 6g
Jin Ying Zi (Fructus Rosae Laevigatae), 10g

Fu Pen Zi (Fructus Rubi), 10g

Ma Huang (Herba Ephedrae), 6g

One packet of these medicinals was decocted per day in water until 300 milliliters of medicinal liquid remained. This liquid was divided into two doses and taken warm. Ten days equaled one course of treatment, and the treatment was continued for three successive courses of treatment.

Study outcomes:

Thirty-eight cases (63.3%) were cured, 13 cases (21.7%) were markedly improved, and nine cases (15%) improved. Therefore, the total amelioration rate in this study was again 100%.

Acupuncture & moxibustion combined with other modalities

1. From "The Treatment of 32 Cases of Pediatric Enuresis with Spinal Pinch Pull, Moxibustion & Cupping" by Li Qiang-hua, *An Mo Yu Dao Yin (Massage & Dao Yin)*, 2000, #4, p. 58

Cohort description:

There were 21 males and 11 females between the ages of 3.75-11 years old included in this study. The course of disease was less than three years in 19 cases and more than three years in 13 cases. The enuresis occurred one or more times per night in 16 cases, 1-3 times per week in nine cases, and 1-2 times per month in seven cases. Also in seven cases, the enuresis was increased in amount on cold, rainy days.

Treatment method:

First, spinal pinch-pull was performed five times from *Chang Qiang* (GV 1) to *Da Zhui* (GV 14). During the fifth time, the area was pinched three times (instead of one time) and pulled. Afterwards, the lumbar area was massaged 3-5 times. One treatment was given every day, and 10 days equaled one course of treatment. Fire cupping was also applied to *Shen Shu* (BL 23) for 5-10 minutes. This treatment was done every other day, and five treatments equaled one course of treatment. In addition,

moxibustion for approximately 10 minutes was done at *Guan Yuan* (CV 4) and *San Yin Jiao* (Sp 6) until the skin was slightly red. One treatment was given every day, and 10 days equaled one course of treatment.

Study outcomes:

Of these 32 cases, 27 (84.4%) were cured, three cases (9.37%) improved, and two cases (6.25%) did not improve. Therefore, the total amelioration rate was 93.7%. Among the patients that were cured, eight cases required one course of treatment, 15 cases required two courses of treatment, and four cases required three courses of treatment.

Discussion:

This study is an example of combining various treatment methods to achieve better clinical results. These methods are all noninvasive and inexpensive and can be taught to the parents of the child so they can continue to treat the child at home.

2. From “The Treatment of 100 Cases of Enuresis Using Acupuncture & Chinese Medicinals Simultaneously” by Zhang Li-juan, *Ji Lin Zhong Yi Yao (Jilin Chinese Medicine & Medicinals)*, 1992, #4, p. 19

Cohort description:

There were 100 cases of enuresis enrolled in the study, 40 males and 60 females. All these patients were between 5-23 years old. The course of disease was between 2-5 years long.

Treatment method:

This protocol consisted of a combination of Chinese medicinals applied to the umbilicus and acupuncture. The following Chinese medicinals were applied to the navel:

powdered *Rou Gui* (Cortex Cinnamomi), 15g
Liu Huang (Sulphur), 15g
Cong Bai (Bulbus Allii Fistulosi), 5-7 pieces

This mixture was applied to *Shen Que* (CV 8) one time per day

before sleep. The powder was secured in place with an adhesive plaster. In addition, acupuncture was performed at *Guan Yuan* (CV 4) one time each day. The patient was also allowed to use 5-7 cones of moxa or indirect ginger moxa per day as well.

Study outcomes:

Among these 100 cases, 88 cases were cured, four cases improved, and eight cases did not improve. Therefore, the cure rate was 88% after 4-8 treatments, and the total amelioration rate was 92%.

Same disease, different treatments

This section discusses treatments that have become more popular in recent years. The abstracts in this section include clinical audits on the effectiveness of laser therapy, electroacupuncture, ear acupuncture, cupping, and magnet therapy.

Laser therapy

1. From "The Treatment of 96 Cases of Pediatric Enuresis with Laser Therapy & Acupuncture" by Gong Jun, *Shan Xi Zhong Yi (Shanxi Chinese Medicine)*, 1988, #8, p. 372

Cohort description:

Of the 96 patients in this study, 56 were male and 40 were female. The patients were between the ages of 3-20 years old, with 89 of the cases being between 3-10 years old. The course of disease was less than one year in 34 cases, 1-3 years in 52 cases, and more than three years in 10 cases. These patients were randomly divided into two groups—a laser treatment group of 60 cases and an acupuncture comparison group of 36 cases.

Treatment method:

The main acupoints used in this protocol were:

Guan Yuan (CV 4)

Qi Hai (CV 6)

San Yin Jiao (Sp 6)

Bai Hui (GV 20).

For lower origin vacuity cold, *Shen Shu* (Bl 23), *Zhong Ji* (CV 3), *Pang Guang Shu* (Bl 28), and *Shui Dao* (St 28) were added.

If there was spleen-lung qi vacuity, *Zhong Wan* (CV 12), *Zu San Li* (St 36), *Pang Guang Shu* (Bl 28), and *Fei Shu* (Bl 13) were added.

If there was liver channel damp heat, *Tai Chong* (Liv 3) and *Yin Ling Quan* (Sp 9) were added.

Each time, 4-5 points were chosen and the points were alternated each time. Each point was stimulated with the laser for five minutes, and one treatment lasted around 20 minutes. This treatment was given one time per day, and 10 days equaled one course of treatment. An interval of 7-10 days was given between each successive course of treatment. The number of treatments was from 7-32, with an average of 15.

Study outcomes:

The following table shows a comparison of the outcomes between the two groups.

GROUP	CURED	MARKED IMPROVEMENT	IMPROVEMENT	NO IMPROVEMENT	TOTAL
TREATMENT	18 (30%)	20 (33.33%)	16 (26.67%)	6 (10%)	60 cases
COMPARISON	10 (27.78%)	13 (36.11%)	8 (22.22%)	5 (13.89%)	36 cases

The next table shows the relationship between TCM pattern and treatment outcomes.

PATTERN	CURED	MARKED IMPROVEMENT	IMPROVEMENT	NO IMPROVEMENT
LOWER ORIGIN VACUITY COLD	6 (18.18%)	20 (33.33%)	14 (42.42%)	7 (21.21%)
SPLEEN-LUNG QI VACUITY	13 (37.4%)	15 (42.86%)	5 (14.29%)	2 (5.71%)
LIVER CHANNEL DAMP HEAT	9 (32.14%)	12 (42.86%)	5 (17.86%)	2 (7.14%)

2. From "The Treatment of 50 Cases of Pediatric Enuresis with Laser Therapy" by Wang Lian-qin, *Zhong Guo Zhen Jiu (China's Acupuncture & Moxibustion)*, 1991, #5, p. 21

Cohort description:

There were 50 cases in this study, 27 males and 23 females. These patients were between 3-11 years old.

Treatment method:

The main acupoints used in this protocol were:

Guan Yuan (CV 4)
Shen Shu (Bl 23)
San Yin Jiao (Sp 6)

Auxiliary points consisted of:

Zhong Ji (CV 3)
Zu San Li (St 36)

Each point was stimulated with a laser for five minutes, and 3-4 points were chosen each time. One treatment was given per day, and 10 treatments equaled one course of treatment. The number of actual treatments given ranged from 3-10.

Study outcomes:

Thirty-eight cases (76%) were cured, 11 cases (22%) markedly improved, and one case did not improve. Thus the total amelioration rate was 98%.

3. From "The Treatment of 50 Cases of Pediatric Enuresis with Laser Therapy" by Zhou Xiao-ge, *Shang Hai Zhong Yi Yao Za Zhi (Shanghai Journal of Chinese Medicine & Medicinals)*, 1996, #9, p. 20-21

Cohort description:

The patients in the study were divided into two groups. One was a laser group of 50 cases, 33 males and 17 females. The patients in this group were between the ages of 4-15 years old, with an

average age of 6.3 years. The course of disease in this group was between 1-12 years, with an average disease duration of 2.5 years. The other group was an acupuncture group of 36 cases, 26 males and 10 females. The patients in this group were between the ages of 6-13 years old, with an average age of 8.5 years. The course of disease in this group was between 3-10 years, with an average length of 3.8 years.

Treatment method:

All members of the laser group were treated with either 10 megaWatts or 20 megaWatts performed on one of the following two groups of acupoints:

- A. *Guan Yuan* (CV 4) and *Zhong Ji* (CV 3)
- B. *Shen Shu* (Bl 23), *Pang Guang Shu* (Bl 28), and *Tai Xi* (Ki 3)

One group was chosen each time, and each point was stimulated for 10 minutes.

All members of the acupuncture group were treated at the same points above. Supplementation method was used, and the needles were retained for 30 minutes. In addition, press magnets were placed on the following ear acupuncture points:

Bladder
Kidney
Sympathetic
Subcortex

In both groups, treatment was given every other day or three times per week. After one week of treatment, the other group of points were used, and 10 treatments equaled one course of therapy.

Study outcomes:

In laser group #1 treated with 20 megaWatts, 15 cases were cured, five cases markedly improved, three cases improved, and two cases had no improvement. Therefore, the total amelioration rate in this group was 93.00%. In laser group #2 treated with 10 megaWatts, five cases were cured, seven cases were markedly improved, five cases improved, and eight cases had no improve-

ment. The total amelioration rate in this group was 68.00%, while the total combined amelioration rate for both laser groups was 80.00%. In the acupuncture group, 18 cases were cured, nine cases were markedly improved, three cases improved, and six cases had no improvement. Thus, the overall amelioration rate in this group was 83.00%.

4. From "The Treatment of Occult Spina Bifida Pediatric Enuresis With Laser" by Zhu Sheng-quan *et al.*, *Shan Xi Zhong Yi (Shanxi Chinese Medicine)*, 2000, #12, p. 552

Cohort description:

To be included in this study, patients had to be more than five years old. Patients had to have enuresis during sleep at night and/or during the day at least one time per week. Medical examinations had to have eliminated all organic causes of enuresis. X-rays had to have demonstrated that the child had occult spina bifida. Thirty-one cases had spina bifida in the sacral area and 14 cases had it in the lumbar area. All patients also had to have had previous treatment with Chinese and Western medicine with little or no results. Among the 45 cases included in this study, 17 were female and 28 were male. The youngest was five years old and the oldest was 15 years. Thirty-two cases had PNE, and 13 cases had SNE. Twenty-one cases were classified as severe enuresis (enuresis one or more times per night), 17 cases were medium in degree (enuresis not less than 2-3 times per week), and seven cases were considered mild in degree (enuresis 1-2 times per week). Thirty patients had third degree deep sleep. This meant that they were able to be awakened by calling or by physically shaking them, but, when awakened, their spirit mind is not clear. Nine cases had second degree deep sleep. This meant that the child was able to wake when called and the parent did not need to shake them. Six cases had first degree deep sleep. These children were able to wake when called only a few times.

Treatment method:

Treatment in this study was given by a Hi-Ne Laser (JG-1 model) machine using an electric current of 15-20 megaAmperes with a power of 5 megaWatts. The points used were *Zhong Ji* (CV 3) and *Ming Men* (GV 4), and each point was stimulated for 10

minutes each. One such treatment was administered per day, and seven treatments equaled one course. All patients were treated for 1-4 courses of treatment.

Study outcomes:

Ten cases (22%) were cured, 21 cases improved, and 14 cases did not improve. Therefore, the overall amelioration rate was 68.9%. Six cases improved after one course of treatment, 11 cases improved after two courses of treatment, 12 cases improved after three courses, and two cases improved after four courses of treatment. In most cases, the frequency of enuresis was markedly reduced after 2-3 courses of treatment. In cases of functional enuresis, obvious results were commonly obtained after one course of treatment.

5. From "Using Laser Therapy on Acupoints to Treat 100 Cases of Enuresis" by Wang Hui-fen, *Shang Hai Zhen Jiu Za Zhi* (Shanghai Journal of Acupuncture & Moxibustion), 1984, #4, p. 20-21

Cohort description:

There were 100 cases in this study, 47 males and 53 females. The patients were all between the ages of 4-17 years old, with most of the patients between 4-6 years old (43 patients). The course of disease was between three months and more than 13 years, with 83 cases having suffered from this condition for 4-10 years. One case had enuresis five times per night, 12 cases had enuresis four times per night, 25 cases had enuresis three times per night, 42 cases had enuresis two times per night, 17 cases had enuresis one time per night, three cases had enuresis once every other night, and five case had enuresis when they slept in the afternoon. Fifty-four cases had already used Chinese medicinals, and 17 cases had been treated with acupuncture-moxibustion, tuina, and/or Western medicine.

Treatment method:

Laser therapy was administered using a GZ-1 laser machine which shined on an area 1.5-2 millimeters in diameter. The laser was shone on each point for five minutes, and four points were chosen

each time. The treatment was performed every day for 20 minutes. Seven days equaled one course of treatment. Fifty-one cases received one course of treatment, and 49 cases received two courses of treatment. The main points consisted of:

Shang Liao (Bl 31)

Zhong Liao (Bl 33)

In eight cases with qi vacuity, *Qi Hai* (CV 6) or *Guan Yuan* (CV 4) were added. In five cases with spleen vacuity, *San Yin Jiao* (Sp 6) was added.

Study outcomes:

Seventy-three cases (73%) were cured, 13 cases (13%) markedly improved, 13 cases (13%) improved, and one case (1%) did not improve, for a total amelioration rate of 99%. Eight-four cases in this study noticed marked improvement after just four treatments, and two cases noticed an improvement after one treatment. The one case that did not improve received 14 treatments.

Magnet therapy

1. From "The Treatment of 32 Cases of Pediatric Enuresis with Magnets Applied to Acupoints" by Qing Li-hong, *Shang Hai Zhen Jiu Za Zhi* (Shanghai Journal of Acupuncture & Moxibustion), 2000, #1, p. 33

Cohort description:

There were 32 cases in this study, 15 males and 17 females. The youngest patient was five years old, and the oldest was 14 years old. Twenty-eight cases had enuresis since infancy, two cases had occurred after grade one, and two other cases were caused by environmental or mental-emotional factors.

Treatment method:

The main acupoints treated in this protocol were the *Yi Niao Xue* (Enuresis Points) on the foot and hand which were treated bilaterally. Auxiliary points included:

Bai Hui (GV 20)

Qi Hai (CV 6)

Ear *Shen Men* (Spirit Gate)

A two-millimeter 300 gauss magnet was applied to each of the four Enuresis Points and to *Shen Men* bilaterally and were secured in place. The magnets were retained in place and were stimulated three times per day for five minutes each time. When stimulated, the patients felt warmth, aching, distention, or pain. Every three days, the magnets were changed. During the visit to change the magnets, moxibustion was also performed on *Bai Hui* and *Qi Hai* for 15 minutes. This treatment was given two times per week. Five times equaled one course of treatment, and the results were analyzed after two courses.

Study outcomes:

Twenty-two cases (68.75%) were cured, eight cases (25%) markedly improved, and two cases (6.25%) did not improve, for a total amelioration rate of 93.75%.

Discussion:

Once again this study is an example of combining various treatment methods to achieve better clinical results. This study demonstrates a favorable clinical outcome when magnets, a relatively new treatment in Chinese medicine, are used on various acupuncture points. Magnet therapy and moxibustion are both non-invasive and inexpensive, and the location of the points can be taught to the parents of child so they can change the magnets themselves at home. The use of magnets combined with acupuncture points is an excellent option for younger children or children that are afraid of needles.

2. From “The Treatment of 20 Cases of Pediatric Enuresis with Magnets Applied to Acupoints” by He Fu-xiu & Ma Dan, *Shang Hai Zhong Yi Yao Za Zhi* (*Shanghai Journal of Chinese Medicine & Medicinals*), 1991, #4, p. 29

Cohort description

There were 20 cases in this study, eight males and 12 females. The age of the patients was 3-7 years old in seven cases and 8-12

years old in 13 cases. The course of disease ranged from three months to nine years. These patients had enuresis 2-4 times per night, and, in serious cases, they also had enuresis one time during their afternoon nap.

Treatment method:

The acupoints used in this protocol consisted of:

Qi Hai (CV 6)

Guan Yuan (CV 4)

San Yin Jiao (Sp 6)

Gui Lai (St 29)

A CL-2 electromagnetic machine was used. The magnets were eight centimeters in diameter with a magnetic field of 650-1100 gauss and 50 Hertz. Each magnet covered an area 15 x 15 millimeters squared. The head of the magnet was put through the electromagnetic machine and then placed onto the acupuncture point. Each point was stimulated for 15 minutes each time. One treatment was given each day, and five times equaled one course of treatment. Patients received 1-3 courses of treatment.

Study outcomes:

Nineteen cases were cured and one case improved. Therefore, the cure rate was 95% and the total amelioration rate was 100%.

Ear acupuncture

1. From "Combining Ear Seeds & Press Tack Needles in the Treatment of 14 Cases of Pediatric Enuresis" by Tan Ai-min, *Shang Hai Zhong Yi Yao Za Zhi (Shanghai Journal of Chinese Medicine & Medicinals)*, 1991, #8, p. 18

Cohort description:

There were 14 cases in this study, six males and eight females. These patients were between 8-21 years old, with 77 cases less than 10 years old, six cases 10-20 years old, and one case was more than 20 years old. The course of disease was between 6-20 years. Thirteen cases were students, and one case was a young person who was unemployed.

Treatment method:

Points stimulated with ear seeds included:

Brain Stem
Brain Point
Kidney
Bladder
Stomach
Endocrine

Yi Niao Dian (Enuresis Point) was stimulated by press tack needles. This point was located on the palm of the hand on the horizontal line at the midpoint between the little finger and the index finger. The ear seeds were stimulated 2-3 times per day by pressing approximately 10 times. After two days, the seeds and the press tack needle were replaced, alternating between sides each time. Six times equaled one course of treatment.

Study outcomes:

Thirteen cases were cured and one case improved. Therefore, the total amelioration or effectiveness rate was 100%.

Discussion:

This treatment promotes the interaction between the heart and kidneys, clears the spirit and brightens the mind. Brain Stem, Brain Point, and Enuresis Point arouse the brain and open the orifices. The kidneys store the mind, and the bladder and kidney share an interior-exterior relationship. The Kidney and Bladder ear points supplement the kidneys, boost the mind, and regulate the bladder's ability to transform qi. The stomach is the sea of water and grains. Therefore, the Stomach ear point is used to arouse the stomach qi and increase the appetite in order to engender more qi and blood. Endocrine regulates the nervous system function and also increases the effect of the other points to clear the heart and arouse the brain.

2. From "The Treatment of Pediatric Enuresis with Ear Seeds"
by Yu Ling *et. al.*, *Shan Dong Zhong Yi Za Zhi* (Shandong Journal of Chinese Medicine), 1995, #1, p. 228

Cohort description:

Forty-six cases of pediatric enuresis were included in this study. Eighteen of these patients were male and 28 were female, and their ages ranged from 4-12 years old.

Treatment method:

The ear points used in this protocol consisted of:

Kidney
Bladder
Subcortex
Shen Men (Spirit Gate)
Brain Point
Urinary Tract
External Genitalia
Endocrine
Vagus Root

Ear seeds made from *Wang Bu Liu Xing* (Semen Vaccariae) were applied to the most sensitive points in the acupoint areas mentioned above. These seeds were pressed 4-6 times each day for 2-3 minutes each time. Before the child went to sleep, the length of stimulation was increased to five minutes per point. The doctor alternated ears each time and replaced the seeds two times per week. Treatment was as short as three weeks and as long as five weeks.

Study outcomes:

Using this protocol, 45 cases were cured, with no recurrence for two years. Only one case did not improve.

Discussion:

The author of the *Ling Shu (Spiritual Axis)*, in the chapter titled, "Root Art," says

*[If there is] vacuity, [then there is] nocturnal enuresis;
[If there is] nocturnal enuresis, then supplement.*

The ear point Kidney supplements the kidneys and reduces

urination as well as strengthens the bladder's function of transforming qi. *Shen Men* and Subcortex regulate the excitability of the cerebral cortex and the process of controlling urination. Endocrine regulates the function of the endocrine system and the cerebral cortex. Urinary Tract and External Genitalia are points for the local area that is affected in this disease. Brain Point has an antidiuretic function. Vagus Root supplements the kidneys and fortifies the brain.

3. From "The Treatment of 198 Cases of Pediatric Enuresis with Ear Points" by Gao Mei-ling & Gao Rui-ying, *Yun Nan Zhong Yi Za Zhi (Yunnan Journal of Chinese Medicine)*, 1994, #1, p. 25-27

Cohort description:

All patients enrolled in this study had already been diagnosed and treated at another hospital. Of these, 105 cases had been treated with acupuncture, herbal medicine, or magnet therapy without success. Of these 198 patients, 102 were male and 96 were female, and all were between the ages of 3-30 years. Seventy-six cases were between 3-7 years old, 86 cases were between 8-15 years old, 28 cases were between 16-20 years old, and eight cases were between 21-30 years old. The course of disease was from 3-30 years in length. Most cases had enuresis from 1-4 times per night, and 25 cases had enuresis 2-3 times per night. Among the patients involved in the study, 85 cases also had enuresis during the day when they slept. One hundred forty-seven cases (74%) had PNE with enuresis since infancy, former heaven insufficiency, spleen-kidney qi vacuity, and deep sleep and difficulty waking. Fifty-one cases (26%) had SNE. After being able to control the urine for some time, the patient was now not able to control their urination at night.

Treatment method:

Ear points used in this protocol included:

Kidney
Bladder
Spleen
Lung
Subcortex

Brain Point
Mid Ear
Forehead
Lumbosacral Vertebrae

If there was accompanying urinary tract infection, the doctors added Endocrine. If there was frequent urination, they added Urinary Tract.

The ear seeds used were made from *Huang Jing Zi* (Semen Polygonati). The points were pressed by the patient 5-6 times per day until they felt numbness, soreness, distention, and/or heat. The ear seeds were changed every 3-5 days, and five times equaled one course of treatment.

Study outcomes:

Of the 198 cases, 121 cases (61%) were cured, 71 cases (36%) improved, and six cases (3%) did not improve. The total amelioration rate was 97.3%.

4. From “The Treatment of 30 Cases of Pediatric Enuresis Using a Combination of Ear Acupuncture & Chinese Medicinals Applied to the Umbilicus” by Fan Li-li, *He Bei Zhong Xi Jie He Za Zhi (Hebei Journal of Integrated Chinese-Western Medicine)*, 1999, #1, p. 73

Cohort description:

In this group of 30 patients, there were 18 males and 12 females 4-12 years old. The course of disease was less than one year in 16 cases, was 1-5 years in 10 cases, and was more than five years in four cases. All these patients had been examined to eliminate the possibility of organic causes and to discover if the intelligence and development was normal.

Treatment method:

The main ear points used in this study were:

Enuresis Points
Kidney
Bladder

Urinary Tract
Brain

These points were combined with the following auxiliary points:

Triple Burner
Lung
Spleen
Liver
Vacuity Point

Using pattern discrimination, 4-5 appropriate points were selected for use each time. The ear adhesives were changed one time every other day, and 10 days equaled one course of treatment. The points were pressed 3-5 times each day, and each time they were pressed 10 times. When pressing the points, it was important for the child to feel soreness or pain.

Chinese medicinals applied to the navel consisted of:

blast-fried *Fu Zi* (Radix Lateralis Praeparatus Aconiti Carmichaeli)
Bu Gu Zhi (Fructus Psoraleae)
Sang Piao Xiao (Ootheca Mantidis)

These medicinals were combined together and pounded with a pestle into a fine powder. Then *Sheng Jiang* (uncooked Rhizoma Zingiberis) was then pounded with a pestle into a mash, combined with the previous medicinals, and applied to the navel. The herbs were applied in the evening and removed in the morning. This was performed one time every other day, and 10 days equaled one course of treatment, with 1-3 courses administered.

Study outcomes:

Twenty-three cases (76.7%) were cured, five cases (16.6%) improved, and two cases (6.7%) did not improve. Therefore, the overall curative effect was 93.3%.

5. From "A Clinical Summary of the Treatment of 36 Cases of Pediatric Enuresis with *Yi Zhi Ren Zi* (Alpinia Seeds)" by Wang Xiao, *Jiang Su Zhong Yi (Jiangsu Chineses Medicine)*, 1990, #8, p. 27

Cohort description:

There were 36 patients with enuresis included in this study, 22 males and 14 females. Sixteen cases were 4-6 years old and 20 cases were 7-14 years old. The course of disease was less than a year in eight cases, 1-5 years in 16 cases, and more than five years in 12 cases.

Treatment method:

The main ear acupuncture points used in this study were:

Kidney
Bladder

The auxiliary points were:

Triple Burner
Lung
Spleen
Liver
Sympathetic

Based on pattern discrimination, 1-2 of the main points and 1-2 of the accompanying points were chosen each time. The doctor chose relatively small *Yi Zhi Ren Zi* (Semen Alpiniae Oxyphyllae) for use as ear seeds. The child was asked to stimulate the ear seeds by pressing them 15-30 times. This was done morning, noon, and night. If the skin was broken, then an alternate point was chosen. The ear seeds were changed once every five days, 10 days equaled one course of treatment, and 1-3 courses were administered.

Study outcomes:

Twenty-eight cases were cured, six cases improved, and two cases did not improve. Thus, the total amelioration rate was 94.5%.

Electroacupuncture

1. From "The Curative Effects & Observations on Treating 92 Cases of Pediatric Enuresis with Electro-acupuncture" by Shi Chang-ying, *Hu Bei Zhong Yi Za Zhi (Hubei Journal of Chinese Medicine)*, 1995, #2, p. 46

Cohort description:

All 92 cases in this study went through testing to eliminate any organic causes of their enuresis. Fifty-three cases were male and 39 cases were female. The patients were as young as five years old and as old as 31. The course of disease was as short as half a year and as long as more than 20 years. On the basis of clinical symptoms, it was determined that 54 cases presented the pattern of kidney yang insufficiency and 38 cases presented the pattern of spleen-lung qi vacuity.

Treatment method:

The main acupoints commonly used based on pattern discrimination were:

Guan Yuan (CV 4)

Zhong Ji (CV 3)

Qi Hai (CV 6)

Shen Shu (BL 23)

Pang Guang Shu (BL 28)

San Yin Jiao (Sp 6)

Tai Yuan (Lu 9)

Tai Xi (KI 3)

The doctor used 28 gauge, 1.5 inch needles. After the qi was obtained, they were stimulated via a G6805 electro-acupuncture machine. The frequency was set to 200 cycles per minute, and the needles were retained for 20-30 minutes. Treatment was given one time per day, and six days equaled one course of treatment. The child was encouraged to urinate before each treatment.

Study outcomes:

Sixty-one cases were cured, 26 cases improved, and five cases got no effect. Therefore, the total amelioration rate was 94.6%.

2. From "The Treatment of 22 Cases of Pediatric Enuresis with Electro-acupuncture & Ear Press Magnets" by Fan Jin, *He Bei Zhong Yi (Hebei Chinese Medicine)*, 2002, #8, p. 628

Cohort description:

There were 22 cases of enuresis enrolled in this study, seven

males and 15 females. These patients were 5.5-20 years old. The course of disease was three months to 15 years. According to TCM pattern discrimination, 16 cases presented with kidney vacuity not securing and six cases presented with liver channel depressive heat. All these patients experienced enuresis during sleep which was either mild (one time per night) or severe (multiple times per night). Those with kidney vacuity not securing presented with lassitude of the spirit, lack of strength, low back ache, cold limbs, a somber white facial complexion, and clear, long urination. Those with liver channel depressive heat presented with profuse dreams, grinding of teeth, agitation, vexation, easy anger, red lips and tongue, and scanty urine that had a fishy or animal smell.

Treatment method:

Electro-acupuncture was administered at the following main acupoints:

Guan Yuan (CV 4)

Zhong Ji (CV 3)

San Yin Jiao (Sp 6)

If there was kidney vacuity not securing, *Tai Xi* (Ki 3) and *Shen Shu* (Bl 23) were added. If there was liver channel depressive heat, *Tai Chong* (Liv 3) and *Li Gou* (Liv 5) were added. Electrical stimulation was added to the handles of the needle which were retained for 30 minutes. Supplementation method was used for the pattern of kidney vacuity not securing, and draining technique was used for the pattern of liver channel depressive heat. Treatment was given every other day for mild cases and was given daily for serious cases.

The main ear points treated with magnets consisted of:

Shen Men (Spirit Gate)

Kidney

Bladder

Liver

Subcortex

Brain Point

The magnets were two millimeters in diameter and were applied to the ear using a 0.8cm x 0.8cm piece of adhesive. The magnets were applied to alternate ears one time every other day. These magnets were stimulated or pressed 20 times by the patient four times per day until there was distention or pain in the ear. If the enuresis returned, then the treatment was continued to obtain results. The longest course of treatment was three months, and the shortest was two weeks.

Study outcomes:

Four cases were cured, 17 cases improved, and one case did not improve, for a total amelioration rate of 95.5%.

3. From "Clinical Observations of Using Electro-acupuncture to Treat 102 Cases of Enuresis" by Xie Wan-dong, *Xin Zhong Yi (New Chinese Medicine)*, 1989, #10, p. 36

Cohort description:

Of the 102 patients in this study, 44 were male and 58 were female. Twenty-four of these cases were between 4-7 years old, 55 cases were between 8-14 years old, and 23 cases were more than 15 years old. The course of disease was less than two years in 30 cases, 2-10 years in 52 cases, and more than 10 years in 20 cases. The longest course of disease was 18 years.

Treatment method:

The main acupoints used in this study were:

Guan Yuan (CV 4)

Zhong Ji (CV 3)

Qu Gu (CV 2)

San Yin Jiao (Sp 6) was an auxiliary point. Treatment was given once per day, and five times equaled one course of treatment. Three days interval was given between each successive course of treatment. The needles were retained for 15-20 minutes and stimulated using a G6805 electro-acupuncture machine. If the patients body was smaller than normal and their tongue was pale with white fur, this indicated yang vacuity and the doctor would then add moxibustion.

Study outcomes:

Seventy-one cases were cured, 30 cases improved, and one case did not improve, for a total amelioration rate of 99%.

Miscellaneous

From “The Treatment of 42 Cases of Pediatric Enuresis with Spinal Pinch Pull Technique Combined With Cupping the Umbilicus” by Yan Xiang-hong & Huang Ji-yan, *An Mo Yu Dao Yin (Massage & Dao Yin)*, 2001, #1, p. 55

Cohort description:

Of the 42 patients in this study 25 were male and 17 were female. These children’s ages ranged from 4.5-12 years old. The course of disease was from six weeks to seven years. There was enuresis once per night in 26 cases and 2-3 times per week in 16 cases. Thirty-two cases had already been treated with modern Western medicine with no success.

Treatment method:

The spinal pinch-pull technique was performed 5-8 times from *Chang Qiang* (GV 1) to *Da Zhui* (GV 14). The skin in the area where the technique was performed became red. The next technique was to apply petroleum jelly to the lower back, and the doctor rubbed this area back and forth with the lesser thenar eminence of their hand until the child felt a warm sensation in the lower back. Altogether, the above techniques were done for 5-10 minutes each treatment.

Cupping using the fire method was used to apply a cup to *Shen Que* (CV 8) for 2-5 minutes. To improve the results, the patient was covered with a blanket after the cup was secured in place to prevent the child from feeling cold and decreasing the treatment’s effectiveness. This treatment was done one time per day, with 10 days equaling one course of treatment. There was no interval between courses of treatment, and, altogether, the treatment was continued for three courses.

Study outcomes:

Twenty-five cases (59.5%) were cured, 12 cases (28.5%)

improved, and five cases (12%) did not improve. Thus, the total amelioration rate was 88%. Eighteen cases achieved results after one course of treatment, 13 cases after two courses of treatment, and six cases after three courses of treatment.

Representative Case Histories

The case histories in this chapter further exemplify how the protocols in the previous chapter were implemented in clinical practice.

Ancient formulas

Case 1:¹

The patient was a five year-old little boy who was initially examined on March 15, 1998. For six months prior to the first visit, the child had had frequent, clear urination and enuresis 1-3 times per night. Accompanying signs and symptoms included thirst, a liking for drinking water, profuse perspiration on slight exertion, poor appetite, thin, moist tongue fur, and a fine, rapid pulse. Based on this, the pattern discrimination was kidney qi not securing and disharmony of the constructive and defensive. Therefore, the treatment principles were to harmonize the constructive and defensive, warm the kidneys, and secure and astringe. The formula prescribed was *Gui Zhi Tang Jia Wei* (Cinnamon Twig Decoction with Added Flavors) composed of: *Gui Zhi* (Ramulus Cinnamomi) and *Bai Shao* (Radix Paeoniae Albae), 6g each, *Gan Cao* (Radix Glycyrrhizae), 3g, *Sheng Jiang* (uncooked Rhizoma Zingiberis), 3 slices, *Da Zao* (Fructus Jujubae), 5 pieces, *Fu Ling* (Poria), 9g, *Long Gu* (Os Draconis) and *Mu Li* (Concha Ostreae), 15g each, and *Suo Quan Wan* (Reduce the Stream Pills), 10g. After taking seven packets of these medicinals, the enuresis and frequency of urination were decreased and the other symptoms were improved. The above medicinals with additions were used for one half month longer at which time the condition was resolved.

Case 2:²

The patient was a nine year-old male whose initial visit occurred on April 3, 1996. This child had experienced enuresis, often more

than one time per night, since he was three years old. His parents were worried about this and had tried many Western and Chinese medicines with no success. This child was a deep sleeper and was difficult to wake. Each time the child was nervous or became fatigued, the frequency of enuresis increased to often more than three times a night. Besides enuresis, this child presented with a fatigued spirit, sweating on exertion, below average school performance, a lusterless, bright white facial complexion, poor appetite, sloppy stools, lack of warmth in the hands and feet, a pale tongue with thin, white fur, and a deep, weak pulse. Urine tests were normal, but x-rays showed evidence of occult spina bifida. Based on these signs and symptoms, the child's pattern discrimination was categorized as kidney qi insufficiency with bladder vacuity cold and qi transformation not containing. For this, a variation of *Gui Zhi Jia Long Gu Mu Li Tang* (Cinnamon Twig, Dragon Bone & Oyster Shell Decoction) was prescribed based on the principles of diffusing and warming yang, supplementing the kidneys, securing, astringing, and stopping urination. This formula consisted of: *Gui Zhi* (Ramulus Cinnamomi), 10g, *Bai Shao* (Radix Paeoniae Albae), 10g, calcined *Long Gu* (Os Draconis), 15g, calcined *Mu Li* (Concha Ostreae), 15g, *Bai Ji Tian* (Radix Morindae Officinalis), 10g, *Bu Gu Zhi* (Fructus Psoraleae), 10g, *Yi Zhi Ren* (Fructus Alpiniae Oxyphyllae), 10g, *Sang Piao Xiao* (Ootheca Mantidis), 10g, *Wu Yao* (Radix Linderae), 10g, mix-fried *Huang Qi* (Radix Astragali), 10g, earth stir-fried *Bai Zhu* (Rhizoma Atractylodis Macrocephalae), 10g, *Fu Xiao Mai* (Fructus Levis Triticum), 15g, *Da Zao* (Fructus Jujubae), 7 pieces, and *Sheng Jiang* (uncooked Rhizoma Zingiberis), 3 slices. One packet of these medicinals was decocted in water two times and the resulting medicinal liquid was divided into four doses per day. After taking five packets of this formula consecutively, the enuresis was improved to just one time a night instead of 2-3 times per night. Simultaneously, the child could wake by himself to urinate, his cheeks were rosy, and his limbs were slightly warmer. The boy also had increased appetite and firmer stools. His tongue was now pale with thin, white fur, and his pulse had more force although it was still slow. The enuresis stopped after four more packets of the above medicinals. Another four packets were administered in order to secure the treatment results. A follow-up six months later showed no recurrence.

Case 3:³

This patient was a 10 year-old boy who had had enuresis since infancy, often 2-3 times per night. This child's enuresis was worse in the winter. Other signs and symptoms included being shorter than normal and having slower development, scanty hair, a bright, white facial complexion, aversion to cold, sleeping curled up, often complaining of sore, painful knees which were worse at night but better with heat, a poor appetite, a pale tongue with thin, white fur, and a deep, slow, forceless pulse. Therefore, the patient's pattern was discriminated as kidney yang vacuity with yang vacuity not warming and transforming plus bladder loss of restraint and enuresis. The treatment principles were to mainly warm and supplement kidney yang but also to fortify the spleen, secure and astringe. Hence, the formula *Zhen Wu Tang Jia Wei* (True Warrior Decoction with Added Flavors) was prescribed which was composed of: *Fu Ling* (Poria), *Bai Shao* (Radix Paeoniae Albae), and *Bai Zhu* (Rhizoma Atractylodis Macrocephalae), 9g each, blast-fried *Fu Zi* (Radix Lateralis Praeparatus Aconiti Carmichaeli), 6g, *Sheng Jiang* (uncooked Rhizoma Zingiberis), 3 slices, *Dang Shen* (Radix Codonopsisitis), 12g, and *Sang Piao Xiao* (Ootheca Mantidis), 4.5g. One packet of these medicinals was administered each day, and initially three packets were given. On the patient's second visit, the enuresis had decreased and the other symptoms were improved. After continuing for five more packets, the patient was cured. The enuresis did not recur, the child's height increased, and his development became normal.

Case 4:⁴

The patient was an eight year-old male little boy whose initial visit occurred on June 19, 1997. This boy had had enuresis 1-2 times nightly since infancy and had gone for only short periods of time without enuresis. Since the child turned six, the enuresis had actually increased. He had previously used Chinese and Western medicines without success. His signs and symptoms included a fatigued essence spirit, an emaciated body, a bright, white facial complexion, frequent catching cold, sweating on exertion, a poor appetite, bowel movements after eating, a pale tongue with thin, white fur, and a vacuous, weak, forceless pulse. Based on this, the patient's pattern was determined to be spleen-lung qi vacuity, therefore, the treatment principles were to boost the qi and

secure and contain. For these purposes, the doctor selected *Bu Zhong Yi Qi Tang* (Supplement the Center & Boost the Qi Decoction) plus *Suo Quan Wan* (Reduce the Stream Pills) with additions and subtractions: *Huang Qi* (Radix Astragali), 10g, *Dang Shen* (Radix Codonopsitis), 8g, *Bai Zhu* (Rhizoma Atractylodis Macrocephaleae), 8g, *Chen Pi* (Pericarpium Citri Reticulatae), 5g, *Sheng Ma* (Rhizoma Cimicifugae), 1g, *Chai Hu* (Radix Bupleuri), 3g, *Dang Gui* (Radix Angelicae Sinensis), 6g, *Yi Zhi Ren* (Fructus Alpiniae Oxyphyllae), 8g, *Fu Pen Zi* (Fructus Rubi), 5g, mix-fried *Gan Cao* (Radix Glycyrrhizae), 3g, *Shi Chang Pu* (Rhizoma Acori Tatarinowii) and stir-fried *Mai Ya* (Fructus Germinatus Hordei), 6g each. After taking the above formula for six days, the child's frequency of urination at night was less, his appetite was obviously improved, but his stools were not formed. His tongue and pulse were the same as before. Therefore, the doctor decided to add *Shan Yao* (Radix Dioscoreae) to the above formula for 10 more days. At the end of that time, the enuresis was obviously less and the boy's spirit and appetite were good. The doctor prescribed 20 more packets of the current formula, after which time, the case was cured, and there was no recurrence in the first six months after treatment.

Case 5:⁵

The next case is that of a 12 year-old boy who was first seen on March 15, 1980. The child had suffered from enuresis for more than two years. Since the winter of 1977, the patient commonly had enuresis in the evening. The child had already taken medicinals to supplement the kidneys and secure and astringe and also took the formula *Bu Shen Gou Rou Tang* (Supplement the Kidneys Dog Meat Decoction) but had obtained no results. The latter formula contained *Gou Qi Zi* (Fructus Lycii), *Rou Gui* (Cortex Cinnamomi), and *Shu Di* (cooked Radix Rehmanniae) with *Gou Rou* (dog meat). The frequency of bed-wetting had increased in the last month. In addition, the child's urination during the day was frequent and copious, his appetite was poor, and the child had thin, sloppy stools 1-2 times per day. There was also a bright, lusterless complexion, a pale tongue with thin, white fur, and a deep, fine pulse. Based on this, the child's pattern was spleen-kidney qi vacuity and the treatment principles were to warm earth to overcome water, reduce urination and stop enuresis. For this, *Gan Jiang Ling Zhu Tang Jian* (Licorice, Ginger, Poria &

Atractylodes Decoction with Additions and Subtractions) plus *Suo Quan Wan* (Reduce the Stream Pills) was prescribed with additions and subtractions: *Pao Jiang* (blast-fried Rhizoma Zingiberis), *Bai Zhu* (Rhizoma Atractylodis Macrocephalae), *Shan Yao* (Radix Dioscoreae), and *Fu Ling* (Poria), 10g each, *Yi Zhi Ren* (Fructus Alpiniae Oxyphyllae), mix-fried *Gan Cao* (Radix Glycyrrhizae), and *Wu Yao* (Radix Linderae), 8g each. The child was asked to restrict the amount of water he drank after midday. Twenty packets of the above formula, one packet taken per day, cured the child's condition. Over the next year, the enuresis did not return.

Case 6:⁶

The patient in this case history was a 14 year-old female who was first examined on May 17, 1984. The patient had had enuresis each night for more than half a year. She had already taken upbearing, contracting, and astringing medicinals with no results. The patient's facial complexion was pale yellow, and she had slight superficial edema. Her tongue was pale with thin, white fur, and her pulse was soggy and moderate (or slightly slow). Based on these signs and symptoms, her Chinese medical pattern was categorized as spleen-kidney vacuity cold with inability to transform qi. The formula prescribed was *Ma Huang Fu Zi Gan Cao Tang* (Ephedra, Aconite & Licorice Decoction) which was composed of: *Ma Huang* (Herba Ephedrae), 12g, *Fu Zi* (Radix Lateralis Praeparatus Aconiti Carmichaeli), 12g, and *Gan Cao* (Radix Glycyrrhizae), 6g. After taking only two packets of these medicinals, the young woman did not have enuresis for four nights. After continuing to take the medicine for another five packets, the enuresis did not return even on follow-up after one year.

Case 7:⁷

This case is of an eight year-old boy who was initially seen on January 7, 1984. For more than three years, the child had had enuresis 1-2 times every night. The child had already taken medicinals to fortify the spleen and boost the kidneys, secure, astringe, and reduce urination as well as acupuncture and moxibustion all with no success. The child's thirst and appetite were normal as was their development. His tongue was pale, and there were teeth-marks on the sides. The tongue fur was thin and white, and his pulse was moderate (or slightly slow). The doctor used *Ge*

Gen Tang (Puerariae Decoction). The formula prescribed consisted of: *Ge Gen* (Radix Puerariae), 10g, *Ma Huang* (Herba Ephedrae), 4g, *Gui Zhi* (Ramulus Cinnamomi), mix-fried *Gan Cao* (Radix Glycyrrhizae), and *Bai Shao* (Radix Paeoniae Albae), 6g each, *Sheng Jiang* (uncooked Rhizoma Zingiberis), 2g, and *Da Zao* (Fructus Jujubae), 7 pieces. After nine packets of these medicinals, the enuresis was completely cured and did not return.

Case 8:⁸

The patient in this case was a 12 year-old female whose initial examination took place on October 5, 1984. The child had had enuresis since infancy. In the summer, the child had enuresis 1-3 times per night, but, in the winter, this increased to 3-6 times per night. The child had used modern Western medicine, Chinese herbal medicine, and acupuncture prior to her initial assessment without success. The child had a less than normal essence-spirit, a bright, white facial complexion, lack of strength, cold limbs, cold stomach, long, clear urination, a pale tongue, and a deep, slow, forceless pulse. Based on these signs and symptoms, her pattern was determined to be spleen-kidney yang vacuity, and she was prescribed *Ma Huang Tang Jia Wei* (Ephedra Decoction with Added Flavors) composed of: *Ma Huang* (Herba Ephedrae), *Fu Zi* (Radix Lateralis Praeparatus Aconiti Carmichaeli), and *Xing Ren* (Semen Armeniacae), 10g each, *Gui Zhi* (Ramulus Cinnamomi), 12g, *Wu Yao* (Radix Linderae), uncooked *Shan Yao* (Radix Dioscoreae), and *Sang Piao Xiao* (Ootheca Mantidis), 30g each, *Yi Zhi Ren* (Fructus Alpiniae Oxyphyllae), *Rou Gui* (Cortex Cinnamomi), and *Gan Cao* (Radix Glycyrrhizae), 6g each. After taking only one packet of these medicinals, the frequency of enuresis decreased, and, after three packets, it had stopped. The patient continued to take six more packets to secure the treatment results. There was no reoccurrence of enuresis.

Case 9:⁹

This boy was 10 years old, and he was first seen on July 22, 1987. The child had had enuresis 3-4 times per night since infancy. During the daytime, the child also had frequent, scanty urination. He was nervous, sometimes severely so, and he was disquieted at night. He did not wake after wetting the bed. His appetite and bowels were normal, his facial complexion was yellow, and

his body was emaciated. The area around the patient's mouth was slightly blue-green, his tongue was pale with white fur, and his pulse was deep and slightly rapid. Based on these signs and symptoms, the treatment principles advanced were to fortify the spleen and quiet the spirit, secure and contain and stop enuresis. Therefore, the following version of *Gui Pi Tang Jia Wei* (Restore the Spleen Decoction with Added Flavors) was prescribed: *Dang Shen* (Radix Codonopsis), *Huang Qi* (Radix Astragali), *Fu Ling* (Poria), *Yuan Zhi* (Radix Polygalae), *Long Yan Rou* (Arillus Longanae), *Wu Wei Zi* (Fructus Schisandrae), and stir-fried *Bai Zhu* (Rhizoma Atractylodis Macrocephalae), 10g each, uncooked *Long Gu* (Os Draconis) and *Mu Li* (Concha Ostreae), 20g each, *Suan Zao Ren* (Semen Zizyphi Spinosae) and *Sang Piao Xiao* (Ootheca Mantidis), 15g each, *Sheng Jiang* (uncooked Rhizoma Zingiberis), 2 slices, and *Da Zao* (Fructus Jujubae), 5 pieces. After taking five packets of this formula, the boy's enuresis was reduced to 1-2 times per night and he was also calm at night. After continuing to take five more packets, the enuresis decreased to 1-2 times per week. The doctor then prescribed five more packets, after which the enuresis was cured. On follow-up after one year, there was no recurrence.

Case 10:¹⁰

This 11 year-old boy was first seen on May 2, 1991. Enuresis appeared more than six months ago. Initially the child had tried using *Liu Wei Di Huang Wan* (Six Flavors Rehmannia Pills), *Long Dan Xie Gan Wan* (Gentiana Drain the Liver Pills), and another empirical formula but obtained no results. When examined, the following signs and symptoms were found: night-time enuresis, negative urine culture, thirst with a desire for chilled drinks, red, swollen gums, average development, a red tongue with yellow fur, and a slippery, rapid pulse. The doctor, therefore, chose to use *Qing Wei San* (Clear the Stomach Powder). This formula consists of: *Huang Lian* (Rhizoma Coptidis), *Sheng Ma* (Rhizoma Cimicifugae), *Dan Pi* (Cortex Moutan), *Sheng Di* (uncooked Radix Rehmanniae), and *Dang Gui* (Radix Angelicae Sinensis). Unfortunately, the Chinese author did not include doses of these ingredients. The patient decocted these medicinals and took this formula one time each during the day and night for five days. At the second visit, the thirst with a desire for chilled drinks and the red, swollen gums were improved. Already there was no enuresis

at night. However, the tongue was still red but with only slightly yellow fur, and the pulse was still slippery and rapid. Therefore, the doctor continued administering the same medicinals. On the third visit, the enuresis had stopped and all the other symptoms had disappeared. Because there was still an underlying spleen-stomach vacuity weakness, the doctor prescribed medicinals to regulate the spleen and stomach to treat this condition. On follow-up after eighteen months, there was no recurrence.

Case 11:¹¹

This patient was a nine year-old boy who was first seen on January 26, 1966. The child had had enuresis every 1-2 hours at night since he was five years old. This enuresis was accompanied by a white facial complexion, fatigued spirit, lack of strength of the four limbs, devitalized appetite, a moderate (or slightly slow) pulse, and no tongue fur. His TCM pattern was discriminated as spleen-lung qi vacuity unable to control the waterways, and he was prescribed *Suo Quan Wan Jia Wei* (Reduce the Stream Pills with Added Flavors) composed of: *Huang Qi* (Radix Astragali) and *Dang Shen* (Radix Codonopsis), 10g each, *Yi Zhi Ren* (Fructus Alpiniae Oxyphyllae), 12g, *Bai Zhu* (Rhizoma Atractylodis Macrocephalae) and *Fu Ling* (Poria), 10g each, *Fu Pen Zi* (Fructus Rubi), 12g, *Shan Yao* (Radix Dioscoreae), 10g, calcined *Mu Li* (Concha Ostreae), 12g, *Yi Yi Ren* (Semen Coicis), 10g, *Bai Shao* (Radix Paeoniae Albae), 6g, and *Xiao Er Jian Pi Wan* (Child Fortify the Spleen Pills), one pill taken two times per day. After six packets of the above formula, the frequency of the enuresis was decreased and the other symptoms had improved. Twelve more packets of the above prescription with additions and subtractions produced a cure, and, after one month, there was no recurrence.

Empirical formulas

Case 12:¹²

This 12 year-old female was first seen on February 1, 1986. The child had had enuresis 2-3 times every night since infancy. The child had tried many formulas without success, and her studies had suffered. During the initial examination, the child had a dull expression, and there was lassitude of the spirit and a fat body. The parents said that the child was also difficult to wake when

asleep. In addition, the doctor was informed the child's stools were sloppy. The patient's tongue was fat with thin, white, slimy fur, while her pulse was deep and fine. Based on these signs and symptoms, the patient's pattern was insufficiency of kidney yang with the bladder not restraining. There was also phlegm turbidity clouding the orifices of the heart. Therefore, the treatment principles were to warm the kidneys and reduce urination, transform phlegm and open the orifices. For these purposes, the following Chinese medicinals were prescribed: *Shi Chang Pu* (Rhizoma Acori Tatarinowii), 12g, processed *Nan Xing* (Rhizoma Arisaematis), 9g, *Yuan Zhi* (Radix Polygalae), 3g, *Ma Huang* (Herba Ephedrae), 6g, *Fu Zi* (Radix Lateralis Praeparatus Aconiti Carmichaeli), 9g, *Xi Xin* (Herba Asari), 3g, *Yi Zhi Ren* (Fructus Alpiniae Oxyphyllae), 6g, *Sang Piao Xiao* (Ootheca Mantidis), 10g, *Rou Gui* (Cortex Cinnamomi), 6g, *Shen Qu* (Massa Medica Fermentata), 6g, and *Chuan Niu Xi* (Radix Cyathulae), 9g. After taking four packets of this formula, the patient had enuresis one time. After continuing to take the medicine for four more packets, the enuresis had stopped and her essence spirit was slightly better, but the child had vexation and agitation at night. Thus, six grams of *Huang Lian* (Rhizoma Coptidis) were added to the above formula and this was continued for six more packets when all the symptoms were eliminated. After this, the patient took *Shen Qi Wan* (Kidney Qi Pills) for one half year to consolidate the treatment results. There was no recurrence of enuresis.

Case 13:¹³

The patient was a seven year-old boy who was first seen on February 16, 1965. This child had had severe enuresis for more than three years. He had enuresis four times per night and would not wake up from sleep when called. The enuresis was accompanied by occasional abdominal pain, an abstracted essence spirit and unsettled heart spirit, a moderate (or slightly slow), forceless pulse, and thin, white tongue fur. His TCM pattern was heart-kidney dual vacuity with non-interaction of fire and water, and lower origin not secure. The treatment principles were to supplement the kidneys, reduce the stream, and promote the free flow between the heart and kidneys. For this, the following formula was prescribed: *Sang Piao Xiao* (Ootheca Mantidis), 15g, *Fu Pen Zi* (Fructus Rubi), 12g, *Bu Gu Zhi* (Semen Psoraleae), 10g, *Yi Zhi Ren* (Fructus Alpiniae Oxyphyllae), 10g, *Tu Si Zi* (Semen

Cuscutae), 10g, *Ze Xie* (Rhizoma Alismatis), 6g, *Yuan Zhi* (Radix Polygalae), 10g, *Shi Chang Pu* (Rhizoma Acori Tatarinowii), 10g, *Gui Zhi* (Ramulus Cinnamomi), 3g, *Wu Yao* (Radix Linderae), 5g, and *Jin Gui Shen Qi Wan* (Golden Cabinet Kidney Qi Pills), one pill taken two times per day. After six packets of the above prescription, the frequency of enuresis was less, the interval between episodes of enuresis was longer, and the accompanying symptoms were improved. After 12 more packets with additions and subtractions, the enuresis had stopped and the other symptoms had all disappeared. The patient continued to use *Jin Gui Shen Qi Wan*, and five months after using this formula there had been no recurrence.

Case 14:¹⁴

The patient was an eight year-old male who was initially seen on October 5, 1989. This patient had had enuresis every night for two months. During the day, the child's urination was frequent and short, but the amount was not much. One month prior to the initial visit, a urine examination at the same hospital had been positive for white blood cells. Therefore, the patient had taken some Western medicine and Chinese medicinals to clear heat and resolve toxins, disinhibit the urine and free the flow of strangury. After two weeks, there did not appear to be any improvement, and now the patient presented with torpid intake, yellow urine, and a floating, rapid pulse. This was due to lung channel depressive heat descending to distress the bladder. Therefore, the treatment principles were to clear heat and diffuse the lungs with: stir-fried *Ma Huang* (Herba Ephedrae), 5g, *Xing Ren* (Semen Armeniacae), 9g, *Shi Gao* (Gypsum Fibrosum), 15g, *Huang Qin* (Radix Scutellariae), 8g, *Che Qian Cao* (Herba Plantaginis), 10g, *Gui Zhi* (Ramulus Cinnamomi), 6g, and uncooked *Gan Cao* (Radix Glycyrrhizae), 7g. After taking seven packets of these medicinals, the case was cured and follow-up visits showed no recurrence.

External treatments

Case 15:¹⁵

This case involved an eight year-old boy who was first examined on November 8, 1993. This boy had had enuresis for more than five years, and the patient had already taken more than 10 pack-

ets of Chinese medicinals by mouth. After stopping these medicinals, the child still had enuresis 1-2 times per night. The patient had a slightly pale tongue with thin, white fur, and his pulse was fine and deep. Therefore, this patient's TCM pattern was kidney qi insufficiency and lower origin vacuity cold. For this equal amounts of *Ma Huang* (Herba Ephedrae), *Ba Ji Tian* (Radix Morindae Officinalis), *Liu Huang* (Sulphur), and *Fu Shen* (Sclerotium Paradicis Poriae Cocos) were ground into powder and stored in an air tight container. Each night, three hours before bed, the patient's navel was cleaned with 75% alcohol. Then, 5-10 grams of the above powder was mixed with an appropriate amount of honey to form a paste. This paste was applied to the child's umbilicus, covered with a piece of gauze, and secured in place. The following day, the medicinals were removed and the above process of administration was repeated. After three days of using this treatment, the enuresis decreased. After continuing this treatment for 14 days, the enuresis disappeared. Follow-up visits showed no recurrence of this condition.

Acupuncture-moxibustion

Case 16:¹⁶

This patient was a 12 year-old male student who was first seen on September 12, 1995. This patient had had enuresis since infancy. Currently, the child had enuresis 1-2 times per night and could not be woken by his family to urinate. This enuresis was accompanied by a poor essence spirit and torpid intake. It was decided to treat the child with acupuncture. Therefore, *San Yin Jiao* (Sp 6), *Shen Shu* (Bl 23), *Guan Yuan* (CV 4), and *Zu San Li* (St 36) were needled to a depth of 0.8-1 inch using 1.5 inch, 28 gauge needles. The needles were manipulated with even supplementing-even draining method until the qi was obtained. *Bai Hui* (GV 20) and *Zu Yun Gan Qu* (Foot Motor Sensory Area) on the scalp were needled using the same size needles also with even supplementing-even draining method. These needles were manipulated 200 times very quickly. All the needles were retained for 30 minutes and stimulated 1-2 times during this time. Acupuncture was given one time per day, and 10 times equaled one course of treatment. After one course of treatment with the above method, the enuresis ceased. There was no recurrence during 10 months of follow-up visits.

Case 17:¹⁷

The patient was an 11 year-old female student. This child had had enuresis since infancy. However, its frequency was not consistent. Even after wetting the bed, the child was not easy to wake up. Over the years, this child had used many forms of treatment, including Chinese medicine and modern Western medicine with no success. The enuresis was accompanied by fatigue, forgetfulness, and a sense of anxiousness and being ashamed of her condition. Examination showed her development, in general, was normal. She had a slightly white complexion that was slightly wan and sallow, and her eyes had little sheen. Her tongue was pale, the pulse was deep and weak, and urine analysis was negative. Thus the diagnosis was pediatric enuresis and the treatment consisted of needling *Shao Fu* (Ht 8). The needle was inserted to a depth of 0.3-0.5 inches. Then supplementation method was used and the needle was stimulated by hand for one minute. After the arrival of the qi, the needle was quickly removed and not retained. After the needle was removed, the point was pressed. One treatment was given per day, and 10 consecutive treatments equaled one course of therapy. After three treatments, the child was able to gain consciousness if the family called to wake her. After 5-6 treatments, the child was able to wake herself to urinate. After nine treatments, there was no enuresis and the treatment was continued for the full course to secure the treatment results. A follow-up visit one half year later showed no recurrence.

Case 18:¹⁸

The patient was a six year-old male who was first examined on January 12, 1984. The parents of the child reported that he had had enuresis for six years. The child had already tried many formulas or medications without success. The doctor used *Zu Yun Gan Qu* (Foot Motor Sensory Area) with a three-inch needle as well as joining *Qi Hai* (CV 6) to *Qu Gu* (CV 2). These needles were removed and not retained after being stimulated strongly, and, after two treatments, the patient was cured. There was no reported recurrence after one and a half years of follow-up visits.

Case 19:¹⁹

This 17 year-old female had had enuresis since the age of six, and

she had already tried many forms of treatment with no success. The patient presented with a bright white facial complexion, a fat, pale tongue with teeth-marks on its edges and thin, white fur, a fine, deep pulse, low back and knee soreness and limpness, lack of strength in the four limbs, thin stools, dizziness, insomnia, poor memory, and prematurely graying hair. Based on these signs and symptoms, the patient's TCM pattern was categorized as spleen-kidney yang vacuity with lack of regulation of conception, governing, and penetrating vessels. After one treatment using acupuncture and moxibustion on *Hui Yin* (CV 1), the night-time enuresis stopped. However, therapy was continued for two more treatments to secure the treatment results. On follow-up after three months, the enuresis had not recurred.

Case 20:²⁰

The next case is of a 15 year-old female student. This patient was first seen on December 2, 1989. The young woman had had enuresis 1-3 times per night since childhood, and in the winter and autumn, the frequency of urination increased. Since the child began school at around the age of eight, she had seen many doctors but had yet to obtain any results. In the last two years, the girl had had an emaciated body, a yellowish facial complexion, scanty intake of food and drink, poor memory, and her school performance had declined. The patient also had a pale tongue with white fur, and her pulse was fine and weak. The pattern discrimination was spleen-kidney yang vacuity with severe enuresis. Moxibustion with a moxa pole was done every night before bed at *Shen Shu* (BI 23), *Pang Guang Shu* (BI 28), *Ji Men* (Sp 11), and *San Yin Jiao* (Sp 6). After one course of this treatment, *i.e.*, five treatments, the enuresis ceased and follow-up visits showed no recurrence.

Case 21:²¹

The patient was a 15 year-old male. The child had had enuresis since infancy and, therefore, had suffered for many years prior to the initial visit. The child had enuresis 1-2 times each night and his urine was clear and copious. In addition to the enuresis, the child had a bright white facial complexion, lack of warmth in his hands and feet, aversion to and fear of cold, occasional aching, limpness, and lack of strength in the low back, occasional dizziness, and a pale tongue with thin fur. Based on these signs and symp-

toms, his TCM pattern was categorized as kidney qi vacuity cold with the bladder not restraining and thus causing enuresis. The treatment principles were to warm and supplement kidney yang, boost the qi, secure and astringe. The following acupoints were used in the treatment of this case: *Guan Yuan* (CV 4), *San Yin Jiao* (Sp 6), *Shen Shu* (Bl 23), *Pang Guang Shu* (Bl 28), *Qi Hai* (CV 6), and *Zhong Ji* (CV 3). These points were alternated. The needles were retained for 30 minutes and stimulated every 2-3 minutes. Simultaneously, moxibustion was applied to the above points. After three treatments, the patient could control his bladder. To secure the treatment results, the same treatment was given five more times, at which time the case was considered cured.

Case 22:²²

This case is of a seven year-old male. The child presented with a sallow yellow facial complexion and slightly emaciated body. He had suffered from enuresis since having measles one year ago. His appetite was not normal, his stools were often thin and sloppy and contained untransformed food, and he often had to defecate after eating. Ordinarily, the child had profuse sweating and easily caught colds that led to coughing. Since having the measles, the enuresis was frequent but scanty in amount. Usually, the child would have enuresis 3-4 times per night. Besides being scanty, it was clear in color. The patient's tongue fur was thin and white, and his pulse was fine and moderate (or slightly slow). Based on the foregoing, the patient's Chinese medical pattern was lung-spleen dual vacuity, and the treatment principles for this were to fortify the spleen and boost the qi, supplement the kidneys and course and rectify the triple burner. It was decided to treat this case with acupuncture. The main points chosen were *Zu San Li* (St 36), *Bai Hui* (GV 20), *Yin Ling Quan* (Sp 9), and *Lie Que* (Lu 7). The auxiliary points were *Pi Shu* (Bl 21), *Guan Yuan* (CV 4), *Shen Shu* (Bl 23), and *Zhong Ji* (CV 3). In addition to needling the above points, indirect ginger moxibustion was performed on *Zu San Li*, *Pi Shu*, and *Guan Yuan* in order to warm and supplement the spleen and kidneys. After five treatments, the patient could wake himself to urinate once per night and, therefore, did not wet the bed. In addition, the patient's appetite was increased and his stool had some form. Therefore, treatments were continued for five more times, at which time the case was considered cured.

Case 23:²³

This patient was a 14 year-old male student who was initially seen on March 12, 1985. This patient had suffered from enuresis for 10 years and had tried many treatments without success, including Chinese and Western medicine, herbal formulas, and empirical formulas. This individual had enuresis one time per night which, in winter, increased to three times per night. The young man had a lusterless, yellow facial complexion, a fatigued spirit, an emaciated body, torpid intake, a pale tongue with thin, white fur, and a fine pulse. After the doctor used scalp acupuncture on *Zu Yun Gan Qu* (Foot Motor Sensory Area) one time, the patient had enuresis only one time in 2-3 nights. After the second treatment, the patient had enuresis one time in one week. After the third treatment, the enuresis had disappeared. A fourth treatment was given to secure the treatment results, after which time this case was considered cured. Follow-up visits two and five years later showed no recurrence.

Tuina**Case 24:²⁴**

This patient was an 11 year-old boy who was first examined on August 11, 1991. The child had suffered from enuresis since infancy without interruption. The patient presented with enuresis 3-4 times each night. This enuresis was accompanied by emaciation, a lusterless facial complexion, torpid intake, a pale tongue with thin, white fur, and a fine, deep pulse. The following points were treated with tuina: *Zhong Wan* (CV 12), *Qi Hai* (CV 6), *Guan Yuan* (CV 4), *Zhong Ji* (CV 3), *Zu San Li* (St 36), *San Yin Jiao* (Sp 6), *Bai Hui* (GV 20), *Ming Men* (GV 4), *Pang Guang Shu* (Bl 28), and *Ba Liao* (Bl 31-34). After one treatment, the enuresis was decreased to two times and the child was able to wake himself to urinate. After seven treatments, the enuresis had disappeared. Treatment was continued for another seven days to secure the therapeutic results. During this time, the boy's appetite increased, his facial complexion became rosy, and his body became stronger. The next visit after 14 days showed that the enuresis had reappeared after the child forgot to urinate before climbing a tree. The previous method was used for seven more days, and a follow-up visit six months later showed no recurrence.

Case 25:²⁵

This patient was a five year-old girl who was initially assessed on September 17, 1984. The child had had enuresis since infancy and had used many formulas without success. The patient had enuresis 1-2 times per night, frequent, short urination during the day that looked like rice-washing water, devitalized appetite, bright white facial complexion, fatigued essence spirit, lack of strength when moving about, a pale tongue with thin, white fur, and a slow, deep, forceless pulse. Based on these findings, her TCM pattern was discriminated as lower origin vacuity cold and spleen qi vacuity weakness and the treatment principles were to warm the kidneys and secure and contain, fortify the spleen and boost the qi. Tuina consisted of rubbing the following points for two minutes each: *Dan Tian* (CV 4-6), *Guan Yuan* (CV 4), *Qi Hai* (CV 6), *San Yin Jiao* (Sp 6), and *Gui Wei* (GV 1). Then the pushing method was used on the following areas: *Shen Shui* (Kidney Water), 200 times with supplementation method, *Xiao Chang* (Small Intestine), 100 times with draining method, and *Pi Tu* (Spleen Earth), 200 times with supplementation method. *Ba Liao* (BI 31-34) was also rubbed until this area became warm. On the return visit, the child had had enuresis one time per night. After three treatments, the little girl would respond when the parents called her to wake to urinate, and her daytime urination was not as frequent and was less in amount. After continuing for seven treatments, her appetite had returned to normal and her enuresis was cured.

Combined therapies**Case 26:**²⁶

This patient was a six year-old male whose initial visit occurred on June 23, 1994. This child had suffered from chronic enuresis. The child had enuresis at least one time per night and as many as 2-3 times per night. Other signs and symptoms included a bright white facial complexion, an emaciated, weak body, cold limbs, frequent, long, clear urination, a pale tongue with thin, white fur, and a deep, slow, forceless pulse. Therefore, the diagnosis was enuresis due to kidney qi insufficiency and lower origin vacuity cold. The treatment principles were to warm and supplement the kidney qi and secure and astringe the lower origin. First *Shen Jing* (Kidney Channel) was massaged with supplementation method. Then *Dan*

Tian (CV 4-6) and *Gui Wei* (GV 1) were kneaded 100 times each. One treatment was given per day, and seven times equaled one course of therapy. After massaging the child, moxa was used with the warming method on the acupoints *Guan Yuan* (CV 4) and *San Yin Jiao* (Sp 6). Each point was stimulated for five minutes. Each day, this treatment was given one time, and seven times also equaled one course of treatment. After applying this treatment one time, the child slept more peacefully and had no enuresis. After continuing to use this method one time a day for one week, the enuresis was eliminated and all other symptoms improved.

Case 27:²⁷

The patient in this case was an eight year-old female whose initial visit took place on June 12, 1995. This child had suffered from enuresis for many years, and, typically, her urination was frequent but scanty. Its color was clear and there was no pain. The enuresis was accompanied by a white facial complexion, an emaciated body, fatigued spirit, lack of strength, scanty appetite, and sloppy stools. Normally, the child also had spontaneous perspiration and night sweats. Her tongue was pale with thin, white fur, and her pulse was moderate (or slightly slow) and fine. Based on these signs and symptoms, the patient's diagnosis was enuresis of the spleen-lung vacuity type. Therefore, the treatment principles were to supplement and warm the lungs and spleen and secure and astringe the lower origin. Before doing anything else, *Pi Jing* (Spleen Channel) and *Fei Jing* (Lung Channel) were massaged with supplementation method. Next, *Wai Lao Gong* (Outer Palace of Labor) was kneaded 100 times. This treatment was given once per day, and seven times equaled one course of treatment. After massaging the foregoing points, moxa was used with warming method on the acupoints *Guan Yuan* (CV 4) and *Zu San Li* (St 36). Each point was stimulated for five minutes, and each day the treatment was given one time. Seven times also equaled one course of treatment. After one course of this tuina and moxibustion, the frequency of the enuresis was reduced. After two courses of treatment, the enuresis had disappeared, the patient's spirit was clear, her appetite was improved, and her tongue and pulse were normal.

Case 28:²⁸

The patient in this case was a 14 year-old female whose initial examination occurred in July 1993. This patient's main complaint

was enuresis one time every 2-3 days for the past year. Her main symptoms included night-time urination, frequent, scanty urination, shortness of breath, a timorous voice, devitalized spirit, lack of strength, profuse sweating on exertion, devitalized appetite, thin, sloppy stools, a lusterless facial complexion, a pale tongue, and a moderate (or slightly slow), weak pulse. The treatment principles in this case were to fortify the spleen and boost the lungs in order to secure and contain. Treatment consisted of acupuncture with supplementation method and moxibustion at *San Yin Jiao* (Sp 6), *Guan Yuan* (CV 4), and *Pi Shu* (Bl 20). In addition, the patient was administered the following Chinese medicinals: *Dan Shen* (Radix Salviae Miltiorrhizae), *Dang Gui* (Radix Angelicae Sinensis), *Bai Zhu* (Rhizoma Atractylodis Macrocephalae), *Gan Cao* (Radix Glycyrrhizae), and *Sheng Ma* (Rhizoma Cimicifugae), 10g each, and *Chen Pi* (Pericarpium Citri Reticulatae), *Huang Qi* (Radix Astragali), and *Chai Hu* (Radix Bupleuri), 15g each. One packet of these medicinals were decocted in water and administered per day. The patient took six packets along with *Wu Zi Yan Zong Wan* (Five Seeds Increase Progeny Pills). After taking these medicinals for two weeks, there was no enuresis and all the other symptoms were improved. The treatment was then switched over from decocted medicine to using *Bu Zhong Yi Qi Wan* (Supplement the Center & Boost the Qi Pills) and *Ren Shen Jian Pi Wan* (Ginseng Fortify the Spleen Pills). One pill of each was taken each morning and evening. The doctor also insisted that the patient continue taking the medicinals for two months in order to deal with the after effects of the disease by supplementing and boosting the middle qi, fortifying the spleen, and harmonizing the stomach. On follow-up after six months, there was no recurrence.

Case 29:²⁹

This patient was a 12 year-old female whose initial visit occurred in May 1989. Her main complaint was that she urinated in her bed as many as three times per night, and the urine had a peculiar smell. This had gone on for more than five years. In addition, there were short voidings of yellow urine, rashness, impatience and irascibility, a red facial complexion and lips, sometimes fear and fright of unreal matters, red tongue margins and tip with yellow fur, and a bowstring, slippery pulse. Based on these findings, the treatment principles were to clear heat, discharge heat and disinhibit dampness. The girl was prescribed the following

Chinese medicinals: *Long Dan Cao* (Radix Gentianae), 15g, and *Zhi Zi* (Fructus Gardeniae), *Chai Hu* (Radix Bupleuri), *Huang Qin* (Radix Scutellariae), *Mu Tong* (Caulis Akebiae), *Ze Xie* (Rhizoma Alismatis), *Dang Gui* (Radix Angelicae Sinensis), *Che Qian Zi* (Semen Plantaginis), *Sheng Di* (uncooked Radix Rehmanniae), and *Gan Cao* (Radix Glycyrrhizae), 10g each. One packet of these medicinals was decocted in water and taken per day along with *Er Miao Wan* (Two Wonders Pills). In addition, the patient received acupuncture at *Guan Yuan* (CV 4), *San Yin Jiao* (Sp 6), *Tai Chong* (Liv 3), and *Li Gou* (Liv 5) with draining method. After taking the medicinals for 10 consecutive days, the enuresis and other symptoms were cured. Acupuncture was then continued for one month. The patient also took *Long Dan Xie Gan Wan* (Gentiana Drain the Liver Pills) and *Er Miao Wan* (Two Wonders Pills) for one month. There was no recurrence on follow-up six months later.

Endnotes:

¹ Weng Hua-ying, "The Clinical Uses of *Gui Zhi Tang* (Cinnamon Twig Decoction) in Pediatrics," *Zhe Jiang Zhong Yi Za Zhi* (Zhejiang Journal of Chinese Medicine), 1999, #2, p. 202

² Cheng Li-chang, "Variation of *Gui Zhi Jia Long Gu Mu Li Tang* (Cinnamon Twig, Dragon Bone & Oyster Shell Decoction) to Treat 104 Cases with the Pattern of Lower Origin Vacuity Cold," *An Hui Zhong Yi Lin Chuang Za Zhi* (Anhui Clinical Journal of Chinese Medicine), 1999, #2, p. 99

³ Wang Xue-fei, "New Uses of *Zhen Wu Tang* (True Warrior Decoction)," *Gui Yang Xue Yi Yuan Xue Bao* (Academic Journal of Guiyang Medical College), 2000, #3, p. 321-322

⁴ Chen De-rong & Song Ming-suo, "The Treatment of Pediatric Diseases with *Bu Zhong Yi Qi Tang* (Supplement the Center & Boost the Qi Decoction)," *Shan Xi Zhong Yi* (Shanxi Chinese Medicine), 2000, #3, p. 51-52

⁵ Xie Zi-cheng, "The Clinical Use of *Gan Jiang Ling Zhu Tang Jia Jian* (Licorice, Ginger, Poria & Atractylodes Decoction with Additions & Subtractions) in the Pediatric Department to Treat Enuresis, Diarrhea, Prolapsed Anus & Asthma," *Shang Hai Zhong Yi Yao Zao Zhi* (Shanghai Journal of Chinese Medicine & Medicinals), 1987, #12, p. 17

⁶ Zhou Zhong-li, "The Treatment of Enuresis with *Ma Huang Fu Zi Gan Cao Tang* (Ephedra, Aconite & Licorice Decoction)," *Si Chuan Zhong Yi* (Sichuan Chinese Medicine), 1987, #5, p. 25

⁷ Lin Jia-shen, "Ge Gen Tang (Puerariae Decoction) for the Treatment of Enuresis," *Si Chuan Zhong Yi* (Sichuan Chinese Medicine), 1987, #5, p. 25

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Conclusion

I trust the information I have provided in this book will help more of our “little friends” achieve more dry nights and better health. Hopefully, this information will encourage more practitioners to treat this condition and more families to take steps to conquer this all too common childhood disease. It is also my hope that the information in this book encourages more clinical trials on the TCM treatment of enuresis in non-Chinese patient populations. In closing, please remember that, no matter what treatment modality is chosen, the treatment will not be successful if the parents and the child do not have a co-operative attitude. Treatment will also be unsuccessful if the family’s social structure and home environment does not provide consistent support and love for the child.

Appendix 1: Nocturnal Enuresis In-take Form

Name: _____

Birthdate: _____ Sex: _____

Height: _____ Weight: _____

1. How long has your child had nocturnal enuresis?

2. Have any of the following members in the child's family suffered from enuresis before? Check all that apply:

- | | |
|---|---------------------------------------|
| <input type="checkbox"/> Brothers/sisters | <input type="checkbox"/> Uncles/aunts |
| <input type="checkbox"/> Parents | <input type="checkbox"/> Cousins |

3. Have your child ever been diagnosed as having a urinary tract infection?

- ☐ Yes ☐ No

4. How many times a night/week/month does your child wet the bed?

5. How many hours does your child sleep before wetting the bed?

- | | |
|------------------------------|-------------------------------------|
| <input type="checkbox"/> 2-3 | <input type="checkbox"/> 8-9 |
| <input type="checkbox"/> 4-5 | <input type="checkbox"/> Over 9 |
| <input type="checkbox"/> 6-7 | <input type="checkbox"/> Don't Know |

6. Does your child wet his or her clothes during the day?

- | | |
|---------------------------------------|--------------------------------|
| <input type="checkbox"/> No | <input type="checkbox"/> Often |
| <input type="checkbox"/> Rarely | <input type="checkbox"/> Daily |
| <input type="checkbox"/> Occasionally | |

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7. Have you tried any of the things below to help treat your child's enuresis?

- | | |
|---|---|
| <input type="checkbox"/> Limit fluids | <input type="checkbox"/> Reward success |
| <input type="checkbox"/> Wake child up | <input type="checkbox"/> Other (please specify) |
| <input type="checkbox"/> Punish failure | _____ |

8. Is your child ever teased, bullied or humiliated for being a bedwetter?

- ☐ Yes
☐ No
☐ Don't know

9. Has your family, or your child, had to miss any of the following activities because of bedwetting?

- | | |
|--|--------------------------------------|
| <input type="checkbox"/> Sleeping out | <input type="checkbox"/> Class trips |
| <input type="checkbox"/> Sleep-over visits | <input type="checkbox"/> Summer camp |
| <input type="checkbox"/> Family vacation trips | |

10. From your child's point of view, please check all the reasons why he or she wants to overcome bed-wetting. Then please indicate by checking the most important.

- ☐ Build self-esteem
☐ Feel more confident
☐ Avoid humiliation
☐ Share family experiences
☐ Be equal with other children
☐ Go to camp or sleep overs
☐ Be able to share a bed with brothers/sisters
☐ Other

11. What time does your child go to bed?

12. What time does your child fall asleep?

13. What time does your child wake up in the morning usually?

14. Describe your child's sleep:

☐ light ☐ normal ☐ heavy (check one)

15. If you think your child is a heavy sleeper? Please describe why.

16. Does your child have any of the following symptoms during sleep? (please check)

☐ restlessness ☐ snoring ☐ nightmares ☐ sleepwalking

17. Diet history: In general what is the time, quantity and type of fluid and solid food intake from the end of school to bedtime?

18. At what age did toilet training start?

At what age did your child control bowel movements?

At what age was daytime urinary control obtained?

19. In addition to enuresis does your child suffer from any of the following symptoms? (please check)

Urine

A) Amount : ☐ scanty ☐ profuse

B) Color: ☐ light yellow ☐ dark yellow ☐ pale ☐ cloudy

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- C) Other: ☐ foul smelling ☐ frequent burning feeling
☐ dribbling after ☐ lack of awareness (they are urinating)
☐ enuresis without trying to get to the toilet

Complexion

- ☐ Pale ☐ white ☐ lusterless ☐ scanty luster
☐ red ☐ blue-green

Thirst

- ☐ Scanty ☐ excessive ☐ normal

Appetite

- ☐ Poor ☐ excessive ☐ normal

Pulse

- ☐ Floating ☐ deep ☐ slow ☐ fast ☐ forceful
☐ forceless ☐ fine ☐ wide ☐ bowstring ☐ slippery

Tongue body

- ☐ Pale ☐ red

Tongue fur

- ☐ Thin ☐ thick ☐ yellow ☐ white ☐ slimy ☐ dry

Stool

- ☐ Constipation ☐ diarrhea ☐ thin ☐ sloppy ☐ dry

General

- ☐ Lassitude of the spirit ☐ lack of strength ☐ cold limbs
☐ red, dry lips ☐ Rash and impatient nature
☐ heat in the palms and soles ☐ excessive sweating

Appendix 2:

Tips for Dryer Nights: Simple Things You Can Do To Help Make More Nights Dry

The following tips may be used preventively or may be used as an adjunct to other treatments. They are the things I tell the parents of my patients with enuresis. The reader may feel free to use these tips in their own clinic, make copies for handouts, or modify them as they see fit.

Tips for children of any age

1. Encourage your child to get up to urinate during the night.

Tell your child at bedtime to try to get up in the night if they have to urinate.

2. Improve access to the toilet.

Put a night light in the bathroom. If the bathroom is at a distant location, try to put a portable toilet in your child's bedroom.

3. Encourage daytime fluids.

Encourage your child to drink a lot during the morning and early afternoon, and restrict fluids after dinner. Many children drink very little during the day and this causes their bladder capacity to be smaller than it should be. Lack of fluid during the day may also cause the child to be thirsty at night.

4. Discourage evening fluids.

Discourage your child from drinking a lot during the two hours before bedtime.

5. Empty the bladder at bedtime.

Even if your child says they do not have to urinate have the child make it a habit to try each evening. Sometimes the parent need to remind the child. Older children may respond better to a sign at their bedside or on the bathroom mirror.

6. Take your child out of diapers or pull-ups.

Although this protective layer makes morning clean-up easier and protects the bed, it can interfere with motivation for the child to get up at night to use the bathroom. A few experts think this may even prolong bed-wetting but no studies have been done to show this to be true. Use pull-ups or special absorbent underpants selectively for camping or overnights at other people's homes. Use them only if your child wants to use them. They should rarely be permitted beyond age eight. These absorbent products should be discontinued for a few months while the child is on the program.

7. Protect the bed from urine.

Odor becomes a problem if urine soaks into the mattress or blankets. Protect the mattress with a plastic mattress cover.

8. Include your child in morning clean-up.

Including your child as a helper in stripping the bedclothes and putting them into the washing machine provides a natural disincentive for being wet. Older children can perform this task independently. Also, make sure that your child takes a shower each morning so that he or she does not smell of urine in school.

9. Respond positively to dry nights.

Praise your child on mornings when he wakes up dry. A calendar with gold stars or happy faces for dry nights may also help [see "Star charts & point systems" under treatments].

10. Respond gently to wet nights.

Never punish your child, as they are not bed-wetting on purpose. Children who suffer from enuresis feel guilty and embarrassed about this problem and blame and punishment by the parent only increases these feelings. They need patience, support and encouragement. Siblings should not be allowed to tease bed-wetters. Your child needs to feel safe in their home. Punishment or pressure will delay a cure and cause secondary emotional problems.

Tips for children six years and older

Follow the previous recommendations in addition to the guidelines given below:

1. Help your child understand his/her goal.

Explain that the key to becoming dry is to learn how to self-awaken when they need to urinate at night and find the toilet. Getting up and urinating during the night can keep your child dry regardless of how small the bladder is or how much fluid they drink. Help your child take responsibility for doing this. Some children think that enuresis is the parent's problem to solve; they need to be reminded that this is not the case.

2. Have a bed-time pep talk about self-awakening.

To help your child learn to awaken himself at night, encourage him to practice the following routine at bedtime:

- Lie on your bed with your eyes closed.
- Pretend it's the middle of the night.
- Pretend your bladder is full.
- Pretend you feel the pressure.
- Pretend your bladder is trying to wake you up.
- Pretend your bladder is saying, "Get up before it's too late."
- Then run to the bathroom and empty your bladder.
- Remind yourself to get up like this during the night.

3. Daytime practice of self-awakening.

Whenever the child has an urge to urinate and they're home, have

them go to their bedroom rather than the bathroom. Tell them to lie down and pretend they're sleeping. Remind them this is how your bladder feels during the night when it tries to wake them. After a few minutes, have them go to the bathroom and urinate (just as they should at night).

4. Parent-awakening.

If self-awakening fails, use parent-awakening to teach your child the correct goal, *i.e.*, urinating into the toilet during the night. It makes much more sense than putting a child back into pull-ups and having them urinate in their bed every night (the wrong goal). The parent's job is to wake the child up at set times during the night (1-2 times); the child's job is to locate the bathroom and use the toilet. The parents may wake the child before they go to bed if this is a few hours after the child has gone to bed. Try a hierarchy of prompts, the minimal one being the best, ranging from turning on a light, saying his name, touching him, shaking him or turning on an alarm clock. If your child is confused and very hard to awaken, try again in 20 minutes. Once they are awake, they should be encouraged to find the bathroom without any directions or guidance.

5. Encourage changing wet clothes during the night.

If the child wets at night, they should try to get up and change clothes. First, if the child feels any urine leaking out, they should try to stop the flow of urine. Second, they should hurry to the toilet to see if they have any urine left in their bladder. Third, they should change themselves and put a dry towel over the wet part of the bed. (This step can be made easier if you always keep dry pajamas and towels on a chair near the bed.) Do not allow your child to climb into your bed or a brother or sisters bed after wetting. Basically make clean-up quick and matter of fact, no big fuss, and encourage your child to help. This way the two of you can work together to help each other get back to sleep. The child who shows the motivation to carry out these steps is close to being able to awaken from the sensation of a full bladder.

6. Praise your child for positive behavior that will eventually lead to a dry bed (see "Star charts & reward systems").

Examples of positive behavior include earlier bedtime to avoid

over-tiredness, getting up to go to the toilet at night, calling the parent if they have a wet patch, washing themselves after wetting and helping to change the bedding and their clothes

7. Parents need to talk to the child about bed-wetting

The parents need to talk to their child about bed-wetting and let them know that lots of other kids wet their bed and they are not alone. The parents need to let their child know they love him/her, and that they understand how he/she feels. The child should be reminded that wetting the bed is not his or her fault. The child should be given an explanation of what is happening. (see "Hypnotherapy & guided imagery" for more information.) If the parent or another family member wet the bed as a child, they should share this experience with the child. Make the child understand that it sometimes runs in families because this can help reduce the child's anxiety or feeling that there is something "wrong" with him or her. If the child has secondary nocturnal enuresis, the parent should ask the child to discuss what is bothering him or her to determine if stress is the cause.

Appendix 3: Guided Imagery Exercise

This guided imagery exercise has two parts, the explanation and the guided imagery itself. It can also be useful to combine these explanations with pictures to further explain if at all possible.

1. Explanation

In your body, it is the kidney's job to make urine which then goes down some tubes into the bladder. This bladder is similar to a water balloon, but, instead of holding water, it holds urine. The bladder has a doorway controlled by its muscles that hold the urine in and prevent it from leaking. When the bladder is full, it sends a message to tell the brain to open this door. In order for someone to be a boss of their urine, all these parts must work together. In other words, the kidneys must make the right amount of urine, the bladder must hold the urine and tell the brain when it is full, and then the brain must either tell the bladder to keep the door closed until morning or tell the child to wake up to use the toilet.

a) Guided imagery

Have your child relax, close their eyes, and listen to what you say. Start by saying: your kidneys are a pee factory that makes urine during the day and night. Your bladder is a storage tank that holds the pee until it is time to put it in the toilet. There is a gate or muscle that holds the pee in the bladder until you are ready. During the day, you are in control of the gate, but at night, some of the pee has been sneaking out. You are going to begin taking control while you sleep. When the bladder starts to fill up, you will control the gate when you are asleep, like you do when you are awake. You will pee in the toilet when you are ready to.

Appendix 4: How to Measure A Child's Bladder Capacity

Any parent can measure their own child's bladder. The parent should have the child hold his or her urine as long as possible before urinating into a container on at least three separate occasions. The amount of urine is measured in ounces each time, and the largest amount is considered that child's bladder capacity. The normal capacity for children is 1-2 or more ounces (*i.e.*, 30-60 milliliters) per year of age.

Appendix 5: Hints On Prescribing & Administering Chinese Herbs to Children

Many practitioners of Chinese medicine may think that it is difficult to prescribe and administer Chinese herbal medicinals internally to infants and children. However, this is not my experience. For older children who can swallow them (including children with enuresis), I recommend administering Chinese herbal medicinals in the form of powdered extracts in capsules or ready-made medicines in pill form. In this case, all one needs to do is reduce the dosage proportionately according to the child's age and/or body weight. The following table shows suggested dosages based on age.

0-1 month	1/18-1/14 of adult dose
1-6 months	1/14-1/7 of adult dose
6-12 months	1/7-1/5 of adult dose
1-2 years	1/5-1/4 of adult dose
2-4 years	1/4-1/3 of adult dose
4-6 years	1/3-2/5 of adult dose
6-9 years	2/5-1/2 of adult dose
9-14 years	1/2-2/3 of adult dose

The next table bases children's dosages on their body weight.

30-40 lbs.	20-27% of adult dose
40-50 lbs.	27-33% of adult dose
50-60 lbs.	33-40% of adult dose
60-70 lbs.	40-47% of adult dose
70-80 lbs.	47-53% of adult dose
80-100 lbs.	53-67% of adult dose
100-120 lbs.	67-80% of adult dose
120-150 lbs.	80-100% of adult dose

If the child is willing to drink a bulk-dispensed, water-based decoction, then I suggest adjusting the normal dosages per ingredient by the above fractions or percentages and prescribing each packet accordingly. It is also possible to use either alcohol- or glycerine-based tinctures. Personally, I prefer glycerine-based tinctures due both to their taste and freedom from alcohol. However, I know of practitioners who use nothing other than alcohol-based tinctures with seemingly excellent results. Such tinctures may either be purchased ready-made or may be made by the practitioner. If one uses some common sense and is not shy about prescribing and administering Chinese medicinals to babies and children, they will find this is not as difficult as many (including some doctors of Chinese medicine) might imagine.

Appendix 6: Hints on Administering Acupuncture & Moxibustion to Children

Acupuncture

Some practitioners may be hesitant to needle young children. Likewise, many parents may be squeamish about their children being needled. However, in my experience, most children do quite well with acupuncture. In general, I recommend using thin gauge needles with minimal hand stimulation. If it is judged that hand stimulation is important to the outcome of treatment, then I recommend not retaining the needle(s) after that stimulation.

Typically, children get good results for the treatment of enuresis from only a few needles per treatment and a few treatments. In China, once it has been decided to treat a bed-wetting child with acupuncture, the child is simply held in place and the needling is done regardless of the child's reaction. More than once I have sat through 20 minutes of non-stop tears and crying as the child had to be forcibly restrained by their parent or an assistant. This kind of determined treatment is less likely to be accepted by Western parents. If the child has a great fear of needles or is highly reactive to the first insertion, the practitioner may decide that another treatment modality is more appropriate, such as magnets, laser therapy, non-invasive electro-stimulation of acupoints, acupressure, tuina, and internally administered or externally applied Chinese medicinals. This is one reason why practitioners need to have a number of different treatment options when addressing this condition in children.

Moxibustion

Moxibustion has been used in a number of studies included in this book. In my experience, this is best done with a moxa pole or roll. Direct and indirect moxibustion are less appropriate for children. First, there is children's tendency to squirm and move about, and secondly, we do not want to cause a burn that will pustulate and scar. Many children like warming moxibustion with a moxa pole. In addition, this can usually be taught to the parent or home care-giver so that the treatment can be done at home.

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