

Newsletter

Part 1

Year 1, Issue 4, August 2018

Male Infertility

Male infertility is on rise in India.

As per recent report published by world health organisation (WHO) the incidence of male infertility has significantly increased as compared to last two decades. As per the study published in 'fertility and sterility - by ASRM (American society for reproductive medicine), infertility affects an estimated 15% of couples globally among all population. As per worldwide statistics 1 out of 6 men is infertile. Males are found to be solely responsible for 20-30% of infertility cases and contribute to 50% of cases overall. Male infertility is highest in Africa and Eastern Europe. Around 27.5 million couples in India are infertile.

According to a study conducted at AIIMS, it was found that 30.31% times decline in sperm count was the cause for male infertility whereas, sperm motility and morphology were contributing causes 22.92% and 51.25% times respectively. As first described in 1969 by Sasano and Ichijo, aging is an important factor responsible for the decline in semen quality which can further cause male infertility. Lifestyle changes and stress are indirectly affect male infertility.

-Dr. Pravin Gund

Risk Factors

A risk factor is something that makes a person more likely to develop a condition. Some risk factors such as age cannot be changed. Other risk factors, such as lifestyle choices can be changed.

Risk factors linked to male infertility include:

- **Addictions**
Use of tobacco, alcohol and illicit drugs lessens the fertility. Heavy caffeinated drinks, and tea use can also interfere with fertility.
- **Body weight**
The chances of infertility increase in males who are overweight or underweight.
- **Exercise**
Lack of regular exercise contributes to obesity and disturbed body metabolism, which increases the risk of infertility. Frequent, strenuous and intense exercise can affect sperm production.
- **History of sexually transmitted infections**
Some sexually transmitted infections can affect fertility.
- **Being exposed to hazards and toxins**
These include radiation, radioactivity, welding, and many chemicals such as lead, ethylene dibromine, and vinyl chloride.
- **Exposure of genitals to elevated temperature**
Frequent use of Hot tubs, steam rooms, prolonged use of

laptops on lap, sitting for long periods, wearing tight clothings increase temperature in the scrotum that reduce sperm production and sperm motility. Cell phone radiation affects sperm quality.

- **Injury**

Injuries to the spinal /groin region or testicles can affect sperm production.

- **Surgery**

History of vasectomy or major abdominal or pelvic surgery.

- **Anatomical**

History of undescended testicles.

- **Genetic factor**

Being born with a fertility disorder or having a blood relative with a fertility disorder.

- **Certain medical conditions**

Cystic fibrosis, tumours, systemic disease, sickle cell anaemia and testicular cancer interferes with male fertility. Other causes include: cryptorchidism, ductal obstruction, hemochromatosis, hormone dysfunction, prostatitis, retrograde ejaculation, varicocele, mumps after puberty.

- **Medications**

Medications that can affect male fertility include drugs for arthritis, digestive diseases, ulcers, psoriasis, depression, hypertension and chemotherapy.

- **Lifestyle related factors**

The lifestyle related factors include wrong food habits, alcohol use, tobacco use, irregular sleeping patterns, excessive exercise, erratic work schedule, constant mental stress, etc. All these factors can disturb body metabolism at various levels causing changes at the hormonal level. These factors are thus observed to be debilitating for male infertility.

-Dr. Deepali Pawar

Causes of Male Infertility

Fertility in male depends on the following factors:

1. Good quality of sperms.
2. Sperm to be properly carried in semen.
3. Ample sperm count in Semen.
4. Motility of Sperms.

The alteration in one or more of the above factors may result in infertility in males. The most significant of these are low sperm concentration (oligospermia), poor sperm motility (asthenospermia) and abnormal sperm morphology (teratospermia). Other factors less well associated with infertility include semen volume and other seminal markers. As high as 90% of male infertility problems are related to the count.

The factors that hamper male fertility can be discussed under following heads as:

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1. Medical causes.
2. Occupational / environmental causes.
3. Improper lifestyle.

1. Medical causes

• Varicocele

Varicocele is a swelling of the veins that drain the testicle. It interferes testicular temperature regulation hampering quality of the sperms.

• Infections

Some infections, especially sexually transmitted diseases impede sperm production as well as quality of sperms. It can also block the passage of sperms resulting in Infertility.

• Ejaculation issues

The issues regarding ejaculation such as premature ejaculation, retrograde ejaculation, failure to ejaculate may result in infertility. Many conditions can cause erectile dysfunction such as diabetes, spinal injuries and surgery of the bladder, prostate or urethra.

• Undescended testicles

In some males during foetal development one or both testicles fail to descend from abdomen into the scrotum. Decreased fertility is more likely observed in such cases.

• Antibodies that attack sperm

Anti-sperm antibodies are immune system cells that mistakenly identify sperms as harmful & try to eliminate them.

• Tumours

Cancers and non-malignant growth can affect the male reproductive organs directly, or through the glands that release hormones related to reproduction, such as the pituitary gland.

• Hormonal imbalance

Hormonal imbalance due to disorders of the testicles or an abnormality affecting other hormonal systems, including hypothalamus, pituitary, thyroid and adrenal glands results in infertility.

• Defects of tubules that transport sperm

Blockage due to accidental injury from surgery, prior infections, trauma or abnormal development in the tubules that carry semen can affect fertility.

• Chromosome defects

Chromosomal defects cause abnormal development of the male reproductive organs resulting in infertility.

• Problems with sexual intercourse

Erectile dysfunction, painful intercourse, some anatomical

abnormalities, psychological or relationship problems intervene the normal sexual intercourse.

• Celiac disease

Celiac disease is a digestive disorder caused by sensitivity to gluten and can cause male infertility.

• Certain medications

Medications such as hormone replacement therapy, long-term steroids, cancer medications (chemotherapy), certain antifungal medications can impair sperm production and decrease male fertility.

• Surgeries

Surgeries such as vasectomy, inguinal hernia repairs, scrotal or testicular surgeries, prostate surgeries, abdominal surgeries performed for testicular and rectal cancers can hamper fertility in males.

2. Occupational / Environmental causes

Overexposure to certain environmental elements such as heat, toxins and chemicals can reduce sperm production or sperm function.

• Industrial chemicals

Extended exposure to chemicals like benzenes, toluene, pesticides, herbicides may contribute to lower sperm counts.

• Heavy metal exposure

Overexposure to heavy metals like lead may cause infertility.

• Radiation

Exposure to radiation can reduce sperm production which often eventually returns to normal after sometime. With high doses of radiation, sperm production can be permanently reduced.

3. Improper lifestyle

• Habits

Sedentary lifestyle, tight clothing, working on laptop or computer for long time also may increase the scrotal temperature leading to reduced sperm count.

• Wrong Food Habits

Wrong food habits can lead to disturbed body metabolism which further results in serious consequences as imbalance at hormonal level, obesity etc. These consequences impair fertility in either ways by hampering sperm quality as well as quantity.

• Addictions

Addiction of alcohol, tobacco smoking or chewing, use of illicit drugs like cocaine hampers the fertility in males.

• Stress

Severe or prolonged emotional stress can affect sperm count and quality.

-Dr. Shachi Desai

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Contact : care@dyumnawomensclinic.com www.dyumnawomensclinic.com Ph. No : 020-25465886

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