

## Improving the Male Factor in Infertility

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Infertility is defined as the inability to conceive after 12 months of regular unprotected intercourse. It affects about 15% of American couples. Male factor infertility accounts for approximately 40% of all cases of infertility. Although there are more possible different causes of female infertility, such as occlusion of the tubes, endometriosis, and anovulation, the male factor is the single most common cause of infertility in an affected couple. This is why a semen analysis is such an important part of our initial work-up. Your semen sample should be collected in our office. The following table describes a normal semen sample:

Sperm Characteristic	Normal Values
Volume	2-5 milliliter (ml) of semen is collected
Count (Concentration)	20 million sperm per ml of semen
Motility	40% of sperm are moving
Forward Motility Score	>2.5 on a scale of 0 to 4
Shape	> 5% have an ideal shape
Behavior	Semen liquefies in <1 hour, milky/gray, low viscosity, sperm cells do not stick together.

### What causes male infertility?

Genetic disorders, hormonal imbalances, anatomic abnormalities, infection, exposure to radiation, and exposure to dangerous chemicals, fertilizers, or pesticides are all known to damage either the ability to produce sperm, or the ability of sperm to fertilize an egg. The table below contains some commonly used medications that can decrease fertility. Cigarettes, marijuana, cocaine, and opiates, are known to damage the genetic material in sperm, decrease total sperm count, and contribute to erectile dysfunction. Sperm production ideally occurs in an environment cooler than body temperature, which is why the testicles are located outside the body. When the testicles are kept too warm, this may reduce sperm production. In as many as 50% of cases of male infertility, however, the cause is unknown.

Spermatogenesis, the process of sperm production, takes 80-90 days. For this reason, many causes of damage to sperm can be corrected, and semen should be re-evaluated three months after starting any treatment or lifestyle change.

### Medications that may affect male fertility

Decrease Sperm Count	<b>Alcohol, Tobacco, Marijuana, Cocaine</b> <b>Testosterone Supplements</b> Certain Chemotherapy drugs Long term use of these antibiotics: Nitrofurantoin, Erythromycin, Gentamycin
Cause Hormone Imbalance	<b>Marijuana</b> <b>Testosterone supplements</b> <b>Anabolic Steroids</b> Opiates (ex: morphine, Percocet, Vicodin, heroin) Spironolactone Drugs for Schizophrenia, Tricyclic antidepressants (amitriptyline) Nitrofurantion, Cimetidine (Tagamet)
Decrease Sex Drive	<b>Excessive Alcohol</b> <b>SSRI antidepressants</b> (Prozac, Zoloft, Cymbalta) Opiates Spironolactone Beta Blockers (propranolol, metoprolol, etc) Lithium
Cause Erectile Dysfunction (ED)	<b>Excessive Alcohol,</b> <b>Tobacco, Cocaine</b> Spironolactone and other diuretics Beta blockers (propranolol, metoprolol, etc.) Alpha blockers (Flomax, doxazocin, prazosin, etc.) Drugs for Schizophrenia, Tricyclic antidepressants (Amitriptyline), Lithium
Decrease Ability of Sperm to Fertilize Egg	Calcium channel blockers (Norvasc, Cardizem) Tetracycline antibiotics (doxycycline, minocycline) Drugs for gout (Colchicine, Allopurinol)

## What you can do to improve your fertility

1. First and foremost, **STOP SMOKING!** Tobacco use damages the DNA in sperm, creates abnormal sperm, and decreases sex drive and sperm concentration. Quitting will also reduce your risk of several types of cancer, heart attacks, respiratory infections and emphysema.
2. Stop using all illegal drugs, such as cocaine, opiates, and marijuana: Marijuana is especially known to cause an abnormal sperm shape, to significantly reduce sperm count and motility, and to decrease the size of the testicles.
3. Do not use anabolic steroids or any other male hormonal supplements such as Testosterone or “T”. They are powerful suppressors of sperm production. They are also known to reduce testicular size.
4. Cut back alcohol intake to 7 -10 drinks per week. A “drink” is a 12 oz beer, a 4 oz glass of wine, or 1oz of liquor.
5. It may help to avoid hot tubs and saunas while you and your partner are trying to become pregnant. Similarly, be aware of the lengthy use of laptops directly on your lap.
6. If you are on any of the drugs listed in the table above that cause infertility, talk with the doctor who prescribed them about substituting it for another drug, if possible. Keep in mind that the risk of stopping some of these medications may outweigh the benefit of increasing your fertility.
7. Try some of the vitamin supplements listed in the table below: “Fertile One,” made by Coast Reproductive, “Fertility Blend for Men,” sold at GNC, and “ProXeed,” are products that contain many of these supplements in just one pill. Several studies on these supplements have come to different conclusions about their effectiveness. They have a low risk of harmful side effects. Many of these supplements, especially antioxidants, have been shown to increase sperm motility, improve DNA and membrane quality, and improve sperm’s ability to fertilize an egg **to some degree**. However, it may not be worth it to you to spend money on supplements that **may or may not make a noticeable difference**.

### Supplements that may improve sperm characteristics:

Supplement	Daily Dose	Possible Benefit
Vitamin A	2500 IU	Taking the right amount protects against DNA damage. Do not take more than 5000IU per day. Taking too much can cause a variety of problems, such as liver damage, impotence and ejaculation failure.
Vitamin C	1000 mg	Decreases clumping of sperm. Protects against DNA damage.
Vitamin E	200 mg	May improve fertilization rates in IVF. Improves sperm motility and viability. One study showed an increased risk of heart attack in older men who take more than 500mg/d
Coenzyme Q10	400 mg	Improves motility. Protects against DNA and cell membrane damage.
Glutathione	500 mg	Protects against DNA and cell membrane damage. Improves sperm motility and shape.
L-Carnitine	500 mg	Improves sperm count, motility, and ability to fertilize egg.
L-Methionine	25 mg	Improves sperm count and motility.
Lycopene	4 mg	Improves sperm count and motility.
Selenium	225 mcg	Improves sperm motility and viability.
Zinc	15 mg	May improve sperm count and shape.

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