

Sims Fertility Clinic		Form No.	PT-INFO-007
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Improving Sperm Quality



Improving sperm quality.

There are various steps any man can take in an attempt to improve the quality of his sperm. These include lifestyle changes and nutritional supplementation. Below follows a brief summary of recommendations that the male partner of a couple trying to conceive may wish to follow.

Supplements that may potentially improve sperm count/quality.

The following supplements have been shown, in various clinical trials, to improve sperm count and/or quality. It is important to emphasize however, that not all patients will show an improvement in response to nutritional supplementation. All supplements should be taken long term as the sperm production cycle is approximately 90 days long.

Zinc - 30milligrams twice daily

Zinc deficiency has been linked with a reduced sperm count (Ref 1). Zinc plays an important role in normal testicular development, spermatogenesis (the production of sperm) and in sperm motility. Supplementation with dietary zinc has been shown to improve sperm counts in both fertile and subfertile men (Ref 1&2). Zinc, in combination with other nutritional supplements (folic acid) has also been shown to improve sperm motility (Ref 2). Zinc is found naturally in meat, wholegrain cereals, seafood, eggs and pulses.

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Selenium – 200micrograms daily

Selenium plays a role in the regulation of the testes and accessory sex glands. Selenium may also have a protective role to the sperm as an antioxidant. Selenium has been shown to improve sperm motility both on its own (Ref 4) and in conjunction with vitamin E (Ref 5), another antioxidant. Selenium is found naturally in meat, seafood, mushrooms, cereals and in particularly high levels in Brazil nuts.

Vitamin E – 400milligrams twice daily

Vitamin E is an antioxidant which may protect sperm from damage. It has been shown that when taken in conjunction with selenium, the sperm of subfertile men can show improved motility (Ref 5). Vitamin E is found naturally in vegetable oils, nuts and green leafy vegetables.

Folic acid – 5milligrams daily

Folate, of which folic acid is the synthetic form, is essential for DNA, RNA and protein synthesis. Because DNA synthesis is a large part of spermatogenesis, it is likely to be important in this process. It has been shown (Ref 2) that folic acid in conjunction with zinc can improve sperm count and motility in both fertile and subfertile men. Folate is found naturally in green leafy vegetables, liver, yeast and fruits.

Lifestyle.

Lifestyle can have a major impact on fertility. Various studies have shown that factors such as smoking, heavy drinking and exposure to toxins in the workplace can have serious detrimental effects on sperm and the ability to achieve a pregnancy.

Smoking

Tobacco smoking is long established as a general health hazard and has been shown to affect reproductive health in both men and women (Ref 6). A recent study has shown that smoking as little as 1 cigarette per day directly reduces the number and quality of sperm (Ref 7). Another recent study (Ref 8) has demonstrated that smoking in males decreases the success rates of both IVF and ICSI. This study showed that non-smoking couples were almost twice as likely to achieve a pregnancy as those where the male partner smoked >5 cigarettes/day.

Alcohol

First the good news; moderate alcohol consumption (<20 units/week) has been found to have no effect on sperm quality or reduce pregnancy rates (Ref 9&10). However, heavy drinking (>20 units/week) has been shown to double the time taken to achieve pregnancy (Ref 9). There is also some evidence to suggest that in the month prior to fertility treatment, increased alcohol consumption in men can subsequently lead to higher miscarriage rates (Ref 10).

Occupational exposure to toxins

Various occupations can involve exposure to toxins, in particular organic solvents. These solvents are present in substances such as paint, lacquers, adhesives, degreasers, printing inks and laboratory

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solvents. It has been shown (Ref 11) that males exposed to these solvents on a regular basis are likely to have reduced sperm count and quality. When handling compounds containing these solvents appropriate safety precautions should be followed.

Temperature

Spermatogenesis takes place at a temperature slightly lower than body temperature. It has been shown that exposure to heat affects sperm quality (Ref 12). Therefore, regular hot baths and regular saunas/steam rooms would be best avoided. Loose fitting underwear has also been suggested to avoid problems with overheating of the testes.

Stress

High levels of stress have also been shown to reduce the quality of sperm (Ref 13).

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