



MALE FERTILITY

Male fertility is dependent upon the quality and quantity of semen delivered to the female reproductive tract.

Semen is essentially made of two components:

1. Spermatozoa, or sperm cells, made in the testes and containing the genetic package (chromosomes) which will fertilise the female egg.
2. Seminal plasma, the fluid component of the semen, which is made in various sites along the male reproductive tract including the prostate and seminal vesicles. The seminal plasma is essential for the successful transportation and health of the spermatozoa.

During ejaculation these two components, the spermatozoa and seminal plasma, are brought together. Disease processes and lifestyle issues can affect both components, leading to decreased fertility. The maturation process for spermatozoa takes at least three months, and therefore it is to be expected that lifestyle changes to enhance male fertility will require at least three months to start seeing a positive effect and should be continued until a healthy conception is achieved.

It should be noted that standard semen analysis is not an absolute guide to fertility, and ultimately the only real test of fertility is the creation of a healthy baby.

LIFESTYLE CHANGES TO PROMOTE FERTILITY

Lifestyle issues and ingestion of toxins including alcohol and smoking have been shown to have a significant role in male infertility. Some improvement in the quality of sperm can be obtained by the following lifestyle changes.

FREQUENCY OF EJACULATION

Frequent ejaculation has been shown to reduce DNA fragmentation (damage) in some males and thus can be used (as an adjunct in attempting) to improve sperm quality. Patients are recommended to ejaculate three times per week or alternate daily basis for a few days prior to attempting conception by natural intercourse or assisted reproduction (ovulation induction and intrauterine insemination or IVF/ICSI).

AVOIDANCE OF ALCOHOL

Even moderate alcohol consumption has a major effect on fertility. Its mechanism of action is not fully understood but involves effects on mental function and libido, metabolism of male and female hormones by the liver and a direct action on the DNA of the sperm. Alcohol consumption can reduce the outcome of IVF live birth rates by 2 to 8 times. There is no known safe limit and so ideally alcohol should be avoided.

AVOIDANCE OF SMOKING

Toxins in cigarette smoke affect the quality of sperm DNA, sperm's ability to fertilise eggs and sperm motility. Patients should be aware that although semen analysis usually does not detect the effect of smoking on sperm quality, research has shown that smoking adversely affects male fertility and therefore patients are advised to give up smoking if possible. Alcohol and smoking are both toxic to sperm and together compound the negative effects. Recent evidence suggests a 50 fold increase in childhood cancers in households where the father smokes.

AVOIDANCE OF OTHER TOXINS

Avoid or minimize exposure to toxins such as heavy metals, pesticides, and pollutants including PCBs, dioxins, DDT and exhaust gases from petrol engines.

MAINTENANCE OF A HEALTHY BODY WEIGHT

Being overweight can affect male fertility because within fat tissue male hormones are converted to female hormones. An imbalance of hormones may result, affecting sperm production and therefore fertility.

UNDERTAKING REGULAR EXERCISE

Regular exercise is beneficial for your general health and is also an effective means of dealing with stress. However, excessive exercise should be avoided as it can affect the hormonal control of sperm production.



AVOIDANCE OF EXCESSIVE HEAT

Exposure to water temperatures of 40°C (102°F) or higher may lower male sperm counts, and therefore hot baths, spas, saunas and steam rooms should be avoided. A fever may have a temporary effect on sperm quality and decrease fertility. Tight synthetic underwear and cycling shorts may also have an effect on fertility. Cotton loose fitting underwear is recommended so that the testes are not firmly held against the body, therefore avoiding overheating of the testes.

CONSULTATION WITH YOUR DOCTOR IF TAKING MEDICATIONS WHICH MAY AFFECT FERTILITY

The effects of most drugs on male fertility are not known, however if you are required to take medication for prolonged periods it is advisable to discuss this with your doctor. Some medications which may affect male fertility are:

- Anticancer or chemotherapy medications, and radiation treatment
- Anabolic steroids and corticosteroids
- Antimalarial drugs
- Antihypertensive medications (including beta-blockers, thiazide diuretics)
- Cimetidine, an anti-ulcer drug
- Ketoconazole when taken orally (an anti-fungal agent)
- Spironolactone
- Sulfasalazine
- Tricyclic antidepressant drugs and some sedatives
- Testosterone supplements

AVOIDANCE OF RECREATIONAL DRUGS

Opiates and marijuana can effect sperm production and can also decrease sex drive.

NUTRITIONAL SUPPLEMENTS

There is limited evidence of the effects of vitamin and mineral supplements on sperm function and some of the following recommendations still require scientific proof. Any doubt regarding the use of these products should be discussed with your doctor.

ANTIOXIDANTS CAN COMBAT SPERM DAMAGE CAUSED BY FREE RADICALS

- Folic Acid 5mg daily
- The following compounds can be taken individually or together. Folic Acid, Vitamin C and Vitamin E.
- Menovit is a specific formulation to deal with free radicals and male infertility, however studies have not clearly shown that it is effective.

MINERALS/MICRONUTRIENTS

- Zinc
- Selenium – note excess can be toxic – 350µg daily is safe according to EPA

HIGH FIBRE DIET

Avoid low fibre diets as they promote the absorption of environmental oestrogens which can affect the male hormonal balance.

MINIMISATION OF STRESS

Stress can lead to lifestyle excesses, poor nutrition and may affect sexual function. Regular exercise, effective time management and if necessary counselling can help to reduce stress.