

# 4.

## Male Fertility - A Nutritional Approach



Falling sperm counts and the rise in male infertility has led to an increased interest in the nutritional and environmental factors that influence the development and quality of sperm (1). Infertility is a multi-factorial

condition and poor nutrition, exposure to pollutants and toxins, recreational drugs and medications, plus lifestyle factors and stress all play their part in affecting sperm count, motility and morphology (shape).

### How can nutrition help?

A good diet is essential for healthy sperm development, both for what you take out, as much as for what you put in. A great deal of interest is growing in the research of sperm

quality and viability, and it is now believed that men with a comparatively low sperm count can still be fertile if the sperm is in good condition.

### Damage to sperm

Sperm is particularly vulnerable to what is known as oxidative stress or free radical damage. Free radicals are unstable molecules that are linked with cellular destruction and high levels endanger sperm function and viability. Some causes are poor nutrition, pollutants such as smoking and poor detoxification processes by the body. Burnt, fried and barbequed foods are also sources of free radicals. Damage often results in abnormally formed sperm, and a poor

morphology result. Free radicals can also cause sperm to become hyperactive whilst still in the reproductive tract which affects their motility. Semen normally contains agents known as anti-oxidants to protect sperm against free radicals and if in some way this natural defence system is impaired, the effect on sperm can be extremely damaging. Therefore it is essential to both remove potential causes of free radical damage and to eat a diet high in anti-oxidants.

### Sources of free radicals

- Smoking
- Processed foods, particularly foods high in artificial additives
- Fast foods
- Alcohol
- Recreational drugs
- Foods that contain high amounts of poor quality fats and oils, particularly processed meats, margarines, biscuits and pastries, and take-aways.
- Fried, BBQd and burnt foods
- Exposure to environmental pollution such as traffic fumes. Keep car windows closed in traffic jams and wear a mask if you cycle

### Nutrition and Antioxidants

Eating a diet rich in antioxidants that protects against free radical damage is vital, but supplementation of the most important ones may also be recommended. If you have been told that there is an issue with your sperm you should consider having a comprehensive nutritional consultation with a fertility nutritionist. Consultations can be arranged by phone at the Zita West Clinic (20% discount rate for clients of the Affiliated Acupuncture Network group) Tel 020 72240077.

**The most potent anti-oxidants for improving male fertility are:**

***Vitamin E***

This is a fat-soluble vitamin and the main anti-oxidant in sperm membranes. It works with selenium in its anti-oxidative capacity. If you are taking prescribed medicines for blood pressure or blood thinning medications such as aspirin, heparin or warfarin please seek advice before taking vitamin E.

***Selenium***

This antioxidant mineral is vital for healthy sperm formation, particularly motility. It also protects against toxic metal contamination. Consumption of selenium in food is dependant on the amount in the soil where the food is grown, and it is believed that the soil is often highly depleted of this mineral, so supervised supplementation is especially recommended.

***Ascorbic Acid (Vitamin C)***

Vitamin C is a water-soluble vitamin and its most important role in male fertility is the prevention of agglutination, when sperm clump together. This often happens when anti-bodies bind to sperm and can be a result of present or past genito-urinary infection. Vitamin C is also a powerful anti-oxidant and present in high levels in seminal fluid. Over heating and smoking easily destroy it.

**Other Important Nutrients In Male Fertility:**

***Zinc***

Zinc is a trace mineral, and perhaps one of the most well known nutrients important in male fertility. Zinc deficiency decreases both testosterone and sperm counts. It is highly concentrated in the seminal fluid and seminal plasma zinc concentration is significantly correlated with sperm density, motility and viability. However zinc supplementation needs to be carefully monitored because too high doses can impair immune function.

***L-Arginine***

This is an amino acid that may affect both sperm count and motility. The heads of sperm contain large amounts and abnormal sperm counts often indicate a deficiency of arginine in the semen.

Note: People who suffer from the herpes virus should avoid foods rich in arginine as it stimulates the virus to replicate.

***L-Carnitine***

This amino acid plays a crucial role in the metabolic processes of energy production that fuel sperm motility and high levels are normally found in sperm cells. Vegetarians should be aware that there is virtually no carnitine in plant foods, and supplementation can be important

***Co-enzyme Q10***

Co-enzyme Q10 is a vital catalyst in the conversion of food to energy within cells. In sperm cells it is concentrated in the mid piece where it is an energy promoter and anti-oxidant. Research is showing that it may be effective in improving fertilisation rates following ICSI.

In addition, vitamins B12 and folic acid, the amino acid taurine and the anti-oxidant glutathione are all important for fertility

**Foods Containing Vital Nutrients For Male Fertility**

Selenium	Vitamin E	Vitamin C	Zinc	Arginine	Carnitine	Vitamin B12	Folic Acid
Brazil nuts	Nut & seed oils	Citrus fruits	Meat	Nuts especially	Beef	Meat	Green leafy vegetables
Wheat germ		Kiwi fruit	Fish	Walnuts	Pork	Fish esp. trout, salmon, sardines	Beans
Oats	Nuts & seeds	Strawberries	Chicken	Almonds	Lamb		Lentils
Garlic & onions	Wheat germ & wheat germ oil	Blackcurrants	Eggs	Brazil nuts	Dairy products	Eggs	Asparagus
Barley		Red pepper	Pumpkin / Sunflower seeds	Beans		Cheese esp. Edam	Oatmeal
Butter	Whole grains	Broccoli & cabbage	Whole grains	Lentils			Dried figs
Smoked herring	Eggs	Brussels sprouts	Beans & pulses				Avocado
Brown rice	Green leafy vegetables	Melon					
Whole grains		Mango	Ginger root				
Red Swiss chard		Watercress	Rye				
		Spinach	Oats				
		Papaya					
		Parsley					

## Dietary Factors Influencing Male Fertility

### **Alcohol**

Even moderate alcohol consumption can affect male semen quality, and higher consumption may lead to serious problems with sperm morphology, leading to an increase in malformed sperm. Alcohol also affects motility. Daily drinkers may have an increased susceptibility to poor sperm morphology. Alcohol can also deliver a double blow to sperm, as it is also a major source of free radical damage and depletes the body of valuable vitamins and minerals.

### **Caffeine**

Caffeine may be associated with chromosome damage and the effect on sperm appears to be dose related, so keeping to a moderate total caffeine intake is important. Caffeine is contained in tea, green tea, chocolate, colas and some medications,

as well as coffee.

### **Weight**

Excess weight can effect male reproduction because a process carried out in fat cells called aromatization can cause the conversion of testosterone to oestrogen, which can affect sperm count. Moreover, obesity can lead to the development of an apron of fat around the genital area which can lead to over heating of the testicles potentially reducing sperm numbers. At the clinic we can discuss ways of helping you lose weight. A sedentary lifestyle may also be a factor in poor semen parameters so walking as much as possible, using stairs instead of lifts and incorporating some form of regular exercise may be beneficial.

### **Dietary and environmental oestrogens**

The dozens of synthetic chemicals found in everyday life, from shampoos, cosmetics and household cleaning products to pesticides, plastics, food wrappings, tin can linings and heavy metals like lead and arsenic are known as hormone disruptors because their molecular shape is very similar to that of oestrogen. The delicate balance between the hormones oestrogen and testosterone in men is disrupted and may well be a cause of much male infertility. To limit your exposure to hormone disruptors:

- ✓ Drink filtered water
- ✓ Reduce dairy produce as a large

proportion of dietary oestrogens are consumed from dairy foods

- ✓ Buy organic food as much as possible. Pesticide exposure may be linked to the rise in infertility
- ✓ Reduce saturated fats in animal products as hormone-disrupting chemicals are fat-soluble and accumulate in animal fats
- ✓ For a very readable and informative guide on hormone disruptors produced by the World Wildlife Fund go to <http://www.wwf-uk.org/filelibrary/pdf/risk.pdf>