

## Infertility: the men get it!

When couples fail to conceive, it seems like the woman is always the first to be probed for signs of infertility, even though the problem could just as easily lie with her partner. Half of a baby's genetic makeup comes from the father and yet, sperms are often taken for granted.

### Sperm

A man's biggest contribution to conception is sperm: he must be able to produce healthy sperms in order to impregnate his partner. This process extends all the way back to his childhood, when his reproductive organs mature through puberty. Not only must one of his testes be functioning, his body has to produce the right mix of hormones to signal his testes to make these sperms. The sperms then have to move into the semen via delicate tubes before they are ejaculated out of the penis. Let's take a closer look at aspects of sperm that affect a man's fertility:

# 1

#### Sperm count

According to a 2010 criterion by the World Health Organization, a normal male's semen should contain at least 15 million sperms per millilitre; he is judged to be subfertile if his sperm count is lower. A normal volume of semen produced at ejaculation is at least 1.5ml.

# 2

#### Sperm motility

After semen is ejaculated, sperms have to make their way through the cervix to meet the egg in the fallopian tube. If the sperms have poor motility, they will not survive the journey. More than 50% of the sperm must be motile to be considered normal.

# 3

#### Sperm morphology

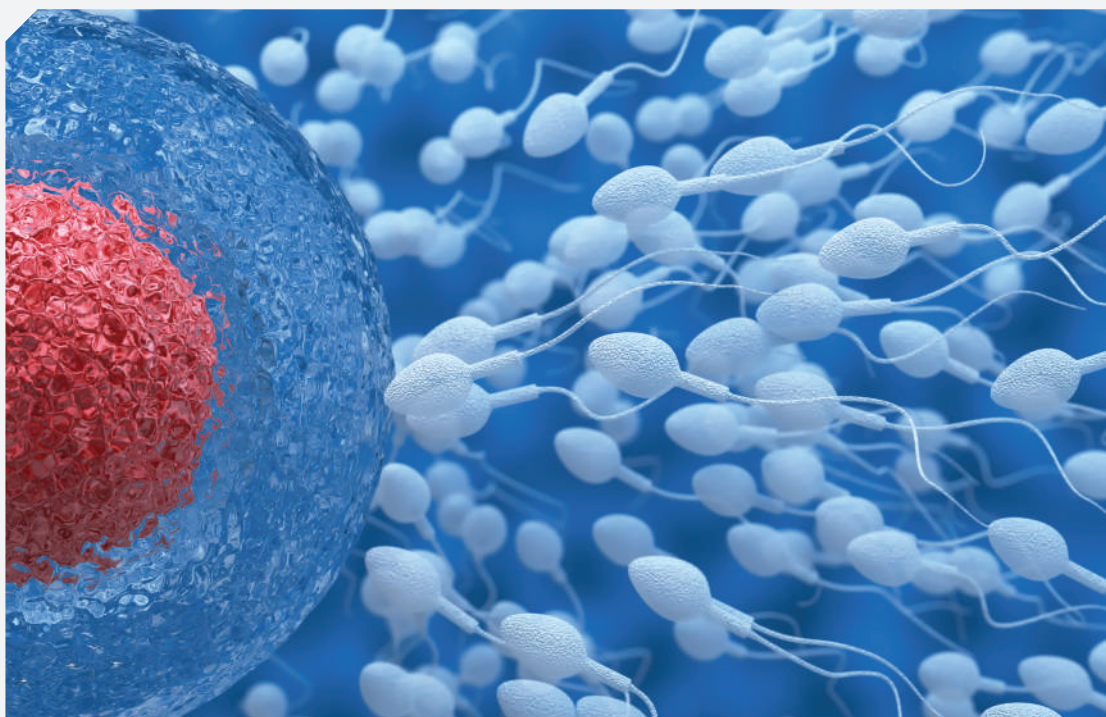
Even the form of the sperm matters. If it is oddly shaped, it will not be able to penetrate the outer layer of an egg. At least 4% of the sperm have to be of the correct shape and size to be considered normal.



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4

#### Non-production of sperm

This usually occurs because of testicular failure or birth defects. Azoospermia occurs in about 5% of infertile men. The condition could happen because of an obstruction, such as an absent vas deferens (the tubes that carry the sperm), or there is a problem with sperm production. As there could be usable sperm in the testes, an ultrasound scan of the scrotum and testes may help in the diagnosis, and a testicular aspirate would be the diagnostic test to determine the presence of usable sperm within the testes.

5

#### Sperm DNA integrity

DNA fragmentation (DFI) in sperms has been used as a predictor of male fertility. When there is a high degree of fragmentation, successful pregnancy is less likely. When DFI is under 15%, pregnancy should be easily achieved if the woman is fertile. However, when it is above 30%, the success rate drops significantly.

Hyaluronic Binding Assay (HBA) is a measure of how effective the sperms are at attaching to the egg, which is the first step towards fertilisation. A HBA score of more than 85% is considered normal, whereas lower scores imply the sperms have difficulty in attaching to the egg.

Besides defects in his sperm, a man can become infertile through other medical routes, such as illness. Environment and lifestyle factors also play a part.

#### Medical conditions

Medications for ulcer, fungus, cancer and various other problems may lead to reduced sperm production. Male infertility can arise from a problem with the testes; even a hormonal imbalance that affects the hypothalamus, pituitary, thyroid or adrenal glands can lead to infertility.

Some infections can interfere with sperm production or sperm health, or cause scarring that blocks sperm movement. Besides inflammation of various parts of the testes, other such culprits include sexually transmitted infections like gonorrhoea or HIV.

Even a simple respiratory tract infection or viral flu will reduce the quality of the semen.

#### Environmental factors

Sperm production is sensitive to heat, so it's not a good idea for a man intending to have a child to hang around places with elevated temperatures. Hence, it is best to avoid hot tubs and saunas. Constrictive clothing and even working with a computer on your lap can have adverse effects on your sperm quality. Cycling or running for long periods can also lead to overheating and reduced sperm quality.

To maintain fertility, men should keep exposure to radiation (X-ray), heavy metals and industrial chemicals (pesticides, herbicides, organic solvents) to a minimum.

#### Lifestyle choices

Stick to a healthy diet and maintain a weight that's proportional to your height, as being overweight causes hormonal changes that could interfere with fertility.

Do not abuse alcohol and illegal drugs. Excessive alcohol reduces testosterone levels and decreases sperm production; it also leads to liver damage, which affects fertility. As for drugs, steroids may help to build muscles, but they can lead to the shrinking of both the testes and sperm count. Stay away from cigarettes and second-hand smoke — both adversely affect sperm quality and count. And try not to let the act of conception stress you out — long-term stress produces hormones that interfere with sperm production. 