

TREATMENT BY CHINESE MEDICINE

LIVER & GALLBLADDER

BASED ERECTILE DYSFUNCTION

(Part One)

by Shawn Soszka

Abstract

The purpose of this article is to demonstrate Liver/Gallbladder zangfu disharmony as a possible aetiological manifestation of erectile dysfunction. This is done by the examination of ancient Chinese medical theory in conjunction with the latest research from China. One of the goals of this article is to dislodge the fixed notion that erectile dysfunction is synonymous with Kidney yang deficiency; it is just one of many pattern differentials that must be considered. The Liver/Gall Bladder organ pair was selected, as there are several erectile dysfunction-causing disorders that affect these zangfu.

Part One of this article examines the physiology and pathology of the erection process from both the biomedical and Chinese medicine (CM) perspectives. The Chinese medicine pattern differentiation examines all of the various patterns associated with erectile dysfunction. Part Two of this article (to be published in JCM 69) will focus on treatment, including acupuncture, dietetics and herbal therapies, with special attention paid to individual herbs well known for their beneficial effects in treating impotence.

The two appendices examine the more commonly understood Chinese medicine aetiological patterns of impotence and the Daoist theory of semen retention.

Introduction

The penis does not obey the orders of its master, who tries to erect or shrink it at will. Instead, the penis erects freely while its master is asleep. The penis must be said to have its own mind, by any stretch of the imagination.

Leonardo Da Vinci

Reproduction is one of the three essentials, along with food and air, to sustain life. Sexual activity as part of reproduction and as intimate expression is an integral part of existence for all cultures. Sadly, difficulty functioning in this capacity is common and the source of anguish for many men and their partners. Erectile dysfunction affects about half of the male population at least once in their lifetime¹. In both biomedicine and Chinese medicine there has long

been interest in the function and disease of the male reproductive organ. It is this long-standing interest, and my professional focus upon men's health, that provoked the writing of this article.

Purpose

Erectile dysfunction is often synonymous with Kidney yang deficiency in the minds of many western TCM practitioners. The purpose of this article therefore is to demonstrate that one of the typically overlooked patterns of erectile dysfunction is disharmony of the Liver and Gall Bladder.

It is important to recognise however, that while this article focuses upon the Liver/Gall Bladder in relation to erectile dysfunction, there is vast intercommunication between the zangfu. Therefore, the recognition of the interconnectiveness in the zangfu system and how each zangfu can influence the other reminds the practitioner to see a disease pattern as a disorder of the primary organ and its organ interconnections.

This article consists of four parts, i. the classical Chinese medical theory of erectile pathophysiology, ii. the biomedical theory of erectile pathophysiology, iii. biomedical diagnostics, iv. Chinese medicine differential diagnosis - with special attention given to the Liver and Gall Bladder.

Definitions

The generally accepted definition of erectile dysfunction is dissatisfaction with size, rigidity or duration of erection². A more concise definition of erectile dysfunction is "difficulty achieving and/or maintaining an erection". The aetiology of erectile dysfunction may be physical or psychological/relational in origin³. Typically, the aetiology varies by age group, with psychological or primary organic disorders (including congenital) being presented by patients between adolescence and the third decade. It is commonly found that patients in their sixth decade present with what they describe as physical problems that are often identified as relational problems. Those patients presenting with physical disorders are often in their seventh and eighth decade. In the latter age group, sexual dysfunction is often under-reported⁴.

Statistics

According to the Massachusetts Male Ageing Study, minimal, moderate and complete erectile dysfunction occurred in more than 50% of men between the ages of 40 and 70. As men age, the incidence of impotence can increase dramatically - as much as threefold between the ages of 40 to 70 years. Additional causes include heart disease, hypertension, diabetes, adverse drug effects, and emotional components (especially anger, depression, and aggressive personality).

Chinese medical theory of erectile pathophysiology

The diagnosis and treatment of erectile dysfunction requires a detailed understanding of the zangfu involved, which include the Heart, Spleen, Liver and Kidney. Each of these organs is involved in the erection process either directly or indirectly. This section focuses upon the function of, and interaction between, the zangfu in relation to the erection process. It is important to understand the pathophysiology of erectile dysfunction from the Chinese medical perspective, especially as the treatment of impotence using Chinese medicine appears to be more effective than western medical therapies.

Pathophysiology of the zangfu

Liver

The Liver as governor of the penis can be explained by the theory of "zong jin" which essentially means "meeting of the ancestral, or one hundred, sinews". While these terms are interchangeable, the translation "ancestral sinew" gives a more complete understanding, as there are two meanings in its name. First, since the Liver is the ruler of the tendons and sinews, the penis is thought of as a point of sinew convergence. The ancient scholars referred to this large gathering of sinews as "ancestral" emphasising its importance and the immensity of the number of sinews that come together to make up the penis. The term "ancestral sinew" also reflects the obvious reproductive role of the penis.

The penis is anatomically associated with the muscles surrounding the perineum and penis⁵. For this ancestral sinew to harden and become erect, it needs both blood and qi. The Liver, in its healthy state, has a free flow of qi and controls the storage of blood and the emotions, and when it can course freely a balanced emotional state ensues allowing for healthy mental-emotional well-being. When the Liver is assaulted by the emotions of frustration, anger and depression, stagnation of Liver qi may occur. In addition, flaccidity of the zong jin is considered to be a special type of "wei" or flaccid/wasting syndrome, which will be examined in greater detail later in the article.

Both the upward and outward nature of the erecting penis, which parallels the nature of the wood element, and the fact that the Liver channel encircles the genital region, give the Liver such a strong influence over the penis.

Gall Bladder

The Gall Bladder shares with the Liver the function of controlling the sinews. The primary difference between the two zangfu being that the Liver directs blood to the sinews

while the Gall Bladder provides the sinews with qi⁶. On a psychological level, this organ is like the "platoon sergeant" of the zangfu, controlling an individual's ability to make decisions, take initiative and act with courage. Gall Bladder deficiency is characterised by timidity and cowardice - in fact, the Chinese refer to cowardly behaviour as "having a small Gall Bladder". Men who suffer from such a deficiency are timid and often out of touch with their male sexuality⁷. On a deeper level, the Gallbladder has an outward moving energy and is represented by the I Ching hexagram twenty-four "Fu" in the twelve-organ system theory⁸. This hexagram is represented as thunder in the centre of the earth⁹, creating an explosive energy that overcomes obstacles. It is this explosive movement that creates the decisive "let's go" energy associated with this fu. Furthermore, the Gall Bladder is affected by psychological issues of guilt, shame, and any sense of "feeling dirty", as it is the storehouse of "pure fluids", and in a sense the storehouse of "clean thoughts"¹⁰.

There exists a "clock pair" relationship between the Gall Bladder and the Heart, with the Gall Bladder lending courage to the mind, which is ruled by the Heart. Together, the Heart and Gall Bladder maintain the purity of the body, with the Gall Bladder in charge of purifying the body of physical and psychological toxins, and the Heart seeking spiritual purity¹¹. For proper sexual function the Heart must be quiet and the Gall Bladder must be decisive¹².

The ministerial fire that originates in the Kidney is stored in the Liver, Gall Bladder and Pericardium via the Sanjiao (triple warmer) and is referred to as "xiang huo". Disorder of xiang huo can negatively influence the erection process^{13,14}.

Kidney

The Kidney plays a crucial, but not exclusive role in controlling the penis. The Kidney yang qi assists the Liver qi in the process of erection and has a strong effect on sexual desire. The Kidney yin works with the Liver in providing the proper amount of blood to the penis to sustain erection. The Kidneys have more control over the testicles and the production of sperm and the two "yin orifices", the urethra and the anus. Therefore, weakness of the Kidney yin can lead to infertility, deficiency of the Kidney yang qi may cause erectile dysfunction, and exuberant yang qi may lead to premature ejaculation¹⁵.

Heart

As emperor of the zangfu, the Heart rules the blood. During the erection process the Heart directs blood to the penis through the lower jiao. The erection of the penis depends upon Heart fire connecting to the penis through the Penetrating vessel (Chong mai)¹⁶. The Heart shen also leads qi to the penis, which in turn directs blood to the penis thus creating an erection¹⁷. A disharmony of the Heart shen, Penetrating vessel or blood can create erectile dysfunction. A disturbance of the Heart shen can be a causative factor in psychogenic based erectile dysfunction¹⁸. Such a disturbance may manifest as excessive sexual fantasies and masturbation, with difficulties having sexual intercourse¹⁹. When the Heart shen is disturbed it is easily scattered. The scatter-

ing of shen prevents qi from being led to the penis, and impotence occurs²⁰. In addition, a disorder of the Heart's imperial fire can cause a disturbance of the Kidney ministerial fire, creating impotence²¹.

The ancient scholars recognised that the Heart coupled with the Gall Bladder were the rulers of sexual function²². The ancient Chinese character for the Heart better represents this function than the modern character for Heart. The ancient character has been interpreted to symbolise "sexual connectivity" or "creating oneness through physical intimacy"²³. The sexual nature of the Heart, is that of unity - "two becoming one". It is the unity of the "tantric embrace" which best represents the role the Heart plays in sexual affairs. This is seen in hexagram forty-four "Gou", referred to as "intercourse" or "encounter" in the I Ching²⁴. The sexual interpretation of "Gou" is that of intercourse from the feminine perspective and reinforces the "becoming one" aspect of sexuality²⁵.

Spleen and Stomach

The penis gets nourishment from the yangming²⁶, and disorders of the Spleen and Stomach can therefore contribute to erectile dysfunction. It is important to remember that the Spleen and Stomach serve as the post-natal source of qi and blood; when there is insufficient qi and blood the penis cannot become erect. When the Spleen is unable to transform and transport body fluids, accumulation of dampness occurs. This usually manifests in the lower jiao and can be transformed into damp-heat which can impede the erection process. Overindulgence in thinking can also damage the Spleen and Stomach, leading to qi deficiency²⁷.

The Chinese medicine perspective on the erection process

There are four physiological factors that must contribute to the erection process to successfully sustain an erection: blood, shen, qi and jing. The blood must flow to the penis to cause it to swell and harden. When the shen is in harmony, it can focus upon the penis to create sexual desire. Proper qi flow to the penis creates a sensation of heat within the penis. Finally, jing must flow to the penis to bring forth the ejaculation²⁸.

There is a natural, harmonious process to the sexual act. This process has been studied and written upon in detail by Chinese physicians. It is apparent that a great deal of frustration is found on the part of both sexes within Western society in the quest for the fulfilment of sexual needs. This issue has been long addressed within Chinese and Daoist medical literature. A feature that appears unique to Chinese "sexology" literature is the concept of the sexual act as a therapy for optimal health when using proper technique and fostering a sexually mature attitude (see *Appendix A*). The harmonious blossoming of the sexual process includes the physiological requirements that must be met to achieve a normal, healthy erection. Turning to such Chinese medicine classics as the *Su Wen Nei Jing* (Plain Questions) and *Su Nu Jing* (Classic of the Plain Girl), we find a very clear commentary on the healthy process of achieving erection.

The four attainments

Classical Chinese medical literature makes reference to the concept of the four attainments as the "four basic conditions that the male reproductive organ must attain during foreplay before it is 'qualified' to enter the jade gate [vagina]"²⁹. In the classic *Su Nu Jing*, a question-answer style commentary between the "Mysterious Girl" and the Yellow Emperor, Huang Di discusses the four attainments:

Mysterious Girl: A male who desires intercourse must first pass through four stages of attainment: elongation, swelling, hardness and heat.

Yellow Emperor: What do these attainments mean?

Mysterious Girl: If the stalk does not attain sufficient elongation, the man's vital energy is too depleted for the act. If he attains elongation but little swelling this means that his muscular energy is insufficient for the task. If he achieves swelling but not hardness, it means that his joints and tendons are too weak for the act. If the organ gets hard but not hot then his spirit is insufficient for the act. In order to prepare properly for sexual intercourse, you must first harmonise your muscles and bones with your energy and your spirit. You must also exercise self-discipline, follow the basic principles of [the] Dao, and never waste your semen carelessly³⁰.

The quoted paragraph above demonstrates the necessity for both healthy organs and organ interactions to achieve a proper erection. There must be adequate qi and blood available to fill the penis. The Liver is primarily responsible for directing qi and blood to the penis with the help of the Kidneys and Heart. "Muscular energy" indicates the Spleen, which is responsible for generating post-natal qi. A lack of heat in the penis suggests that the shen is not directing the qi to the penis correctly, and therefore that there is a disturbance of the Heart. The Kidneys are the storehouse of the vital energy and when there is a deficiency of Kidney yang there will be insufficient elongation. As stated above, one must harmonise the zangfu to be truly prepared to have sexual intercourse in a healthy manner. When the zangfu are in harmony, then the emotions are in harmony and one's actions are in harmony with the Dao. Sexual intercourse that takes place in this state is beneficial for both partners.

Classical Chinese medicine aetiology

Emotions

Mental/emotional issues have a profound aetiological effect on erectile dysfunction. The seven emotions can have an effect on sexual functioning when the patient is in a pathological state. Emotional strain (i.e. stress, anxiety and frustration) can lead to disorders of the Liver and Heart. Chapter 44 of the *Su Wen Nei Jing* (Plain Questions) states: "Overindulgence in thinking, or experiencing frustration from not being able to fulfil one's wishes can cause wei [flaccidity] of the reproductive sinew [erectile dysfunction]"³¹. Emotional frustration and anger can cause a stagnation of qi³², while depression and sadness can cause a scattering of the qi³³.

Sexual indulgence

Over-indulgence in sexual activity can lead to a depletion of Kidney essence, through excessive ejaculation and thoughtless promiscuous sexual encounters. The conservation of the Kidney essence is a cornerstone of both classical Chinese and Daoist medical theory. It is believed that with each ejaculation, a portion of the non-renewable prenatal Kidney essence is depleted. Therefore, excessive masturbation and sexual intercourse can rapidly deplete an individual's jing. It is for this very reason that the Daoist-Tantric tradition of semen retention was developed (see Appendix A).

Drug/herb induced impotence (chuan yao)³⁴

The use of sexually arousing herbal and pharmaceutical medicines can cause damage to the Kidney yin and essence, leading to impotence. This cause of impotence is called "chuan yao" and originally referred to herbs that promote the sex drive without supporting the Kidneys. The use of these herbs can create a vicious cycle of impotence and sexual dysfunction. Typically, these herbs are self-prescribed with the desire to increase the libido. The herbs increase sexual arousal that can lead to repeated abuse of the herbal products, which in turn, can lead to a "sexual over-stimulation". Such over-stimulation leads to an over-indulgence in sexual activity and thus can lead to impotence. Recent erection-stimulating pharmaceuticals such as Viagra fall within this category. While Viagra works for many men, it does not address the underlying cause of impotence. It temporarily raises the Kidney yang, but cannot continually support it, and like throwing gasoline on a fire, it can make the Kidney fire blaze for a short time by burning up the material substance, leading to damage of Kidney yin and jing with prolonged usage³⁵.

Congenital disease

It is possible for an individual to be born with insufficient jing, which typically manifests as a biomedical defined genetic disorder such as Down's syndrome. Erectile dysfunction is a common manifestation of this type of disease. In addition, certain genetic abnormalities can lead to immature reproductive tracts in which no secondary sexual characteristics are present. In classical Chinese medical literature there are five congenital disorders known as *wu bu nan* or "five not men"³⁶. Congenitally based erectile dysfunction is known as *qie* in the literature, and is one of the five classically defined congenital disorders³⁷.

Age

As people age, there is a slow waning of the Kidney yin, yang and jing. This decline in Kidney function results in the ageing process. Specifically, much age-related erectile dysfunction is attributed to the exhaustion of Kidney yang. While this ageing process occurs naturally over the course of a lifetime, some individuals hasten this process through unhealthy life choices. It has been the goal of the sages of Chinese and Daoist medicine to delay the ageing process by maintaining proper thoughts, diet and activities. Daoist scholars and physicians have contributed significantly to the Chinese medical literature in regard to essence preservation in the hope of slowing

the ageing process (see Appendix A).

Damp-heat

Erectile dysfunction occurs when internally generated damp-heat flows into the lower jiao affecting the Liver and Gall Bladder channels. Common aetiologies include the over-consumption of rich, greasy foods and alcohol. We also see long term sources of heat in the lower jiao such as yin deficiency, qi stagnation or damp accumulation as sources of damp-heat. This is often seen in biomedical-defined diseases such as diabetes. Impotence, impeded orgasm and pain and swelling in the genital region are common symptoms of damp-heat pathology.

Biomedical theory & diagnostics of erectile pathophysiology

The inclusion of this section is designed for the Chinese medicine practitioner to have a better understanding of the biomedical definition of erectile pathology allowing an educated dialogue with western Medical practitioners. There are many causes of erectile dysfunction, which can often be one of the first signs of a more serious health problem. Impotence should be viewed as a symptom, not a disease per se. According to Dr. Myron Murdock, the national medical director of the Impotence Institute of America, impotence should not be taken lightly:

Most people who have a physical cause for their impotence have a disease entity that is causing the impotence, so you have patients out there with undiagnosed diabetes, vascular problems and heart disease whose first sign of a problem is impotence. In fact, one-third of all patients who present as impotence as their primary symptom of a blood vessel problem will end up with a serious complication within three years, either a heart attack or a stroke³⁸.

The biomedical pathology of erectile dysfunction is divided into six classes based upon aetiology: psychogenic (mental-emotional disorders), neurogenic (failure to initiate), endocrinologic (abnormal hormone levels), arteriogenic (failure to fill), venogenic (failure to store) and pharmaceutically induced (side effects of medication) impotence. At one time it was thought that psychological erectile dysfunction was the primary aetiology, accounting for up to 90% of cases seen. Current research indicates only 20% of all cases of erectile dysfunction are psychogenic in origin³⁹.

Psychogenic

It is important to remember that the sexual process of erection occurs through a series of neurological messages. The impact of emotional difficulties on the process of achieving and maintaining an erection must be seen as a physiologic response⁴⁰, i.e. maladaptive emotional behaviour in turn affects physiological activity within the body. There are two proposed main causative mechanisms: i. the neurological suppression of the sections of the brain that control the erection process⁴¹, and ii. hyperactivity of the "flight or fight" mechanism (increased epinephrine) of the sympathetic nervous system that can cause a loss of erection due to anxiety or other sources of stress⁴².

During the initial interview, it is appropriate to ask patients directed questions about marital relations, recent loss of a loved one, lack of opportunity due to a lack of a partner or "missed" opportunities due to a lack of confidence. Chances are high that the patient will not volunteer this information⁴³. The practitioner should ask about the duration of the impotence, the presence or absence of morning erections, and the level of libido. It is appropriate to refer a patient for evaluation if a prominent psychological problem is suspected, as the patient may benefit greatly from co-management with a trained sexual counsellor⁴⁴.

The five sub-classifications of psychogenic erectile dysfunction are:⁴⁵

- Type 1 (anxiety): seen in men who have fear and worry around their ability to perform sexually, body image issues, or suffer from a phobia of a sexual nature.
- Type 2 (depression): emotionally related depression is the primary form seen clinically, although this sub-classification includes depression due to the effects of medication and disease.
- Type 3 (relational): includes conflicts within relationships that may cause erectile dysfunction due to unresolved issues of anger and unhealthy relational patterns.
- Type 4 (misinformation): usually due to misinformation or a lack of knowledge about normal male anatomy as it relates to sexual function.
- Type 5 (obsessive-compulsive): includes mental disorders such as psychosis and sexual deviation. Research suggests that individuals suffering from severe psychosis may have trouble sustaining personal relationships and can have difficulty performing sexually.

Neurogenic

Erectile dysfunction can occur with any disease or dysfunction that affects the central nervous system (brain and spinal cord) or the local nervous system of the penis. Recent research indicates that pathological processes affecting specific sections of the brain e.g. Parkinson's disease or cerebral vascular accident (CVA), often result in erectile dysfunction⁴⁶. Disorders of the spinal cord that often cause erectile dysfunction include Alzheimer's disease, disc herniation, tumours, multiple sclerosis, and trauma to the lower spinal cord area⁴⁷. Surgery on the pelvic organs can lead to erectile dysfunction when nerve damage occurs. Nutritional deficiencies including alcoholic and diabetic induced deficiencies may also cause erectile dysfunction due to a depletion of neurotransmitters⁴⁸. It is advisable to refer patients with neurogenic impotence for neurological examination and testing if they have not been recently evaluated.

Endocrinologic

An excess of the hormone prolactin (hyperprolactinemia), caused by either a pituitary adenoma or drugs, has been shown to lead to reproductive and sexual dysfunction. Specific symptoms include erectile dysfunction, loss of libido, galactorrhoea, gynecomastia and infertility. Both hyper- and hypo- thyroidism may be a causative factor: hyperthyroidism is more commonly associated with a loss of libido than

erectile dysfunction but should be considered as a possible aetiology, whilst in cases of hypothyroidism the causative factors include subnormal levels of testosterone and excessive prolactin levels. While there are many endocrine disorders that may impede erection, the overall percentage of endocrinopathy-induced impotence is low⁴⁹. Diseases such as diabetes mellitus, hypo- and hyper- thyroidism, renal failure, Wilson's disease⁵⁰, hypogonadism and hyperprolactinemia can all cause erectile dysfunction. Referral for evaluation and testing is appropriate if endocrinologic-based impotence is suspected but not yet confirmed.

Arteriogenic

The two most common aetiologies for arteriogenic based erectile dysfunction are atherosclerosis and local trauma of the penile arteries⁵¹. Both disorders can cause occlusion that decreases arterial flow to the penis. This in turn, causes a decrease in rigidity and a prolonged time achieving erection. There is a very strong correlation between the incidence and age of onset of coronary disease and erectile dysfunction. The common risk factors for arterial insufficiency include hypertension, hyperlipidemia, tobacco smoking, diabetes mellitus, perineal or pelvic trauma, and irradiation of the pelvis⁵². Most cases of atherosclerotic disease are found among older men, while perineal or pelvic trauma is seen among younger, active men, especially bicyclists. It is important to note that hypertension itself does not cause erectile dysfunction, but the consequent obstruction due to stenotic lesions⁵³.

When treating patient with arteriogenic-based erectile dysfunction one should attempt to elicit any history of local trauma or coronary artery disease. Determine if the patient exhibits any of the common risks factors associated with arterial insufficiency and refer for additional evaluation as needed.

Venogenic

Current research suggests that inadequate venous occlusion is one of the most common causes of vasculogenic impotence. Improper closure of the venous valves or enlarged penile veins can cause the drainage of venous blood away from the penis leading to premature flaccidity. This form of venous insufficiency often occurs with disorders such as Peyronie's disease, diabetes, hypercholesterolaemia and in the advanced ageing process⁵⁴. The diagnosis of venogenic erectile dysfunction is best established with the combined intracavernous injection and stimulation test.

Pharmaceutically induced

Pharmaceutical substances cause erectile dysfunction in up to 25% of the outpatient clinic population⁵⁵. It is important to review in detail the patient's current drug intake both prescribed and over the counter. Common pharmaceutical medications that can cause erectile dysfunction include anti-psychotics, antidepressants (including tricyclic), anti-hypertensive drugs and monoamine oxidase (MAO) inhibitors. The vasoconstriction as a result of cigarette smoking causes venous leakage due to the contractile effects on penile smooth muscle⁵⁶. An interesting feature of alcohol consumption is its stimulatory effect on both the erectile process and sexual

drive in small amounts via vasodilatory actions and a reduction of stress. When consumed in larger quantities however, alcohol causes a decrease in libido, temporary impotence and CNS sedation. According to *Campbell's Urology*, "chronic alcoholism can lead to liver dysfunction, decreased testosterone and increased oestrogen, and alcoholic polyneuropathy, which also affects penile nerves"⁵⁷.

Evaluation and Testing

Every patient who reports having erectile dysfunction should have a thorough initial interview. Referral for evaluation and testing is appropriate when treating an undiagnosed patient. Laboratory testing is usually performed conservatively, with generalised screening tests done prior to the more specific tests. Specific testing is recommended when a variety of conditions are present including a lack of erections for most of a patient's life (especially young patients), young patients (under 40 years old), prior pelvic surgery, vascular surgery, renal transplantation and pelvic radiation therapy. Many of these tests are prohibitively expensive and are often not performed as cost-related concerns override medical necessity.

The stamp test

One fairly reliable and yet inexpensive screening test within the TCM practitioner's scope of practice is the "stamp" test⁵⁹ which can be performed at home. The patient will need a roll of connected postage stamps with dry adhesive backing. The roll of postage stamps is moistened and coiled firmly around the patient's flaccid penis prior to sleep. The patient takes special care to protect the area by wearing underwear and sleeping on his back to avoid a false-negative result. If, upon waking, the patient finds the stamps have been broken, then there is a strong indication that the disorder is non-organic, and psychological evaluation via referral is appropriate. If the stamps remain intact after sleeping, then a referral to a primary care physician is indicated.

Classical Chinese medicine diagnostics

It is appropriate to keep in mind that within a clinical setting, the majority (approximately 70%) of patients will present with erectile dysfunction of a deficient nature, which suggests disorders relating to the Kidney zang⁵⁸. The remaining 30% of patients will present with excess patterns of erectile dysfunction in which the Liver and Gallbladder play a prominent role. However, while we typically speak of a case as being "excess" or "deficient", it is important to note that most patients are a combination of both to varying degrees. The practitioner should learn to recognise this, and treat accordingly.

Differential Patterns

• Liver qi stagnation

Typically, this is seen in overworked middle-aged men or frustrated young men. Liver qi stagnation can be caused by emotional upset and lack of physical activity. When the Liver qi stagnates, it cannot move the blood. Thus the penis is deprived of both qi and blood causing impotence to occur. Specifically, the erection cannot be achieved or sus-

tained depending upon the severity of the qi stagnation. Additional symptoms include a loss of libido, genital pain⁵⁹, a sensation of tightness or fullness in the chest, tightness in the hypochondriac region, generalised aches and pains, frequent sighing, dizziness, fatigue which is better with exercise, suppressed emotions manifesting as irritability or depression, abdominal distention and flatulence with alternating constipation and diarrhoea. The tongue is normal or dark in colour and may have red edges and a yellow coating when heat is present. The pulse is usually wiry.

• Blood stasis

Blood stasis as a cause of impotence is often seen with a history of trauma especially after surgery in and around the genital region⁶⁰. This pattern is seen in older men with a history of surgical procedures in this region and with younger, athletically active men, especially bicyclists who suffer injury to the area. Symptoms and signs include a history of trauma, impotence, a cold sensation in the penis, a sharp and stinging pain at the base of the penis, and a heavy, dragging sensation. The tongue is dark red and may have purple spots. The pulse is choppy or wiry.

Modern research indicates that blood stasis can be a secondary pathological component of many differential patterns of erectile dysfunction⁶¹, i.e. a result of the pathological process of the disease patterns associated with impotence. A recent study from China reports great success in treating impotence by adding blood-moving herbs to prescribed formulas. The test group receiving the blood-moving herbs had an improvement rate of up to 84% compared to the group receiving the standard formula⁶². It was the report author's opinion that adding blood-moving herbs is appropriate if the underlying disorder does not prohibit their usage.

• Liver channel cold (gan han)

Cold in the Liver channel is due to exposure to extremely cold environmental conditions, and is mainly seen in China where such exposure is more likely due to living conditions. It has been found that coldness of the Liver channel can cause a decrease in libido leading to erectile dysfunction⁶³. The symptoms and signs include impotence, decreased libido, cold sensation in the testicles and scrotum, generalised coldness in the lower portion of the body, chest and abdomen stuffiness and distention, and a pale face⁶⁴. The tongue has a white coat. The pulse is typically deep and tight.

• Liver blood & yin deficiency

Patients suffering from this pattern have trouble getting a full erection, as there is not enough material substance (including blood) to fill the penis. Typically, the erection is partial or a "soft erection" depending upon the severity of the deficiency. Symptoms and signs include impotence, emotional upset, anger and irritability, depression, frequent sighing, dizziness, blurred vision, fatigue and weariness⁶⁵. The tongue is typically red with slight or no coating. The pulse is thready or wiry.

• Heart and Gallbladder qi deficiency (fright injures the Kidneys)

This pattern is also known as fright and shock injuring the Kidney qi. There is severe damage to the shen and the

Kidney zhi⁶⁶ (will), which manifests as chronic timidity often accompanied with disorders of personality. We find that sexual dysfunction, especially impotence, can be a major factor in this pattern. This is especially true when these timid individuals are frightened by sexual intercourse. When fear damages the Kidneys, there is insufficient Kidney qi to erect the penis, causing erectile dysfunction. Additionally, when the shen is disturbed and scattered as it is in this pattern, it is unable to lead the qi to the penis (in severe cases), or in the case of partial erections, the shen is not stable enough to keep the qi within the penis which becomes flaccid as the shen scatters. An interesting feature of this disorder is that the patient suffers from impotence during sexual intercourse but may have a normal erection at other times. It is not surprising to find fear of intimate relationships to be common. The primary symptoms of this pattern include difficulty achieving or maintaining an erection, anxiety and shyness, being easily startled, a nervous disposition, palpitations, nightmares, insomnia, and in some cases paranoia. The tongue is pale with a thin, white, greasy coating. The pulse is fine and may be deep or normal

• *Damp-heat & phlegm obstructing the channels*

Common symptoms of this pattern include yellow, hot urine with dribbling and a sense of incomplete urination⁶⁷. There is often dryness of the mouth and lips due to the heat. Additional symptoms include genital pain or an itchy rash, excessive sweating around the genital region, problems with the erection process or inability to achieve orgasm, heavy sensations especially in the legs (as the damp-heat pours downwards). Emotionally, there may be suppressed anger or depression⁶⁸. Those who are overweight may be prone to this disorder. The mechanism of this disorder includes an exuberance of yangming heat and dampness of the Spleen. This can cause damp-heat to pour downward and collect in the Bladder causing a “slackening of the ancestral sinew”⁶⁹. Damp-heat, having a downward flow can collect within the genital region causing a blockage of the Liver and Gallbladder channels leading to impotence. Consumption of rich-flavoured foods or alcohol intake can cause damp-heat to accumulate⁷⁰. The tongue is red, with a thick, white or yellow, greasy coating. The pulse is rapid and may be slippery or wiry.

Phlegm stasis induced impotence is found primarily among obese men and relates to the disorder of tan shi (obesity). This is often seen with the over-consumption of slimy, rich and sweet foods in excess. Phlegm can cause obstruction of the Liver/Yangming channels, preventing the qi and blood from reaching the penis. Symptoms include impotence in primarily obese men, chest and diaphragm oppression, nausea, vomiting of phlegm, aching, heavy limbs, dizziness, palpitations upon exertion, fatigue, and a damp, sweaty scrotum. The tongue has a slimy coating. The pulse is usually slippery.

Appendix A: The cerebrospinal fluid/semen connection and Daoist sexual cultivation theory

The Daoist tradition of inner cultivation often refers to the practice of retaining semen during sex and directing this seminal (jing) energy to the brain as a method of life preservation. It is commonly known that the Kidney zang rules both the semen (being a part of jing) and the brain and spinal cord (as the sea of marrow)⁷¹. The cerebrospinal fluid, which flows through the brain and along the spinal cord providing essential nourishment, can be interpreted as part of the Kidney jing. Interestingly enough, according to current biomedical research there is strong evidence that semen and cerebrospinal fluid have a similar consistency⁷². Since the Kidney rules both the testicles and the brain (known as the sea of marrow), the production of semen and cerebral spinal fluid use Kidney essence (jing) as the common source of both substances. Furthermore, recent insights have determined that an imbalance in the cranial-sacral system, to which cerebro-spinal fluid belongs, can contribute to a great many diseases and disorders of the spine and skull.

It is the primary goal of Daoist practitioners to retain their essence through special exercises and meditation. They have established the importance of the perineum in maintaining pelvic organ health and indirectly sustaining the jing. One exercise that is used during sexual intercourse is delaying or preventing ejaculation and cycling the orgasmic energy up through the spine and into the brain. The pathway is established via the Governing vessel which connects with the Kidneys and the brain, whilst the Kidney zang rules both the testicles and the central nervous system (brain and spinal cord).

Using the method of ejaculation control seems prudent when looking at the consequences of excessive loss of Kidney essence. However, the question “What pleasure does a man get without an ejaculatory orgasm?” might, justifiably, be asked. This very question was examined in the ancient text *Secrets of the Jade Bedroom* by the advisors of Huang Di, Peng-Tze and the Rainbow Girl:

Rainbow Girl: It is generally assumed that a man gains great pleasure from ejaculation. But when he learns the Dao of yin and yang, he will ejaculate less and less. Will this not diminish his pleasure as well?

Peng-Tze: Not at all! After ejaculating, a man feels tired, his ears buzz, his eyes get heavy, and he longs for sleep. He is thirsty and his limbs feel weak and stiff. By ejaculating, he enjoys a brief moment of sensation but suffers long hours of weariness as a result. This is no true pleasure! However, if a man regulates his ejaculations to an absolute minimum and retains his semen, his body will grow strong, his mind will be clear, and his vision and hearing will improve. While the man must occasionally deny himself the fleeting sensation of ejaculation, his love for his woman will greatly increase. He will feel as if he could never get enough of her. Is that not the true and lasting pleasure of sex?⁷³

Appendix B: Additional Chinese medicine differential patterns of erectile dysfunction

This section includes additional differential patterns often seen with impotence. These patterns are commonly discussed within TCM texts and journals. Since the topic of this article focuses upon the Liver/Gallbladder differential patterns, all other patterns are relegated to this section

Kidney yang deficiency

Kidney yang is the generative factor in sexual desire and has a primary role in the process of attaining and sustaining an erection. This is the typical pattern associated with erectile dysfunction. When the Kidney yang is deficient, there is not enough yang qi to fill and raise the penis. This pattern is often associated with old age, chronic disease (especially endocrine disorders), long-term cold exposure, overwork, long-term drug use, malnutrition with cold exposure, and excessive sexual activity. Typical Kidney yang deficiency symptoms include weakness and soreness of the knees and lower back with a sensation of coldness, lower abdominal coldness and distention, frequency of urine, nocturia, or oedema of the lower limbs, low libido, erectile dysfunction, low sperm count, poor sperm motility, thin watery ejaculate, cold semen and ejaculate. Additional symptoms include cold body and limbs, listlessness and fatigue, constipation or loose stools, a waxy pale complexion, lassitude in the loins and legs, cold genitals, depression. The tongue is pale, moist, and enlarged with toothmarks and a white coat. The pulse is deep, fine, and especially weak in the Kidney position.

Kidney yin deficiency

The typical manifestations of a Kidney yin deficiency sexual disorder are spontaneous or premature ejaculation, restless sexual over-activity and impotence⁷⁴. The primary causes of Kidney yin deficiency include overwork, stress, staying up late at night, night shift work, insufficient sleep, febrile diseases, dehydration, and the use of certain pharmaceutical and recreational drugs⁷⁵. The empty heat of Kidney yin deficiency can consume the Kidney fluids leading to an insufficiency of blood and body fluids to fill the penis enough to allow for stiffening⁷⁶. Symptoms seen with this pattern include an easily attainable erection that goes limp quickly, premature ejaculation, seminal emission, night sweating, emotional tension/stress, vertigo, tinnitus, weakness and pain of the low back and knees, painful heels⁷⁷, palpitations, dark urine and dry stools. The tongue is thin and red, with little coating and in some cases is flabby⁷⁸. The pulse is thin, rapid, often deep, and maybe choppy⁷⁹.

Heart & Spleen deficiency

This pattern is seen among individuals who are overworked, physically and mentally exhausted, prone to worrying, or consume an irregular diet and too much raw or sweet food⁸⁰. The Spleen fails to generate enough blood and qi which in turn can cause impotence. In addition, when there is insufficient blood to nourish the Heart, the shen can become unstable and unable to lead the qi and blood to the penis. Typical symptoms include inability to

achieve or maintain an erection, with impotence worse with fatigue. Many of these patients are capable of getting erections during sleep or masturbation⁸¹. A pale, lustreless facial complexion with a thin, weak body constitution is common. Poor sleep with profuse dreams or insomnia is often seen. Additional symptoms include panic attacks and nervousness, sexual performance anxiety, lack of appetite, post-meal abdominal distention, loose stools, and forgetfulness. The tongue is pale with a thin, white coating. The pulse is thready and weak.

References

Becker S. "The Treatment of Damp-Heat Impotence" *Journal of Chinese Medicine* 1999(61): 25-7.

Bensky D, Barolet R. *Chinese Herbal Medicine Formulas & Strategies*. Seattle, Eastland Press, 1990.

Bensky D, Gamble A. *Chinese Herbal Medicine Materia Medica*. Seattle, Eastland Press, 1993.

Brock B. "Erectile Dysfunction" in *Griffith's 5-Minute Clinical Consult*, 1999 ed., Lippincott Williams & Wilkins, Inc. New York, NY 1999.

Cathay Herbal Laboratories. "Treating Impotence with TCM - Pathological Impotence" www.cathayherbal.com [author unknown], 2001.

Chace C. "Rising to the Occasion: Impotence" *Fleshing Out the Bones*. Boulder, Blue Poppy Press, 1992.

Eardley I, Kirby RS. "Neurogenic impotence." In Kirby RS, Carson CC, Webster GD, eds: *Impotence: Diagnosis and Management of Male Erectile Dysfunction*. Oxford, Butterworth-Heinemann, 1991, pp 227-231.

Epstein HB. "Impotence Update: 1997-1998" *J Jacksonville Med Online* 1998(1). www.dcmsonline.org

Fruehauf H, Dharmananda S. *Pearls from the Golden Cabinet*. Portland, NCNM 1998.

Fruehauf H. "The Ancient Perspective on the Gallbladder/Heart Connection to Sexual Function" Personal Communication, NCNM, Portland 2001.

Guo J. "A Parallel Study On The Effects In Treatment Of Impotence By Tonifying The Kidney With And Without Improving Blood Circulation." *Journal of Traditional Chinese Medicine* 19(2): 123-125, 1999.

Hsieh JT, Muller SC, Lue TF: "The influence of blood flow and blood pressure on penile erection." *Int J Impotence Res* 1989; 1:35-42.

Junemann K-P, Lue TF, Luo JA, et al. "The effect of cigarette smoking on penile erection." *J Urol* 1987; 138:438-441.

Kou M. "Kidney deficiency and erectile dysfunction." Personal Communication, NCNM Portland, OR 2000.

Larre C, Rochat de la Vallee E. *The Liver*, Cambridge, England: Monkey Press, 1994.

Lin A: *A Handbook of TCM Urology & Male Sexual Dysfunction*. Boulder, Blue Poppy Press, 1992.

Long R. "Classical Chinese Medicine Perspective On Erectile Dysfunction." Personal Communication, NCNM Portland, OR 2000.

Lue TF "Physiology Of Penile Erection And Pathophysiology Of Erectile Dysfunction And Priapism." In *Campbell's Urology 7th Ed*.

Macleay W, Lyttleton J. *Clinical Handbook of Internal Medicine (Vol. 1)*. Australia, University of Western Sydney Macarthur, 1998.

Metz P, Ebbehøj J, Uhrenholdt A, Wagner G: "Peyronie's disease and erectile failure." *J Urol* 1983; 130:1103-1104.

Michal V, Ruzbarsky V: "Histological changes in the penile arterial bed with ageing and diabetes." In Zorogniotti AW, Rossi G, eds: *Vasculogenic Impotence: Proceedings of the First International Conference on Corpus Cavernosum Revascularization*. Springfield, IL, Charles C Thomas, 1980, pp 113-119.

Murdock M (MD). "One year after Viagra" Interview, CNN.com, 3/99. (Transcript)

Ni HC. *The Book of Changes and the Unchanging Truth, 2nd Ed*. Santa Monica, Shrine of the Eternal Breath of Tao, 1990.

Ni M: *The Yellow Emperor's Classic of Medicine* [Neijing Suwen]. Boston, Shambala 1995.

Palmer BF. "Sexual dysfunction in uremia." *J Am Soc Nephrol* 1999 Jun; 10(6):1381-8.

Rees HD, Michael RP: "Brain cells of the male rhesus monkey accumulate 3H-testosterone or its metabolites." *J Comp Neurol* 1982; 206:273-277.

Reid D. *The Tao of Health, Sex, and Longevity*. New York, Fireside Press 1989.

Rosen MP, Greenfield AJ, Walker TG, et al: "Arteriogenic impotence: Findings in 195 impotent men examined with selective internal pudendal angiography." *Radiology* 1990; 174:1043-1048.

Ross J. "Male Sexual Disorders" *Acupuncture Point Combinations: the Key to Clinical Success*. Churchill Livingstone 1995.

Ruan FF. *Sex in China: Studies in Sexology in Chinese Culture*, New York, Plenum Press 1991.

Sachs BD, Meisel RL: "The physiology of male sexual behavior". In Knobil E, Neill JD, Ewing LL, eds: *The Physiology of Reproduction*. New York, Raven Press 1988, pp 1393-1423.

Sionneau P, Gang L. *The Treatment of Disease in TCM V6: Diseases of the Urogenital System & Proctology*. Blue Poppy Press, Boulder, CO 1999.

Tarnacka B. "Procreation ability in Wilson's disease." *Acta Neurol Scand* 01-Jun-2000; 101(6):395-8

Thomas CL ed. *Taber's Cyclopedic Medical Dictionary 17th ed.*, F.A. Davis Co., Philadelphia, PA 1989.

Wein AJ, Van Arsdalen K: "Drug-induced male sexual dysfunction." *Urol Clin North Am* 1988; 15:23-31.

Wermuth L, Stenager E: "Sexual aspects of Parkinson's disease." *Semin Neurol* 1992; 12:125-127.

Yaman LS. "Psychogenic Impotence." *European Urology* 26(1):52-5, 1994.

Yeung HC. *Handbook of Chinese Herbs*. Rosemead, Institute of Chinese Medicine, 1983.

Zhang HS. "Thesis Defense Committee Review" Personal Communication, NCNM Portland 2001.

Endnotes

- 1 Lue TF: "Physiology Of Penile Erection And Pathophysiology Of Erectile Dysfunction And Priapism." In *Campbell's Urology 7th Ed.*
- 2 Brock B: "Erectile Dysfunction" in *Griffith's 5-Minute Clinical Consult, 1999 ed.*, New York, Lippincott Williams & Wilkins, Inc. 1999.
- 3 Thomas CL ed: *Taber's Cyclopedic Medical Dictionary 17th ed.*, Philadelphia, F.A. Davis Co. 1989.
- 4 Brock B: "Erectile Dysfunction" in *Griffith's 5-Minute Clinical Consult, 1999 ed.*, New York, Lippincott Williams & Wilkins, Inc. 1999.
- 5 Larre C, Rochat de la Vallee E: *The Liver*. Cambridge, Monkey Press, 1994.
- 6 Lin A: *A Handbook of TCM Urology & Male Sexual Dysfunction*. Boulder, Blue Poppy Press, 1992.
- 7 Fruehauf H. "The Ancient Perspective on the Gallbladder/ Heart Connection to Sexual Function" Personal Communication, NCNM, Portland 2001.
- 8 Ibid.
- 9 Ni HC, *The Book of Changes and the Unchanging Truth, 2nd Ed.* Santa Monica, Shrine of the Eternal Breath of Tao, 1990.
- 10 Fruehauf H. "The Ancient Perspective on the Gallbladder/ Heart Connection to Sexual Function" Personal Communication, NCNM, Portland 2001.
- 11 Ibid.
- 12 Ibid.
- 23 Kou M: "Kidney Deficiency and Erectile Dysfunction" Personal Communication. Portland, NCNM 2000.
- 34 Long R: "Classical Chinese Medicine Perspective On Erectile Dysfunction." Personal Communications, NCNM Portland, OR 2000-1.
- 45 Kou M: "Kidney Deficiency and Erectile Dysfunction" Personal Communication. Portland, NCNM 2000.
- 56 Lin A: *A Handbook of TCM Urology & Male Sexual Dysfunction*. Boulder, Blue Poppy Press, 1992.
- 67 MacClean W, Lyttleton J. *Clinical Handbook of Internal Medicine (Vol. 1)*. Australia, University of Western Sydney Macarthur, 1998.
- 78 Lin A: *A Handbook of TCM Urology & Male Sexual Dysfunction*. Boulder, Blue Poppy Press, 1992.
- 19 Fruehauf H. "The Ancient Perspective on the Gallbladder/ Heart Connection to Sexual Function" Personal Communication, NCNM, Portland 2001.

- 20 MacClean W, Lyttleton J. *Clinical Handbook of Internal Medicine (Vol. 1)*. Australia, University of Western Sydney Macarthur, 1998.
- 21 Zhang HS. "Thesis Defense Committee Review" Personal Communication, NCNM Portland 2001
- 22 Fruehauf H. "The Ancient Perspective on the Gallbladder/ Heart Connection to Sexual Function" Personal Communication, NCNM, Portland 2001.
- 23 Ibid.
- 24 Ni HC, *The Book of Changes and the Unchanging Truth, 2nd Ed.* Santa Monica, Shrine of the Eternal Breath of Tao, 1990.
- 25 Fruehauf H. "The Ancient Perspective on the Gallbladder/ Heart Connection to Sexual Function" Personal Communication, NCNM, Portland 2001.
- 26 Long R: "Classical Chinese Medicine Perspective On Erectile Dysfunction." Personal Communication, NCNM Portland, OR 2000.
- 27 Ni M: *The Yellow Emperor's Classic of Medicine* [Neijing Suwen]. Boston, Shambala, 1995.
- 28 Long R: "Classical Chinese Medicine Perspective On Erectile Dysfunction." Personal Communications, NCNM Portland, OR 2000-1.
- 29 Reid D: *The Tao of Health, Sex, and Longevity*. New York, Fireside Press, 1989.
- 30 Ibid.
- 31 Ni M: *The Yellow Emperor's Classic of Medicine* [Neijing Suwen]. Boston, Shambala, 1995.
- 32 Ibid.
- 33 Long R: "Classical Chinese Medicine Perspective On Erectile Dysfunction." Personal Communications, NCNM Portland, OR 2000-1.
- 34 Ibid.
- 35 Ibid.
- 36 Lin A: *A Handbook of TCM Urology & Male Sexual Dysfunction*. Boulder, Blue Poppy Press, 1992.
- 37 Ibid.
- 38 Murdock M. "One year after Viagra" Interview, CNN.com, 3/ 99. (Transcript)
- 39 Epstein HB. "Impotence Update: 1997-1998" J Jacksonville Med Online 1998(1). www.dcmsonline.org
- 40 Lue TF: "Physiology Of Penile Erection And Pathophysiology Of Erectile Dysfunction And Priapism." In *Campbell's Urology 7th Ed.*
- 41 Ibid
- 42 Ibid.
- 43 Ibid.
- 44 Ibid.
- 45 Lue, TF: "Physiology Of Penile Erection And Pathophysiology Of Erectile Dysfunction And Priapism." *Campbell's Urology 7th Ed.*
- 46 Wermuth L, Stenager E: "Sexual aspects of Parkinson's disease." *Semin Neurol* 1992; 12:125-127.
- 47 Eardley I, Kirby RS: "Neurogenic impotence." In Kirby RS, Carson CC, Webster GD, eds: *Impotence: Diagnosis and Management of Male Erectile Dysfunction*. Oxford, Butterworth- Heinemann, 1991, pp 227-231.
- 48 Lue TF: "Physiology Of Penile Erection And Pathophysiology Of Erectile Dysfunction And Priapism." In *Campbell's Urology 7th Ed.*
- 49 Epstein HB. "Impotence Update: 1997-1998" J Jacksonville Med Online 1998(1). www.dcmsonline.org
- 50 Tarnacka B. "Procreation ability in Wilson's disease." *Acta Neurol Scand* 01-Jun-2000; 101(6):395-8.
- 51 Michal V, Ruzbarsky V: "Histological changes in the penile arterial bed with aging and diabetes." In Zornigotti AW, Rossi G, eds: *Vasculogenic Impotence: Proceedings of the First International Conference on Corpus Cavernosum Revascularization*. Springfield, IL, Charles C Thomas, 1980, pp 113-119.
- 52 Rosen MP, Greenfield AJ, Walker TG, et al: "Arteriogenic impotence: Findings in 195 impotent men examined with selective internal pudendal angiography." *Radiology* 1990; 174:1043-1048.

- 53 Hsieh JT, Muller SC, Lue TF: "The influence of blood flow and blood pressure on penile erection." *Int J Impotence Res* 1989; 1:35-42.
- 54 Lue, TF: "Physiology Of Penile Erection And Pathophysiology Of Erectile Dysfunction And Priapism." *Campbell's Urology 7th Ed.*
- 55 Wein AJ, Van Arsdalen K: "Drug-induced male sexual dysfunction." *Urol Clin North Am* 1988; 15:23-31.
- 56 Junemann KP, Lue TF, Luo JA, et al: "The effect of cigarette smoking on penile erection." *J Urol* 1987; 138:438-441.
- 57 Lue, TF: "Physiology Of Penile Erection And Pathophysiology Of Erectile Dysfunction And Priapism." *Campbell's Urology 7th Ed.*
- 58 Long R: "Classical Chinese Medicine Perspective On Erectile Dysfunction." Personal Communications, NCNM Portland, OR 2000-1.
- 59 Ross J. "Male Sexual Disorders" *Acupuncture Point Combinations: the Key to Clinical Success.* Churchill Livingstone 1995.
- 60 Cathay Herbal Laboratories. "Treating Impotence with TCM - Pathological Impotence" www.cathayherbal.com [author unknown], 2001.
- 61 Guo J. "A Parallel Study On The Effects In Treatment Of Impotence By Tonifying The Kidney With And Without Improving Blood Circulation." *Journal of Traditional Chinese Medicine* 19(2): 123-125, 1999.
- 62 Ibid.
- 63 Long R: "Classical Chinese Medicine Perspective On Erectile Dysfunction." Personal Communications, NCNM Portland, OR 2000-1.
- 64 Lin A: *A Handbook of TCM Urology & Male Sexual Dysfunction.* Boulder, Blue Poppy Press, 1992.
- 65 Ibid.
- 66 Ibid.
- 67 Sionneau P, Gang L. *The Treatment of Disease in TCM V6: Diseases of the Urogenital System & Proctology.* Blue Poppy Press, Boulder, CO 1999.
- 68 Ross J. "Male Sexual Disorders" *Acupuncture Point Combinations: the Key to Clinical Success.* Churchill Livingstone 1995.
- 69 Chace C. "Rising to the Occasion: Impotence" *Fleshing Out the Bones.* Boulder, Blue Poppy Press, 1992.
- 70 Sionneau P, Gang L. *The Treatment of Disease in TCM V6: Diseases of the Urogenital System & Proctology.* Blue Poppy Press, Boulder, CO 1999.
- 71 Reid D: *The Tao of Health, Sex, and Longevity.* New York, Fireside Press, 1989.
- 72 Ibid.
- 74 Sionneau P, Gang L. *The Treatment of Disease in TCM V6: Diseases of the Urogenital System & Proctology.* Blue Poppy Press, Boulder, CO 1999.
- 75 Maclean W, Lyttleton J. *Clinical Handbook of Internal Medicine (Vol. 1).* Australia, University of Western Sydney Macarthur, 1998.
- 76 Lin A: *A Handbook of TCM Urology & Male Sexual Dysfunction.* Boulder, Blue Poppy Press, 1992.
- 77 Ibid.
- 78 Ross J. "Male Sexual Disorders" *Acupuncture Point Combinations: the Key to Clinical Success.* Churchill Livingstone 1995.
- 79 Ibid.
- 80 Sionneau P, Gang L. *The Treatment of Disease in TCM V6: Diseases of the Urogenital System & Proctology.* Blue Poppy Press, Boulder, CO 1999.
- 81 Maclean W, Lyttleton J. *Clinical Handbook of Internal Medicine (Vol. 1).* Australia, University of Western Sydney Macarthur, 1998.

Shawn Soszka is a Naturopathic physician and Chinese medicine practitioner in Portland, Oregon (USA). He is a recent graduate of the National College of Naturopathic Medicine where he completed the Classical Chinese Medicine program developed by Heiner Fruehauf. He can be contacted at Dr_Soszka@hotmail.com.