

Men's Health and Well-being:

Tips for increasing male fertility

"The best relationships are partnerships." ~Rinatta Paries

For all the women who have been doing all the reading regarding fertility so far, this will be a useful article to hand over to your male partners. We will cover the basics of male factor infertility and how men can be their healthiest and increase the chances of having the family you both want.

Sperm is being used increasingly as a biomarker for health and potential risks to future health so the little guys are our friends and should be treated with respect.

The ideal response for a man that has been handed the diagnosis of infertility is to become accountable and take great care of himself, just as it is for women. Remember, you are half of the equation and fatherhood is no less important than motherhood. In an effort to avoid taking better care of himself or get acupuncture (don't worry, it doesn't involve needles into your genitals), expressing the need for evidence or research regarding the merits of health, lifestyle and 'alternative medicine' is common. This is why you will notice I have taken the time to reference research over and over again in this chapter.

I have been blessed with being a father to two healthy boys and I can tell you that being a dad is the best job in the world. Every day is an opportunity to show my boys a virtuous way to walk through this lifetime. That is my guiding principle for each decision I make. Having a family gives me direction and guidance, and ultimately a peace that I never thought possible. I live like each moment could be the last. I make each choice knowing my boys are watching.

These feelings are what guide my intention with the work I do each day at Yinstill. I want to help all the people that come to me start their happy, healthy families so they can share in the joy that my family brings. Sometimes it takes tough love, and other times it takes gentle compassion to guide people down a better path that has a greater chance of leading to children, fulfillment and optimal health.

Male infertility affects 10% to 15% of reproductive-aged couples worldwide. Since it is so common, it is important to understand the true role it plays in male health and relationships. Men struggling with infertility suffer intense negative sexual, personal and social strains unique to this diagnosis and as a result, it can be a difficult subject to broach, so it is often ignored. There is without a doubt, the absolute need for men to step up. I hope the research cited in this chapter is enough to make men consider taking steps toward improvement of their own health. There is no shame in needing help getting on track with your reproductive wellness. It's no one's fault and the good news is that it's often fixable.

Semen Collection and Analysis

To begin the process of semen analysis, it must be collected in one of two ways. The first option is to ejaculate into a sterile container, but because masturbation on demand is not easy, it may take some mental preparation and may be less preferable than option two. This method is most conveniently performed in the facility provided at the laboratory, however collection at home is acceptable provided the sample is transported within one hour and kept at body temperature.

The second option is to be sent away with a special condom that can be brought back at a later time. This may also be the preference of men that are prohibited by religious or personal practices that do not permit

masturbation. Semen should never be collected in an ordinary condom, however, as they contain substances that kill sperm.

It should be noted that it is important to refrain from ejaculation for 2-4 days before the sample is required and that semen collected by interrupted intercourse is not favoured since it risks the loss of sample, particularly the first fraction of the ejaculate.

If sperm parameters come back as abnormal, I recommend men going to a local fertility clinic to get a more accurate and thorough semen analysis done as often times, busy community labs do not do their analysis within the recommended time limit of sixty minutes. This can have negative effects on outcome measures. A urine sample after ejaculation is also a good idea to check for retrograde ejaculation.

Intracytoplasmic Sperm Injection (ICSI)

An advanced method of IVF, this is a procedure in which one sperm is extracted with a syringe, and injected into an egg, therefore eliminating the need for the sperm to penetrate the egg itself, as in regular IVF. Because of the existence of this procedure, even when semen parameters do not fall within normal lab ranges, men are often told things are fine because many medical professionals believe that ICSI makes the negative impact of poor sperm irrelevant. I believe that everything possible should be done to improve the semen parameters before simply jumping into ICSI. To some degree, poor sperm quality has to be a reflection of overall health and whenever possible, should be addressed before becoming a parent.

NOTE: *Doctors should be informed of any illness that has happened in the last three months since it takes 100 days for sperm to mature and problems at any time in the last 3 months could affect the semen sample.*

Causes of Male Factor Infertility

Before we can address an issue, we need to know what it is. While many problems with sperm are of unknown cause, here are some we do know about:

- **Undescended testis** - Usually detected and corrected soon after birth. If this is left untreated for very long, it can have negative effects on fertility.
- **Testicular trauma** - This could affect overall testicular function or the damage could breach the blood-testis barrier which can introduce antisperm antibodies into the reproductive tract making it difficult for the sperm to swim.
- **Hormonal** - An imbalance of the hormones necessary for proper sperm production and sexual function is common. Either the messages that the brain is sending to the testes is deficient or is being blocked, or there is a problem with the functioning of the testes so the brain is trying to compensate by sending out more and more hormones.
- **Klinefelter's** - A somewhat rare genetic disorder resulting in an extra female X chromosome. This often manifests as enhanced female characteristics like enlarged breast tissue and reduced muscle mass.
- **Mumps** - A disease that if caught in childhood can affect fertility in men.
- **Varicocele** - Abnormal enlargement of the scrotal veins that drain the testis, which creates Heat and may adversely affect sperm production.
- **Absence of vas deferens** - This is often due to cystic fibrosis, a genetic disorder. This makes it impossible for sperm to travel from the testis to the penis for ejaculation.
- **Medications & steroids** - Antihypertensives, anti-inflammatories, antihistamines.
- **Toxins in our environment** - Toxins in our environment can mimic estrogen and throw off hormonal balance. Many common substances have shown detrimental effects on fertility. To read more about this, visit Step Seven: Toxin Awareness.

- Radiation or chemotherapy - Cancer treatments can adversely affect sperm. Freezing sperm in men of reproductive age prior to treatments is often standard policy as a result.
- Infrared saunas - I have seen these drop sperm counts to zero. Heat may very well be the #1 enemy of sperm.
- Thyroid issues - Just like in women, the thyroid should be balanced before conception. Both hypo or hyper may have effects on various sperm parameters.
- Obesity - Plenty of research confirms that being overweight negatively impacts male fertility. This may also predispose their children to difficulties with weight, diabetes and other metabolic conditions.
- Blue collar careers - A higher percentage of blue collar workers (skilled or unskilled manual labour) report poor semen parameters when compared with white collar workers (professional, managerial, or administrative work). This was one of many factors identified by researchers from Women's Hospital in Heidelberg, Germany (Gerhard et al , 1992).
- Mobile phones - Much like the cigarette, it's our new bad habit. Even while not in use, if it's sitting beside your testicles, it could be impacting the health of your sperm.
- Tight pants or underwear - Heat being the #1 enemy of sperm tells us that tight synthetic garments should be left on the rack.
- Genetic abnormalities - Karyotype problems or Y-microdeletion problems. Simply put, these are issues with the number (deletions), appearance and proper positioning of chromosomes. The most common being Klinefelter's discussed above.
- Heat extremes - Environmental heat like that experienced by chefs, or internally generated heat caused by fevers.
- Surgery - Lower abdominal surgery such as with inguinal hernia has the potential to break the blood-testis barrier resulting in the formation of antisperm antibodies, a condition where antibodies attach to the sperm and inhibit its ability to swim.
- Bad habits -Alcohol, nicotine, marijuana, cocaine and any other recreational drugs may have negative effects on sperm and overall health.
- Poor diet - This links intimately to obesity, as well as the potential negative impacts that paternal nutrition may have on offspring. Read on for more details on a sperm-friendly diet.

AntiSperm Antibodies

A man may produce antibodies to his own sperm, which means that the immune system is mounting an attack against his own sperm.

For the most part, sperm is protected from the immune system by the 'blood-testis barrier', but when this barrier is breached (often in sloppy inguinal hernia operations), antisperm antibodies are formed and the immune system attacks, like it would to any other foreign invader. There are also theories that infection and inflammation may potentially cause a 'leakage' in this barrier, or early sperm cells, which begin their life on the immune side of this barrier, and for unknown reasons alert the immune response. Regardless of the cause, antisperm antibodies most often affect the sperms ability to optimally swim to its destination, as the extra weight of its passengers (the antibodies attached to it) slow it down.

From a Chinese medical perspective, antisperm antibodies often present in men with Dampness and Heat. This could translate into infection, inflammation, constitutional predisposition to these patterns, or a result of poor lifestyle choices such as greasy foods, alcohol and not enough rest. I also find that these men have a tendency toward allergies and sensitivities to foods and their environment. This tells me that their immune system needs regulation and their presenting TCM patterns need to be rectified.

Research with Chinese herbal medicine has shown better results versus treatment with steroids to suppress the immune system (see references below in Chinese herbal medicine section). In my personal practice, I have seen

a reduction in ASA in many male clients when treated diligently with Chinese herbal medicine for a period of at least 3-6 months.

Semen Analysis

This next bit of information is somewhat technical but it is something that I want to include because it will empower those of you that thrive on science. For those of you that find the medical jargon confusing, feel free to read ahead.

- **Normozoospermia* - An ejaculate falling within normal range of parameters.
- **Liquifaction* - Semen should liquefy within 15-60 minutes (with 15 minutes being the norm).
- **Appearance* - Normal semen is opalescent and grayish. Yellowish semen may show high intakes of vitamin supplements, abstinence or jaundice. An infection may show some red in the semen.
- **Volume* - Total volume can range from 1-5ml. Too much can mean it is diluted. Low volume may show past infection blocking the tubes, retrograde ejaculation, or problems with accessory glands such as the seminal vesicles or the prostate. Sometimes there is an absence of the vas deferens. Volume drops 20% between 30 and 50 years of age. (Aspermia = no ejaculate).
- **Agglutination* - Higher amounts of agglutination (sperm sticking together) point to antiSperm antibodies and can affect motility by coating the sperm and bind to cervical mucus preventing proper movement and difficulty fertilizing the egg. This is common in men who have had reproductive tract surgery.
- **Motility* - Rapid progressive motile swimmers are really all that matter when it comes to conception and ability to penetrate the egg. This is not distinguished in community labs - even twitching non-progressive sperm are factored into a motile %. At least 32% should be progressive (the higher the percentage of rapid progressive the better). Motility decreases by 3.1% per year. (Asthenozoospermia = low motility). Sperm DNA fragmentation should be noted here.
- **Concentration* - There should be at least 15 million sperm per ml of semen. Caffeine, tobacco, alcohol, drugs, diet, exercise and stress can also affect this. If it is very low, there may be a genetic chromosomal defect. (Oligozoospermia = sperm concentration of less than 15 million).
- **Count* - >39 million. This is total sperm count per ejaculate. (concentration X volume (ml) = count). Count drops nearly 5% per year. (Azoospermia = no spermatozoa in the ejaculate).
- **Morphology* - At least 4% of the sperm in a semen sample should be shaped normally. Avoiding things that are toxic to sperm are very important with morphology. (Teratozoospermia = poor morphology).
- **Acidity* - Semen has a pH between 7.2 and 8.
- **Round Cell Concentration* - Immature sperm or white blood cells. Too many of these in a sample may indicate infection.
- **Sperm DNA fragmentation* - The structural integrity of the DNA within the sperm may be associated with miscarriage (*see 'sperm and miscarriage' section) and diminished fertility. As a result of testing for this semen parameter being expensive, research has attempted to correlate more common semen parameters with DNA fragmentation. In a retrospective study of over 1000 men, data indicated that poor motility is the sperm parameter abnormality most closely related to sperm DNA damage. Therefore, we can hypothesize that if we can treat and improve sperm motility, DNA fragmentation rates may also improve (*Belloc, 2014*).

*WHO standards 2010 can be viewed at -

http://whqlibdoc.who.int/publications/2010/9789241547789_eng.pdf?ua=1

Diet and Nutrition

“How am I going to live today in order to create the tomorrow I'm committed to?” ~Tony Robbins

Here we will talk about some specific sperm-friendly foods and how best to incorporate them.

Folic Acid

Two studies conducted in the Netherlands emphasized the importance of folic acid for healthy sperm.

The first study, published in *The Journal of Andrology*, emphasized the importance of B6, folate (B9, folic acid), B12 and homocysteine levels in the production of sperm (*Boxmeer et al, 2007*).

The second, published in *Fertility and Sterility*, had a similar result stating that low concentrations of folate (folic acid, B9) in seminal plasma may be detrimental for sperm DNA stability (*Boxmeer et al, 2009*).

So how can you boost the folic acid in your diet? As referenced on the *Dietitians of Canada* website (dietitians.ca), dark green vegetables like broccoli and spinach and dried legumes such as chickpeas, beans and lentils are good natural sources of folate (folic acid). The best sources of Vitamin B12 include eggs, meat, fish and poultry, and the top sources of Vitamin B6 are liver, wild Atlantic salmon, tuna and fortified meatless alternatives.

Sarah Kimmins, an expert in epigenetics and reproduction, has published many articles emphasizing the importance of the father-to-be diet. The study focused on a diet deficient in folate and found excellent motivation for men to adhere to a folate-rich diet.

A father's diet before conception can affect the health of his offspring. There's a common perception that the father can do whatever he wants without consequence to others. Kimmins research shows that this isn't the case — men really need to think carefully about the life they're living because future generations can be impacted.

The researchers examined the sperm of males with a folate deficient diet, and found genetic links to development of diseases such as cancer, diabetes, autism and schizophrenia. They also found a link between a father's diet and possible muscular and skeletal birth defects (*Kimmins, 2013*).

Lycopene and Carotene

In a study published in *Fertility & Sterility*, a prominent peer reviewed medical journal, positive correlations between the intake of the antioxidant lycopene and sperm morphology (shape), and the antioxidant carotene and sperm motility (movement) (*Zareba, 2013*) were found. As talked about in the Step on diet, adding color is always encouraged.

Here are some examples of lycopene and carotene rich foods:

- Lycopene Rich Foods for Sperm Morphology: Tomatoes (sun dried are best, raw and cooked are also good), guava, watermelon, grapefruit, parsley, basil, asparagus, liver, red cabbage.
- Carotene Rich Foods for Sperm Motility: Sweet potato, kale, carrots, greens (spinach, mustard, turnip, collard), butternut squash, red leaf lettuce.

Protein

Men need to make sure they are getting enough protein. This is not an issue for most men, but for some it can be. If you are a vegetarian or vegan and are having trouble conceiving, TCM would advise you to begin including some animal or fish protein in your diet. Get as much as you can from fish and vegetable sources but a good quality steak (happy cattle only, please) can be medicinal. It shouldn't be a large part of a man's diet because cholesterol levels should also be paid close attention to but consider it an augmentation.

A good rule of thumb - if it is bad for your heart, it is bad for your sperm and balance is always good. Certain foods, such as fish, will combat cholesterol so the more fish you eat, the more fatty four-legged animal muscle you can have.

And speaking of four-legged animals...

In a study of bulls, the conclusion published in the Journal of Animal Science stated that plant-based diets reduced the amount of fructose in the semen samples of the bulls being observed (*Shirley, 1963*). Fructose is a simple sugar present in semen necessary to feed the sperm so that their mitochondria can produce ATP (cellular energy). Sperm needs this sugar to get the energy required to whip their tail so they can swim.

Alcohol

If you are healthy and your sperm shows no abnormalities, then two or three drinks once or twice a week should be okay. But while you are trying to conceive a child, giving up alcohol for a while certainly wouldn't hurt. If your sperm *does* show abnormalities or you have a reproductive hormone imbalance, I would definitely recommend abstaining from alcohol.

Recommended Supplements

Zinc

A study done in two fertility practices in the Netherlands showed a 74% increase in total normal sperm count after combined zinc sulfate (66mg) and folic acid (5mg) treatment for 26 weeks (6 months) in both subfertile and fertile men (*Wong et al, 2002*).

Vitamin B6, B9 (folate), B12 Homocysteine blends

See above information for expansion on these and how to incorporate them into your diet.

CoQ10 & L-Carnitine

Research in Japan on 212 men with poor semen parameters of unknown cause were given either 300mg of CoQ10 or a placebo for 6 months (106 men in each group). Coenzyme Q10 supplementation resulted in a statistically significant improvement in sperm concentration, motility and morphology, as well as a positive effect on reproductive hormone levels (*Safarinejad, 2009*).

- Recent research done in Iran also showed improvement in semen parameters and reproductive hormone levels (*Ghanbarzadeh, 2013*).
- Another study involving men with low motility showed that taking 200mg CoQ10 for 6 months significantly improved this condition (*Balercia et al, 2009*).

Fish Oils high in Omega 3 EPA and DHA

- 238 infertile men with poor sperm count, motility and morphology were randomised to eicosapentaenoic (EPA) and docosahexaenoic acids (DHA), 1.84 g per day, or placebo for 32 weeks. Significant improvement in semen parameters was noted in the EPA DHA group. The researchers concluded that

men with low levels of EPA and DHA may benefit from omega-3 FA supplementation (*Safarinejad, 2011*).

- Research from Virginia published in *Theriogenology - An International Journal of Animal Reproduction* showed an increase in the amount of sperm per ejaculation in boars that were supplemented with Omega-3 (*Estienneemail, 2000*).
- A study published in the *Journal of Clinical Nutrition* showed that infertile men had lower concentrations of Omega-3 than fertile men. These results suggest that more research should be performed to assess the potential benefits of Omega-3 supplementation as a therapeutic approach in infertile men (*Safarinejad, 2010*).

Probiotics (i.e. *acidophilus, bifidum*)

Aid the body in digesting and absorbing nutrition for sperm health, producing B vitamins (see the importance of B6, B9, B12 above), and immune regulation possibly playing an important role with immune infertility conditions such as antisperm antibodies.

Vitamin D

A Japanese study displayed the importance of the role of Vitamin D in male reproductive health. It indicated that Vitamin D deficiencies resulted in decreased sperm count and decreased motility (*Kinuta et al, 2000*).

Multivitamin

These will cover minimum nutritional requirements of anything that may be missing in your diet.

Obesity

The Aberdeen Fertility Centre at the University of Aberdeen revealed that obese men produced 60% less seminal fluid than men with a healthy Body Mass Index and had 40% higher levels of abnormal sperm. The study also found that severely underweight men, with a Body Mass Index less than 19, also had poorer sperm quality than men in the healthy weight range. Speaking at the European Society of Human Reproduction and Embryology meeting in Barcelona, Dr. Ghiyath Shayeb, who led the study, said obese men could improve their sperm quality by losing weight and achieving a healthy BMI (*Shayeb, 2011*).

A multicenter study published in the pages of 'Fertility and Sterility' showed that embryos from obese male mice had reduced cleavage and decreased development to blastocyst (define) stage during IVF culture relative to males of normal BMI. Blastocysts from obese males implanted at a reduced rate, and the proportion of fetuses that developed was significantly decreased (*Mitchell, 2011*).

NOTE: *BMI or Body Mass Index is a measure of relative weight based on an individual's mass and height.*

Stress and its Effects on Male Fertility

In my clinical practice, it is abundantly clear that the management of stress plays a significant role in optimizing fertility.

There is a growing body of evidence that correlates psychological stress such as anxiety and depression to reproductive hormonal imbalance, production of subfertile sperm and poor IVF outcomes.

Regularly I see this type of research confirmed but after an acupuncture session, men leave the clinic with a sense of calm. They tell me that it provides an overall sense of well-being, which is reflected in all aspects of their life from relationships to increased productivity and better sleep.

Studies

- Anxiety and depression lower testosterone levels and correlate with poor semen quality (*Bhongade et al., 2014*).
- Men who have difficulty describing their feelings present with lower sperm concentration (*De Gennaro, 2003*).
- Stressful life events may be associated with decreased semen quality in fertile men (*Gollenberg, 2010*).
- Increased levels of anxiety were associated with lower semen volume, sperm concentration and count, reduced sperm motility and increased sperm DNA fragmentation of IVF patients (*Vellani, 2013*).
- Sperm concentration and motility decreased when comparing prior semen samples to samples given on egg retrieval day during IVF (*Clark, 1998*).
- Men with insomnia were tested to have poorer quality sperm and smaller testis size than men who sleep well (*Jensen, 2012*).
- Men who experienced two or more stressful life events in the past year compared with no stressful events had a lower percentage of motile sperm and a lower percentage of morphologically normal sperm (*Janevic, 2014*).

Stress has a negative impact on all aspects of health and male fertility is no exception. It is important to find ways to manage stress. For some ideas, refer to Step Four under the heading of stress.

NOTE: *In a recent study conducted on mice, it was revealed that acupuncture regulates the specific hormones associated with the biochemical reactions that take place in the body as a result of stress.*

This study demonstrated that acupuncture provides a sense of balance rather than simply suppression of the stress response. The resulting effect is a greater ability to manage and react to stress (Wang, 2014).

TCM and Male Infertility

Often a TCM doctor specializing in the treatment of male factor infertility is the only healthcare professional that men have a chance to really talk with since few healthcare practitioners are well versed in both the mind and body aspects of male factor infertility.

It is rewarding to connect with my male patients and give them the emotional support needed as well as treatment and tools to improve their overall health, well-being and fertility.

Treatment is intended to improve chances of natural conception, IVF success and reduce the incidence of miscarriage. In addition to improving semen parameters, TCM addresses issues that may directly affect fertility such as impotence, premature ejaculation and low libido, as well as helping with stress, aches and pains, and many other ailments men typically suffer from that may be impeding fertility. These include urinary and prostate issues, hypertension, anger and irritability and digestive or bowel conditions.

Acupuncture

A TCM treatment plan includes acupuncture and/or herbal medicine and is individually engineered to increase overall health and fertility. Recommended treatment should be through at least 1-2 full cycles of spermatogenesis (the production or development of mature sperm). 12-24 acupuncture sessions once or twice a week, within a 3-6 month period.

The following statements are conclusions of various studies showing the positive effects on sperm with Chinese herbal medicine and acupuncture.

- 82 infertile men who achieved a poor fertilization rate in at least 2 IVF/ICSI cycles were given acupuncture twice per week for 8 weeks then did another IVF/ICSI. The fertilization rates after acupuncture (66.2%) were significantly higher than that before treatment (40.2%), (*Zhang, 2002*).
- For the following pilot study, a group of 32 infertile men with abnormal semen analysis were randomly divided into two groups; one group was given 10 acupuncture treatments over 5 weeks, and the other, no treatment. Significant improvements were demonstrated in the acupuncture group compared to the control group, in particular improved motility and morphology (*Siterman, 1997*).
- This pilot study showed a positive effect of acupuncture on sperm count, but this time on men with such low sperm counts (or no sperm) that they would usually require a testicular biopsy to extract sperm for use in an IVF cycle. Seven of the 15 men with no sperm at all produced sperm detectable by the light microscope after a course of 10 acupuncture treatments, i.e., enough sperm could be produced for ICSI to be performed without recourse to testicular biopsy. The control group with similar semen analysis and no treatment showed no change after three months. It should also be noted that males with genital tract inflammation exhibited the most remarkable improvement in sperm density (*Siterman, 2000*).
- In this study involving 80 men, the effects of abdominal electroacupuncture (acupuncture in which the needles used carry a mild electric current) improved testicular blood flow was shown. Just as electroacupuncture can increase blood flow to the ovaries and uterus, it can as well to the testicles. These researchers suggest that such a stimulus may address the damaged microcirculation associated with varicoceles, and with aging. They note that decreased testicular arterial blood flow may result in impaired spermatogenesis from defective metabolism in the microcirculatory bed (*Cakmak, 2008*).
- In this prospective, randomized, single-blind, placebo-controlled study, 28 infertile patients with poor motility and low count received acupuncture twice weekly for 6 weeks according to the principles of traditional Chinese medicine and 29 infertile patients received placebo acupuncture. A significantly higher percentage of motile (moving) sperm was shown and the authors conclude that the results of the present study support the significance of acupuncture in male patients with low sperm motility (*Dieterle, 2009*).
- 28 male factor infertility patients received acupuncture twice a week over a period of 5 weeks. The samples from the treatment group were randomized with semen samples from the untreated control group. A general improvement of sperm quality, specifically in the ultrastructural integrity of sperm, was seen after acupuncture. The researchers concluded that male infertility could benefit from employing acupuncture (*Pei, 2005*).
- Men that manifest low sperm count and higher scrotal temperatures due to genital tract inflammation or poor lifestyle habits can benefit from the scrotal temperature lowering effects of acupuncture (*Siterman, 2009*).

Chinese Herbal Medicine

- Protective effects of Hochuekkito (a combination of 10 raw Japanese herbs) on sperm was found on sperm with antisperm antibodies (ASA). Although normal sperm with ASA was used in this report, since the sperm of infertile patients are said to be more fragile, this results imply that direct protective effect is one of the mechanism of Hochuekkito for male infertility (*Yamanaka, 1998*).

- 156 men with low sperm count and inability to conceive were administered individually modified versions of the Chinese herbal formula, Sheng Jing Qiang You Tang (Engender Essence & Strengthen Fertility Decoction) for 3-6 months. They were not allowed to drink alcohol, smoke or have sex. In 98 men, their sperm count increased above WHO standards, and 35 men showed an increase in sperm count but did not yet meet 'fertile' WHO criteria (*Zhang, 2005*).
- 100 men with low sperm count and poor sperm motility were treated with individually modified Chinese herbal formulations combined with Clomid and Vitamin E daily for 15-60 days (37.3 days average). 82% showed significant increases in both count and motility. This may be a viable treatment option for men with poor sperm motility and low sperm counts (*Chang-Jie, 2007*).
- 100 cases of male immune infertility in the treatment group were treated with Yikang Decoction, while 100 cases were treated with prednisone (steroid used for immune suppression) as the controls. The Yikang Decoction has a more stable effect for male immune infertility than prednisone. Antisperm antibodies, percentage of motile sperm, pregnancy rates and sperm agglutination (clumping) were all significantly better in the group treated with the Chinese herbal formula, Yikang Decoction vs the prednisone treatment group (*Sun, 2006*).
- 132 men with antisperm antibodies were treated for 1.5-4.5 months with a Chinese herbal formula, Ju He Wan. After treatment, 120 men (91%) tested negative for antisperm antibodies (compared to only 45% of the group treated with prednisone). 74 of these same men conceived after 1.5-3 months of treatment (*Cheng, 2007*).
- The effects of a Chinese herb, *Cornus officinalis*, on the motility of human sperm was studied. A water-based extract was prepared from the dried fruits of the herb and used in this study. The crude extract showed substantial stimulatory effects on sperm motility (*Jeng, 1997*).
- Mice taking Tai-bao Chinese herbal medicine displayed significantly higher rates of implantation and pregnancy, as well as comparative rates of lowering effects of antisperm antibodies as prednisone controls. Chinese medicine Tai-bao possesses a regulatory effect on reproductive immune function, inhibitory effect on antisperm cytotoxic antibody, and promoting effect on pregnancy (*Lai, 1997*).
- 87 cases of male infertility were treated with Bu Shen Sheng Jing Pill, and the comprehensive semen routine analysis score was enhanced significantly. The result showed that this prescription had a regulatory function in follicle stimulating hormone, luteotropic hormone, testosterone and cortisol (could bring the enhanced or reduced hormone level back to normal range), (*Yue, 1996*).
- 37 infertile men with varicocele were treated with Guizhi-Fuling-Wan for at least 3 months. Before and after the administration, semen qualities such as sperm concentration and motility were examined, and the varicocele was graded. A varicocele disappearance rate of 80% was obtained with 40 out of 50 varicocele, and improvement of sperm concentration and motility were found in 71.4% and 62.1% of patients, respectively. From these results, Guizhi-Fuling-Wan is considered to be effective for circulation disorders in varicocele as well as semen quality (*Ishikawa, 1996*).
- 90 men with immune infertility were selected and randomly divided into two groups; 60 in the treatment group treated by Huzhangdanshenyin, and the other 30 in the control, treated by prednisone, both for three months. The improvement of clinical symptoms, immunologic indexes (antisperm antibodies in serum and seminal plasma) and sperm indexes (semen liquefied duration, motility, viability, density and abnormal morphology rate) were observed and the results analyzed. The Chinese medicine

Huzhangdanshenyin works more effectively than prednisone in the treatment of male immune infertility. It could improve the antisperm antibody reversing ratio, clinical symptoms and signs and ameliorate sperm indexes with no obvious adverse effects (Lu, 2006).

According to TCM, male factor infertility can be categorized into the following three disease mechanisms: Blockage, Deficiency and Heat.

In my experience, the clinical picture is a varied combination of patterns that may span all three of these mechanisms.

Blockage is most often caused by Qi Stagnation, Dampness, Phlegm, Heat and Blood Stasis. Deficiencies are most often a result of insufficient Yin, Yang, Qi and/or Blood. Finally, the generation of Heat is a result of any chronic blockage or more advanced Yin deficiency.

Again, it is important to note that every patient will exhibit at least two or more of the patterns below simultaneously but in varying degrees. For example, a man may clearly fit into the pattern of Damp Heat but may also show signs of Blood Stasis and Qi Stagnation. Therefore, it is important to rank yourself (or your husband) in presenting order so that recommendations that are most relevant can be prioritized for implementation. It is equally important that a licensed TCM doctor determines the precise pattern differentiation before Chinese herbal medicine or more extensive treatment is administered.

Let's have a look at some of the patterns so you can see where you may fit.

Qi Stagnation (causing Heat)

Causes: Anger in all its forms including impatience, irritability, frustration, sarcasm, road rage, etc. is among the primary causes. Stress is a close second and can be characterized as any emotional extreme, sexual anxiety, the feeling of being stuck or unfulfilled, lack of joy and work/life pressures. Physical activity, either extreme or deficient, may both cause the Qi to stagnate. Also any trauma to the lower abdomen or genitals.

Symptoms: Bowel movements alternating from loose to constipated, neck tension, shallow breathing, frequent sighing or yawning, possible digestive issues, a wiry pulse (feels like a guitar string snapping against your fingers). Tongue body may be purplish or have orangey sides.

Andrology: May display as low sperm count, low motility, poor morphology, low volume, delayed liquefaction, often see erectile dysfunction, difficult and/or premature ejaculation, difficult to achieve orgasm, low libido.

Diet:

Emphasize:

- More fruit, sprouts, mung beans, seaweed, lettuce, cucumber, radish, celery, asparagus, chard, spinach, bok choy, cauliflower, sweet corn, zucchini, apple, asian pears, watermelon, citrus, fish, nuts, green apples, peppermint and spearmint, orange peel tea, rosemary, scallions, onion, fennel, anise, dill, mustard and dandelion greens, basil, nutmeg, marjoram, elder flowers, radish and its leaves, taro and turnip.
- 50-75% of food intake should consist of colorful (particularly green) vegetables (50% raw, 50% cooked)
- Fish and nuts as a primary protein source.
- Cook lightly and include plenty of raw food

- Fresh vegetable juice and smoothies are recommended.
- Drink lots of room temperature or slightly cool water as dehydration is often an issue (weight in lbs x 15 = ml/day recommended).
- Eat more bitter foods such as endive and dandelion greens.
- Relax, breathe, enjoy and chew your food.

Avoid:

- Excessive sour foods like vinegar, pickles
- Alcohol.
- Dairy, caffeine, sugars, processed foods.
- spicy, processed, and greasy foods, dairy, alcohol, coffee, garlic, lamb, beef, shellfish, curries, ginger, cinnamon, pepper
- Too many comfort foods (carbohydrates) to ease emotional stagnation will lead to digestive upset (gas, bloating)
- Business at meal time. Eating ‘on the go’ or skipping meals. Relax, breathe, enjoy and chew your food.

Recipe ideas:

- Fresh fruit and veggie smoothies
- Leafy salads with dandelion greens, cucumbers and sprouts
- Miso soup with plenty of seaweed and tofu
- Watermelon watermelon watermelon - particularly in summer months
- Wild rice and barley with mung beans, apples, and shredded almonds
- Baked white fish with lemon and sweet corn
- Avocados with a dash of salt
- LOTS of water with mint leaves (weight in lbs x 15 = ml/day recommended).
- Mung bean soup
- mung bean vermicelli with scallops
- green papaya salad with cilantro, sesame oil and lime
- Mustard greens salad with peppermint and radish
- Pickled fennel
- Green apples and pistachios
- Fried radish leaves and onions in vinegar and oil with dill
- Pickled lotus root with yuzu zest

Supplements: Coq10, fish oil high in EPA, homocysteine (B6,folate,12), antioxidants, digestive enzymes (between meals), probiotics, zinc, Vitamin D. Properly prescribed Chinese herbal medicine works extremely well for this pattern. *See Step Five for full information.

Lifestyle recommendations: Sleep in and wear natural breathable fibers like linens or cotton. If anger or any of the above mentioned emotions are prevalent in your character, getting help to control them is important. Try to set aside time for relaxation. Meditation, Qigong, Tai Chi, or Yoga would be excellent activities to restore balance and reduce stress.

Damp Heat

Causes: Sedentary lifestyle, poor dietary habits such as over consumption of alcohol, greasy foods and sweets. Damp or hot climate, synthetic underwear and pants, professions that are exposed to excessive heat such as welders or chefs, stress and digestive issues.

Symptoms: Itchy and/or warm sweaty groin, genitals and anus, skin eruptions in groin and buttocks area, scanty warm yellow urine, fullness in lower abdomen, gas and bloating, fatigue, anxiety, thirst for cool fluids, bowel movements may be accompanied by an unfinished feeling. Tongue can be sticky with a thick yellow coat especially at the root and a red body is not uncommon. Pulse is often rapid.

Andrology: May display as low sperm count, poor morphology, low volume, low motility, antisperm antibodies, semen appears yellowish, may see white blood cells in semen, varicocele.

Diet: also see ‘Phlegm (Damp)’ section below.

Emphasize:

- more fruit, sprouts, mung beans, seaweed, lettuce, cucumber, radish, celery, asparagus, chard, spinach, bok choy, cauliflower, sweet corn, zucchini, apple, asian pears, watermelon, citrus, fish and nuts.
- 50-75% of your food intake should consist of colorful (particularly green) vegetables (50% raw, 50% cooked)
- Cook lightly and include plenty of raw food
- Fresh vegetable juice and smoothies are recommended.
- Drink lots of room temperature or slightly cool water as dehydration is often an issue (weight in lbs x 15 = ml/day recommended).
- Eat more bitter foods such as endive and dandelion greens.
- Relax, breathe, enjoy and chew your food.

Avoid:

- spicy, processed, and greasy foods, dairy, alcohol, coffee, garlic, lamb, beef, shellfish, curries, ginger, cinnamon, pepper
- Eating ‘on the go’ or skipping meals.
- Alcohol.

Recipe ideas:

- Fresh fruit and veggie smoothies
- Leafy salads with dandelion greens, cucumbers and sprouts
- Miso soup with plenty of seaweed and tofu
- Watermelon watermelon watermelon - particularly in summer months
- Wild rice and barley with mung beans, apples, and shredded almonds
- Baked white fish with lemon and sweet corn
- Avocados with a dash of salt
- LOTS of water with mint leaves (weight in lbs x 15 = ml/day recommended).
- Mung bean soup
- mung bean vermicelli with scallops

- green papaya salad with cilantro, sesame oil and lime

Supplements: Fiber, probiotics, fish oil high in EPA, homocysteine (B6,9,12), antioxidants, broad spectrum digestive enzymes (between meals), zinc, CoQ10, Vitamin D. Properly prescribed Chinese herbal medicine works extremely well for this pattern. See Step Five for full information.

Lifestyle recommendations: Sleep with and wear natural breathable fibers like linen and cotton. Keep your genitals cool by giving them lots of fresh air time, set aside time for relaxation, express gratitude and find ways to cultivate spiritual well-being. Excessive cycling is not recommended. Avoid triggers that may cause alcohol consumption and poor dietary choices. Some men may need to simply take things down a notch, as the fast-paced life they are leading is causing Damp Heat and negatively affecting their sperm.

Kidney Yang Deficiency

Causes: Advanced Paternal Age (APA), hypothyroidism, excessive physical work for many years, constitutional weakness as a genetic predisposition, chronic back and knee injuries, long term fear, excessive exposures to cold, and over consumption of antibiotics or other medications.

Symptoms: Overweight, swollen, pale, fatigued, slow moving, weak, cold (particularly in the limbs), affinity for heat, aversion to cold, listless, fatigued, lack of spirit, pale white complexion, cold damp sensation in the external reproductive organs, copious clear urine, nocturia (urination at night), lack of power, will, or assertion that propels and targets the major episodes of life, fear, paralyzed by the unknown, passive, lack ability to assert themselves, easily controlled by others, take blame, feel guilty, large sense of responsibility, sexual anxiety. Tongue may be pale and swollen with white moist coat. May all worsen with excessive sexual activity.

Andrology: Low sperm count and motility, rapid liquefaction, clear in appearance, premature ejaculation, weak orgasm and ejaculation, tired and/or dizzy after ejaculation, low libido, may see erectile dysfunction.

Diet:

Emphasize:

- More onion, leeks, chives, small amounts of garlic, scallions, black beans, brussels sprouts, sunflower seeds, sesame seeds, walnuts, pine nuts, chestnuts, cashews, fennel, cumin, cherries, dates, shellfish, chicken, beef, pepper, mustard.
- Animal protein such as lean meats & fish, as well as bone broths and nuts should a focus.
- Cooked vegetables should also be plentiful to maintain optimal nutrition.
- Omega oils from fat sources such as walnuts, avocados, and fish.
- Baked squash and root vegetables

Avoid:

- Raw uncooked or cold foods (straight from the fridge or freezer) especially in winter.
- Avoid dairy, caffeine, sugars, and processed foods.
- Alcohol, particularly cold beer.

Recipe ideas:

- shrimp fried in butter, garlic, and pepper
- bone broth soup with leeks, potatoes, and brussels sprouts
- pate - sunflower seeds, sesame seeds, walnuts, mushrooms
- roast chicken with pepper sage and thyme

- Roasted vegetables with garlic and rosemary
- Rice porridge with cinnamon, nutmeg and a little brown sugar
- Curried vegetable bisque (cardamom, allspice, thyme)

Supplements: Whole food multivitamin, probiotics, CoQ10, fish oil high in EPA, antioxidants, homocysteine (B6,9,12), zinc, Vitamin D. Long term administration of Chinese herbal medicine is often necessary to improve Kidney deficiency. See Step Five for full information.

Lifestyle recommendations: Keeping warm and not allowing your body to become cold is important. Finding a fitness routine that builds strength and focuses on aerobic activity, getting enough sleep, managing stress, socializing with other men, seeking help if depression is an issue, eliminating alcohol, tobacco and marijuana, losing weight if necessary, finding help in overcoming your fears and building confidence and avoiding toxins in our environment that mimic estrogen.

Kidney Yin/Essence Deficiency (causing Heat)

Causes: Constitutional weakness due to a genetic predisposition and/or ‘burning the candle at both ends’ via excessive work, play, exercise or a busy life without proper attention given to adequate nutrition and rest. This is also a common pattern in those which use their minds a lot, such as students and academics.

Symptoms: These people tend to be thin or emaciated, have red cheeks, be restless, quick moving with narrow shoulders, weak lower knees, tinnitus (ringing in ears), insomnia, warm hands and feet, night sweats, hot flushes, dryness of mouth and skin, dry stools, anxiety and irritability. They are fidgety, jumpy, lack tranquility are fearful and have sexual anxiety and diminished willpower. Tongue is red with a thin scanty coating that is white or yellowish, and the pulse feels rapid.

Andrology: No sperm in ejaculate, poor count morphology and volume, delayed liquefaction, thick sticky semen that may appear yellowish (if Heat is present), may see premature ejaculation.

Diet:

Emphasize:

- More fish, root vegetables, seeds, nuts (walnuts), eggs, dark leafy greens, dates, liver, some fatty cuts of meat, and bone marrow.
- Microalgae like chlorella, spirulina and wild blue-green algae
- Omega oils from fat sources such as evening primrose, avocados, and fish.
- Eat at least three meals daily with at least one snack and do not skip meals
- Cook lightly and include plenty of raw food
- Fresh vegetable juice and smoothies are recommended.
- Staying hydrated. Drink lots of room temperature or slightly cool water (weight in lbs x 15 = ml/day recommended). Coconut water is also beneficial
- Relax, breathe, enjoy and chew your food.

Avoid:

- Spicy food, legumes, coffee, alcohol, sugars, shellfish, and processed foods, especially in summer and fall.
- Alcohol
- Eating ‘on the go’ or skipping meals.

Recipe ideas:

- Fruit and leafy green smoothies with maple syrup and banana
- Fish dishes with coconut milk
- Omelette with mushrooms and black beans
- Asparagus and egg salads with sesame seeds
- Tacos made with Kidney beans and topped with a small amount of cheese
- Baked Potato stuffed with tofu, soy sauce (Braggs) and sesame seeds.
- Pork and apple dishes
- Miso soup with udon noodles tofu and seaweed
- Bone broth soup with lotus root, go ji berries and pine nuts
- Oatmeal with molasses, go ji berries, raisins and cinnamon

Supplements: Whole food multivitamin, probiotics, CoQ10, fish oil high in EPA, antioxidants, homocysteine (B6,9,12), zinc, Vitamin D. Long term administration of Chinese herbal medicine is often necessary to improve kidney deficiency. See Step Five for full information.

Lifestyle recommendations: Relaxation, sleep and rest are all very important. Reducing work and exercise may be necessary. Sleep with and wear natural breathable fibers. Incorporate deep breathing into daily activities. Meditation, Qigong, Tai Chi, or Yoga would be excellent activities to restore balance.

Qi and Blood Deficiency

Causes: Excessive physical work for many years, constitutional weakness due to a genetic predisposition, poor nutrition, chronic depression, sadness or worry, recovery from injury or illness, lack of exercise.

Symptoms: Fatigue, low energy, a weak immune system, pale complexion, digestive issues such as bloating and gas, loose bowel movements, listlessness, lack of spirit, heart palpitations, difficulty falling asleep, poor memory, dizziness, poor appetite, laziness, shortness of breath, pale nails, brittle hair, the tongue body is pale, the pulse feels deep, thin and soft. Prone to worry, over-thinking, stress, chronic illness, poor self-esteem and lack of motivation.

Andrology: Low sperm count, low motility, low volume, diluted appearance (watery), may present with erectile dysfunction, premature ejaculation and low libido, varicocele.

Diet:

Emphasize:

- More aduki and kidney beans, beef, beets, bone marrow, eggs, dark leafy greens, apricots, dates, figs, grapes, liver, microalgae, nettle leaf, avocados, oysters, sardines, chia seeds, congee, oats, quinoa, rice, beef, chicken, herring, lamb, mussels, shrimp, sunflower seeds, sweet potato, watercress and winter squash..
- Emphasize root vegetables (75% or more cooked, 25% or less raw)
- Animal protein such as red meats, organs (liver), and fish.
- Bone broth vegetable soups and stews
- Nuts and whole grains should be eaten generously
- Room temperature or warm water (weight in lbs x 15 = ml/day recommended)

Avoid:

- Dairy, caffeine, sugars, processed foods.
- Excessive legume intake
- Large portions, instead eat many smaller meals throughout the day
- Business at meal time. Relax, breathe, enjoy and chew your food.
- Alcohol, particularly cold beer

Recipe ideas:

- Hard boiled eggs with avocados
- Beef bone broth and root vegetable soup
- Liver and onions
- Nuts and dates
- Oil and vinegar fried spinach
- Roasted root vegetables (beets & yams) with rosemary and dill
- Oatmeal with dates, almond milk and maple syrup
- Sunflower seed mushroom and nutritional yeast pate
- Fried peppered shrimp and quinoa
- Steak and sweet potatoes
- Open face sunflower sprouts and seeds with chia, tomato and lots of pepper sandwich
- Soups and stews in general (easy to digest)
- Chicken soup with astragalus
- Forest mushroom stir fry with rice noodle

Supplements: Whole food multivitamin, probiotics, CoQ10, fish oil high in EPA, antioxidants, zinc, Vitamin D. See Step Five for full information.

Lifestyle recommendations: Focus on a fitness routine that builds strength and focuses on aerobic activity. Get enough sleep, manage stress, schedule social time. Seek help if depression is an issue, eliminate alcohol, tobacco and marijuana, lose weight if necessary. Find help in overcoming your fears and building confidence and avoid toxins in our environment that mimic estrogen. See Step Seven for more on this.

Blood Stasis

Causes: Any chronic health imbalance or TCM pattern including poor lifestyle habits, over time will eventually result in Blood Stasis. Other causes may include trauma or surgery.

Symptoms: Fixed pain anywhere on the body that is stabbing in character, chronic disease history, purple lips, spider veins, dull grey face. The tongue may be purple in color and/or may have purple spots and sublingual veins that are dark and distended. The pulse has a choppy nature, not feeling like it passes smoothly under the fingers and may vary in rate.

Andrology: Low sperm count, motility and volume. Poor morphology, the presence of antisperm antibodies, possible red blood cells in semen, also may present with erectile dysfunction, pain with ejaculation, pain in the testis or scrotum and varicocele.

Diet:

Emphasize:

- More turmeric, scallions, nutmeg, chives, garlic, vinegar, basil, ginger, chestnuts, rosemary and cayenne.
- Pomegranate, gobo, lotus root, cabbage, soybean, Jew's ear, corn, prawn, squid
- 50-75% of food intake should consist of colorful (particularly green) vegetables (50% raw, 50% cooked)
- Fish and nuts as primary sources of protein
- A little spicy food can be beneficial but caution if there are prominent Heat signs.
- Stay well hydrated. Room temperature water (weight in lbs x 15 = ml/day recommended)

Avoid:

- Dairy, sugar, processed foods
- Excessive sour flavoured foods
- Deep fried greasy food and saturated fats
- Large portions.
- Excessive amounts of spicy foods if signs of Heat are present (see above)

Recipe ideas:

- Roasted onions garlic and yam with rosemary and cayenne
- Chicken rice noodle soup with scallions chives and ginger
- Pickled jalapenos or banana peppers
- Spicy curried eggplant
- Peppered roasted chestnuts
- Korean short ribs and kimchee
- Stir fried gobo and lotus root with sesame oil and tamari
- Seafood curry soup

Supplements: Fish oil high in EPA, homocysteine (B6,9,12), CoQ10. See Step Five for full information.

Lifestyle recommendations: Cardio training for ½ hour 4 times per week. Daily stretching is very important. Deep breathing incorporated into daily activities.

Phlegm (Damp)

Causes: Poor diet, i.e., excessive consumption of greasy and sweet foods, overeating in general, alcohol, sedentary lifestyle, chronic sadness and high stress levels, worry, overthinking, hypothyroidism, low testosterone and repeated use of over-the-counter cold medications and/or antibiotics.

Symptoms: Foggy mind, chest oppression, nausea, dizziness, lack of coordination, sinusitis, snoring, copious sputum, palpitations, overweight, centralized obesity (aka a beer belly). The tongue will appear swollen with a thick slippery greasy coating.

Andrology: Low sperm count, volume and motility, poor morphology. May see erectile dysfunction, possible ejaculation difficulty, low libido, may see testicle pain including hardness lumps or swelling. May be present

with enlarged prostate and accompanied symptoms such as urinary difficulty including dribbling, pain, frequency and reduced flow.

Diet:

Emphasize:

- More legumes, black pepper, seaweeds, lean meats, fish, bone broths
- Lightly cooked vegetables (65% cooked 35% raw)
- Reduce the amount of food eaten at one sitting, instead eat many smaller meals throughout the day.
- Relaxation and thorough chewing of food.
- More soups and stews will be easier to digest and should be a focus. Add flavours that are aromatic to assist with digestion: cardamom, cinnamon, ginger, cloves, turmeric, rosemary, parsley, marjoram, tarragon
- Drink lots of room temperature water (weight in lbs x 15 = ml/day recommended).
- Start each meal by taking a few deep breaths to smell your food, allow the saliva to build up in your mouth, it is full of the digestive enzymes ready to break down your meal. Do not drink any water just before eating, sip on water throughout your meal instead.

Avoid:

- Dairy - all types, especially milk, ice cream, soft cheeses, yogurt
- Deep fried food
- Smoothies, fruit juices
- Soft nuts - peanuts, cashews, pistachios
- Sugar and all sweet foods (baked goods, desserts, dried fruits)
- Limit raw food intake.
- Alcohol - all types
- Large meal portions
- Bananas and all other tropical fruits
- Sticky grains; oatmeal, wheat, spelt, rye, millet

Recipe ideas:

- Spaghetti squash with lentils and stir fried mushrooms and onions
- BBQ vinegar marinated asparagus with black pepper
- Celery and hummus (with extra cumin and paprika sprinkled on top)
- Lettuce wraps with white beans and white fish
- Fried peppered shrimp and quinoa
- Tomato purple cabbage caraway soup
- Roasted chicken with lemon, tarragon and black pepper
- Spanish paella with chorizo sausage, chicken and prawns (oregano, bay leaf, paprika, saffron, pepper, garlic, onions, chili, parsley)
- Breakfast frittata with mushrooms, spinach, oregano, olives, artichoke

Supplements: Fiber, broad spectrum digestive enzymes (with meals), probiotics, CoQ10, fish oil high in EPA, antioxidants, zinc, Vitamin D. See Step Five for full information.

Lifestyle recommendations: Physical focus should be on aerobic exercise to burn fat. Try jogging for ½ hour 4 times per week.

A few suggestions everyone can benefit from:

- *Jump on a rebound trampoline for 10 minutes each day.*
- *Contribute to your community.*
- *Prioritize your life and spend little time doing things that will not take you closer to your dreams and goals.*
- *Avoid spending time with people who trigger your bad habits.*
- *Express gratitude for what you have.*
- *Find ways to cultivate spiritual well-being.*

Sperm and Miscarriage

“The most important thing a father can do for his children is to love their mother.” ~Theodore Hesburgh

Being half the genetic code, there is a strong possibility that poor sperm quality plays a role in miscarriage, yet in my experience this potential link is never spoken about or tested for, even in recurrent loss clinics. I believe this is mostly due to the lack of medical treatment for poor sperm. ICSI (intracytoplasmic sperm injection) may help sidestep the issue of DNA fragmentation, and preimplantation genetic diagnosis (PGD) of embryos may drastically reduce the incidence of miscarriage, although its use is still in question in some circles and it is still very cost prohibitive, adding approximately \$5000 to an IVF cycle.

Several studies have examined the link between sperm DNA damage levels and conception and miscarriage rates, so a systematic review and meta-analysis of studies which examined the effect of sperm DNA damage on miscarriage rates was performed. Sixteen cohort studies (2969 couples), 14 of which were prospective, showed a significant increase in miscarriage in patients with high DNA damage compared with those with low DNA damage. The researchers went on to express that the implications of these findings indicates that tests detecting DNA damage could be considered in those suffering from recurrent pregnancy loss. Further research is necessary to study the effects of damaged sperm DNA on fertility, and how the intake of dietary antioxidants improves sperm DNA and miscarriage rates (*Robinson, L. 2012*).

A study about the frequency of ejaculation and how it affects sperm’s DNA concluded that shorter periods of abstinence between ejaculations displayed improvements in sperm DNA fragmentation. It should be noted that they were comparing a group ejaculating every 24 hours with a group ejaculating every three hours, with three hours being the winner. The results of this study challenges the role of abstinence in current male infertility treatments and suggests that sperm DNA fragmentation can be efficiently reduced by a biological practice consisting of short-term recurrent ejaculation (*Gosálvez, 2011*).

If there is a link between poor sperm and miscarriage, then men should do everything they can to improve sperm parameters before trying to conceive, especially before jumping into IVF.

Chinese medicine has treated male infertility for a millennia. Most often I see very good results when the commitment is made.

Does poor sperm quality = poor embryo quality?

Could poor sperm be getting women pregnant, but producing embryos of poor quality that do not live past the early weeks of pregnancy? It is an increasingly popular suggestion among healthcare professionals that men do everything they can to improve their overall health and sperm parameters before jumping into IVF or ICSI.

Supporting Your Partner

*“If you love someone tell them...because hearts are often broken by words left unspoken.”
~Pamela Daranjo*

At any given time, I have at least two to three women who, as far as western medical testing is concerned, have absolutely nothing impairing their fertility. Time and again, I see women doing everything they can to better understand their circumstances and optimize their health, while the husband does nothing to improve his health and sperm or support his wife's efforts. This isn't right. It's a lot for a woman to take and hardly fair to her.

Supporting your partner during this time and taking responsibility for your role in creating a life is imperative not only to a healthy and happy relationship but I believe, to the success of conception. You want your partner and your future child to know that you were as much on-board with this pregnancy as was the person carrying the baby. A lack of participation may be causing stress to your partner during an already stressful time. Make the lifestyle adaptations as recommended, go to as many doctor's appointments as possible, communicate about what you're feeling and listen to your partner. This is a chance to get closer if you allow it and excellent practice for the team building that makes for great parenting.

Through my own personal development and growth, I was able to recognize arrogance and fear in myself and am compassionate when I see it in other men. A great book that helped me a lot was 'The Way of the Superior Man' by David Deida. It will help you deeply understand how to really understand and succeed with women. He also wrote 'It's a Guy Thing - An Owner's Manual for Women.'

“Love is a Verb.” ~Martin Luther King Jr.

Story

Jason R.

My wife Kristy and I have been married for almost a decade and started our journey towards having a child almost 6 years ago. At first we were able to get pregnant but each of four times ended in miscarriage; a devastating experience. Once we had seen a gauntlet of doctors, it was apparent that we would need some help in this process, which led us to fertility clinics.

The first clinic we went to was in late 2012. The process was overwhelming for both of us as we had never been through anything like it. Kristy was quite a trooper and like most males, I tried to always put on a brave front, often choosing to mourn privately so as to not add to Kristy's stress. It's funny how often we heard how lucky Kristy was to have my support. It seemed odd to me because I wouldn't have had it any other way. This was our future, our child, so it would always be our journey together as far as I was concerned. I don't think I did anything special; it's what every guy should be doing if he loves his wife and wants a child as badly as we did. Maybe some men don't think it's manly, but what could be more manly than supporting your wife?

During this time I started acupuncture. It was new to me but ultimately a rewarding experience that helped me become more of a relaxed person.

That first treatment was unsuccessful which really got us down for a couple of weeks. When we decided to try again, we went to a new clinic. Once again, we did it all together, from early morning ultrasounds, medication pickups, doctors' visits and acupuncture appointments. Kristy kept a brave face and handled it as well as one could expect. I, on the other hand, was starting to have irrational thoughts like we were being ripped off and that these doctors didn't know what they were doing. It was not good for my psyche but I guess it was a defense system trying to lay blame for the fact that natural parenthood may not be within our reach.

No matter how many times one goes through this process, it doesn't get easier. Our second treatment was also unsuccessful and having to relive the feeling of failure was not fun at all.

We decided to try a clinic in Seattle that came with a stellar reputation. This was also our only option to use an egg donor, since U.S. laws are a little less strict about it.

It was mid 2013 by then. I tried to stay strong for my wife. I often told her that if it was possible for me to do all the shots or take the pills that I would in a heartbeat. It was tough seeing her body put through so much and I wished I could do more.

Once again we were unsuccessful, but it was no easier. I'd almost come to expect failure, possibly to numb myself or try to prepare for the worst but it was still a major blow.

It was during this cycle that I stopped acupuncture and Kristy started seeing Dr. Pentland at Yinstill Reproductive Wellness. I guess one reason I quit going was that once again I felt that it was just a cash grab which while irrational is what my dark thoughts had me believing.

We decided that our next cycle would be our last as it had taken a toll on Kristy's body and been such a strain on our psyches. It was the realization that this was our last chance that really hit me hard. I couldn't mourn in private any longer. I found myself crying almost daily. It was as if all the disappointment of the last few years came flooding to the surface all at once. I finally let Kristy see how hard it was for me. I realized how badly I wanted to be a father.

We switched from Kristy's eggs to a donor's. This was not easy for her and it broke my heart to see her struggling with that decision, but as I always told her, "It's your body and only you truly know how you feel. Just know that I support any decision you feel most comfortable with". It was during this cycle that I myself started seeing Dr. Pentland. Kristy had seen him during the last cycle and she thought it would be good for me to go back to help with my emotional struggles and it did. I definitely felt calmed and it was nice to have someone to talk to that understood.

The hardest part to swallow was the fact I'm insecure in many aspects of life, but I know with all my heart that I would make an excellent father. It's a type of confidence I've never had before. Having not had a father around growing up has only instilled a deep appreciation of what I would do for a child of mine and how much I would give. I really hope I get that chance.

Even at our lowest points, one thing I am grateful for is how close this has brought my wife and I. Many marriages are destroyed both emotionally and financially but this actually brought us together. Although we wanted children very badly, our focus was still always on each other and being a happy couple. We are truly blessed in so many ways and we keep reminding ourselves of that.

Update 1:

Our fourth round of In vitro was a success. It seems as if our 'small chance' was bigger than we thought. We are due in October 2014. There are no words to express how excited we are!

Update 2: October 2014 email from Kristy

Kaden is truly the one that was meant to be our child. I am loving every second of being a Mom, although he makes it easy to love him. When I heard his first cry in the delivery room it was worth every tear and heartache to get to that moment in our journey. We are so blessed to have him in our lives; he is just a wonderful little boy. He's not fussy, he just loves to be around us, our family and close friends. I just stare at him in amazement and feel so overwhelmed that our dream of being parents has come true. Thank you for your support thru our journey!

I feel confident that we are going to look back at this time in history and wonder why the male role in fertility was so under-emphasized when it is clearly such a large part of the baby-making equation. It's quite possible that one of the best ways to increase the chances of overcoming infertility, becoming pregnant, and having a healthy happy baby is to cultivate healthy men and healthy sperm.

Exercise:

List three simple ways you and/or your husband can help improve sperm quality right now:

1. _____
2. _____
3. _____

Write down any questions you still have about male reproductive health:

Now go and find answers to these questions!

References

Balercia, G., Buldreghini, E., Vignini, A., Tiano, L., Paggi, F., Amoroso, S., Littarru, G. (2009). Coenzyme Q10 treatment in infertile men with idiopathic asthenozoospermia: A placebo-controlled, double-blind randomized trial. *Fertility and Sterility*, 91(5), 1785-1792.

Bhongade, M., Prasad, S., Jiloha, R., Ray, P., Mohapatra, S., & Koner, B. (n.d.). Effect of psychological stress on fertility hormones and seminal quality in male partners of infertile couples. *Andrologia*, doi: 10.1111/and.12268.

Boxmeer, J., Smit, M., Weber, R., Lindemans, J., Romijn, J., Eijkemans, M., Steegers-Theunissen, R. (2007). Seminal Plasma Cobalamin Significantly Correlates With Sperm Concentration in Men Undergoing IVF or ICSI Procedures. *Journal of Andrology*, 521-527.

Cakmak, Y., Akpinar, I., Ekinci, G., & Bekiroglu, N. (2008). Point- and frequency-specific response of the testicular artery to abdominal electroacupuncture in humans. *Fertility and Sterility*, 90(5), 1732-1738.

Chang-jie, S. (2007). An Integrated Chinese-Western Medical Treatment of 100 Cases of Male Oligospermia Sterility. *Heilongjiang Chinese Medicine & Pharmacology*, (3), 36-37.

Cheng, C. (2007). Observations on the Therapeutic Effects of Treating 132 Cases of Male Immune Infertility with Ju He Wan (Citrus Seed Pills). *Xin Zhong Yi (New Chinese Medicine)*, (7), 39-40.

- Clarke, R. N. (1999). Relationship between Psychological Stress and Semen Quality among In-vitro Fertilization Patients. *Human Reproduction*, 14.3, 753-58.
- Dieterle, S. et al. (2009). A prospective randomized placebo-controlled study of the effect of acupuncture in infertile patients with severe oligoasthenoospermia. *Fertility and Sterility*, 92(4), 1340–1343.
- Estienne, M., Harper, A., & Crawford, R. (2008). Dietary supplementation with a source of omega-3 fatty acids increases sperm number and the duration of ejaculation in boars. *Theriogenology*, 70(1), 70-76.
- Gennaro, L., Balistreri, S., Lenzi, A., Lombardo, F., Ferrara, M., & Gandini, L. (2003). Psychosocial factors discriminate oligozoospermic from normozoospermic men. *Fertility and Sterility*, (Supp. 3), 1571-1576.
- Ghanbarzadeh, S. et al. (2013). Effects of L-Carnitine and Coenzyme Q10 on Impaired Spermatogenesis. *Drug Research*. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/24285403>
- Gollenberg, A., Liu, F., Brazil, C., Drobnis, E., Guzick, D., Overstreet, J., Swan, S. (2010). Semen quality in fertile men in relation to psychosocial stress. *Fertility and Sterility*, 93(4), 1104-1111.
- Gosálvez, J., González-Martínez, M., López-Fernández, C., Fernández, J., & Sánchez-Martín, P. (2011). Shorter abstinence decreases sperm deoxyribonucleic acid fragmentation in ejaculate. *Fertility and Sterility*, 96(5), 1083-1086.
- Ishikawa, H. et al. (1996). Effects of Gui Zhi Fu Ling Wan on male infertility with varicocele. *American Journal of Chinese Medicine*, 24(3-4), 327-331.
- Jeng, H. et al. (1997). A substance isolated from *Cornus officinalis* enhances the motility of human sperm. Department of Anatomy, Taipei Medical College, Taiwan. *American Journal of Chinese Medicine*, 25(3-4), 301-306.
- Jensen, T. K. (2012). Association of Sleep Disturbances With Reduced Semen Quality: A Cross-sectional Study Among 953 Healthy Young Danish Men. *Oxford Journals American Journal of Epidemiology*, 177(10), 1027-1037.
- Kimmins, S. et al. (2013). Low paternal dietary folate alters the mouse sperm epigenome and is associated with negative pregnancy outcomes. *Nature Communications*.
- Kinuta, K. (2000). Vitamin D Is an Important Factor in Estrogen Biosynthesis of Both Female and Male Gonads. *Endocrinology*, 1317-1324.
- Lai, A.N. et al. (1997). An experimental study on inhibitory effect of Chinese medicine tai-bao on antisperm antibody. *Chinese Journal of Integrated Traditional and Western Medicine*. *Zhongguo Zhong xi yi jie he xue hui, Zhongguo Zhong yi yan jiu yuan zhu ban*, 17(6), 360-362.
- Lu, T.K. et al. (2006). Clinical study on the treatment of male immune infertility. Hu zhang dan shen yin. *Zhonghua Nan Ke Xue. National Journal of Andrology*, 12(8):750-755.
- Mitchell, M., Bakos, H., & Lane, M. (2011). Paternal diet-induced obesity impairs embryo development and implantation in the mouse. *Fertility and Sterility*, 95(4), 1349-1353.
- Pei, J., Strehler, E., Noss, U., Abt, M., Piomboni, P., Baccetti, B., & Sterzik, K. (2005). Quantitative evaluation of spermatozoa ultrastructure after acupuncture treatment for idiopathic male infertility. *Fertility and Sterility*, 84(1), 141-147.
- Robinson, L., Gallos, I., Conner, S., Rajkhowa, M., Miller, D., Lewis, S., Coomarasamy, A. (2012). The effect of sperm DNA fragmentation on miscarriage rates: A systematic review and meta-analysis. *Human Reproduction*, 27(10), 2908-2917.
- Safarinejad, M. (2011). Effect of omega-3 polyunsaturated fatty acid supplementation on semen profile and enzymatic anti-oxidant capacity of seminal plasma in infertile men with idiopathic oligoasthenoospermia: A double-blind, placebo-controlled, randomised study. *Andrologia*, 43(1), 38-47.
- Safarinejad, R.M. et al. (2010). Relationship of omega-3 and omega-6 fatty acids with semen characteristics, and anti-oxidant status of seminal plasma: A comparison between fertile and infertile men. *Clinical Nutrition*, 29(1), 100-105.
- Shayeb, A.G. et al. (2011). An exploration of the association between male body mass index and semen quality. *Reproductive BioMedicine Online*, 23(6), 717–723.
- Shirley, R.L. et al. (1963). Effect of Dietary Protein on Fructose, Citric Acid and 5-Nucleotidase Activity in the Semen of Bulls. *Journal of Animal Science*, 22, 14-18.
- Siterman S. et al. (1997). Effect of acupuncture on sperm parameters of males suffering from subfertility related to low sperm quality. *Archives of Andrology*, 39(2), 155-1561.
- Siterman S. et al. (2009). Acupuncture Helps Lower Scrotum Temperature, Increase Sperm Count. *Asian Journal of Andrology*, 11(2), 200-208.

- Siterman, S., Eltes, F., Wolfson, V., Lederman, H., & Bartoov, B. (2000). Does acupuncture treatment affect sperm density in males with very low sperm count? A pilot study. *Andrologia* 32(1), 31-39.
- Sun Z. et al. (2006). TCM treatment of male immune infertility--a report of 100 cases. *Journal of Traditional Chinese Medicine*, 26(1), 36-38.
- Vellani, E., Colasante, A., Mamazza, L., Minasi, M., Greco, E., & Bevilacqua, A. (2013). Association of state and trait anxiety to semen quality of in vitro fertilization patients: A controlled study. *Fertility and Sterility*, 99(6), 1565-1572.e2.
- Vujkovic, M. et al. (2009). Associations between dietary patterns and semen quality in men undergoing IVF/ICSI treatment. *Human Reproduction*, Oxford Journals.
- Wang, S. J. et al. (2014). Acupuncture relieves the excessive excitation of hypothalamic-pituitary-adrenal cortex axis function and correlates with the regulatory mechanism of GR, CRH and ACTHR. *Evidence-Based Complementary and Alternative Medicine*. Retrieved from <http://www.pubfacts.com/detail/24761151/Acupuncture-Relieves-the-Excessive-Excitation-of-Hypothalamic-Pituitary-Adrenal-Cortex-Axis-Function>
- Wong, W., Merkus, H., Thomas, C., Menkveld, R., Zielhuis, G., & Steegers-Theunissen, R. (2002). Effects of folic acid and zinc sulfate on male factor subfertility: A double-blind, randomized, placebo-controlled trial. *Fertility and Sterility*, 77(3), 491-498.
- Yamanaka, M. et al. (1998). Direct effects of Chinese herbal medicine "hachuekkito" on sperm movement. A Department of Urology, Osaka University Medical School - Nippon Hinyokika Gakkai Zasshi, 89(7), 641-646.
- Yue, G.P. et al. (1996). Male infertility treated by bu shen sheng jing pill in clinical observation and evaluation on its curative effect. *Chinese Journal of Integrated Traditional and Western Medicine*. *Zhongguo Zhong xi yi jie he xue hui, Zhongguo Zhong yi yan jiu yuan zhu ban*, 16(8), 463-466.
- Zareba, P., Colaci, D., Afeiche, M., Gaskins, A., Jørgensen, N., Mendiola, J., Chavarro, J. (2013). Semen quality in relation to antioxidant intake in a healthy male population. *Fertility and Sterility*, 100(6), 1572-1579.
- Zhang M. et al. (2002). Influence of acupuncture on idiopathic male infertility in assisted reproductive technology. *Journal of Huazhong University Science Technology Med Sci*, 22(3), 228-230.