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MALE INFERTILITY

Male infertility refers to a male's inability to cause pregnancy in a fertile female. In humans it accounts for 40–50% of infertility. It affects approximately 7% of all men. Male infertility is commonly due to deficiencies in the semen, and semen quality is used as a surrogate measure of male fecundity.

Up to 15% of couples are infertile. This means they aren't able to conceive a child, even though they've had frequent, unprotected sexual intercourse for a year or longer. In over a third of these couples, male infertility plays a role.

Male infertility is due to low sperm production, abnormal sperm function or blockages that prevent the delivery of sperm. Illnesses, chronic health problems, lifestyle choices and other factors can play a role in causing male infertility.

Not being able to conceive a child can be stressful and frustrating, but a number of male infertility treatments are available.

SYMPTOMS

The main sign of male infertility is the inability to conceive a child. There may be no other obvious signs or symptoms. In some cases, however, an underlying problem such as an inherited disorder, a hormonal imbalance, dilated veins around the testicle or a condition that blocks the passage of sperm causes signs and symptoms.

Although most men with male infertility do not notice symptoms other than the inability to conceive a child, signs and symptoms associated with male infertility include:

- Problems with sexual function – for example, difficulty with ejaculation or small volumes of fluid ejaculated, reduced sexual desire or difficulty maintaining an erection (erectile dysfunction)
- Pain, swelling, or a lump in the testicle area
- Recurrent respiratory infections
- Inability to smell

- Abnormal breast growth (gynecomastia)
- Decreased facial or body hair or other signs of a chromosomal or hormonal abnormality
- A lower than normal sperm count (fewer than 15million sperm per milliliter of semen or a total sperm count of less than 39 million per ejaculate)

MEDICAL CAUSES

Problems with male fertility can be caused by a number of health issues and medical treatments. Some of these includes:

- Varicocele
- Ejaculation issues
- Antibodies that attack sperm
- Tumors
- Undescended testicles
- Hormone imbalances
- Defects of tubules that transport sperm
- Chromosome defects
- Problems with sexual intercourse
- Celiac disease
- Certain medications
- Prior surgeries

ENVIRONMENTAL CAUSES

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

- Industrial chemicals
- Heavy metal exposure
- Radiation or X-rays
- Overheating the testicles

HEALTH, LIFESTYLE AND OTHER CAUSES

Some other causes of male infertility include:

- Drug use

- Alcohol use
- Tobacco smoking
- Emotional stress
- Depression
- Weight

Certain occupation including welding or those involving prolonged sitting, such as truck driving, may be associated with a risk of infertility.

RISK FACTORS

Risk factors linked to male infertility include:

- Smoking tobacco
- Using alcohol
- Using certain illicit drugs
- Being overweight
- Being severely depressed or stressed
- Having certain past or present infections
- Being exposed to toxins
- Overheating the testicles
- Having experienced trauma to the testicles
- Having a prior vasectomy or major abdominal or pelvic surgery
- Being born with a fertility disorder or having a blood relative with a fertility disorder
- Having certain medical conditions, including tumors and chronic illnesses, such as sickle cell disease
- Taking certain medications or undergoing medical treatments, such as surgery or radiation used for treating cancer

COMPLICATIONS

Infertility can be stressful for both you and your partner. Complications of male infertility can include:

- Surgery or other procedures to treat an underlying cause of low sperm count or other reproductive problems.
- Expensive and involved reproductive techniques

- Stress and relationship difficulties related to the inability to have a child

PREVENTION

Many types of male infertility aren't preventable. However, you can avoid some known causes of male infertility. For example:

- Don't smoke
- Limit or abstain from alcohol
- Steer clear of illicit drugs
- Keep the weight off
- Don't get a vasectomy
- Avoid things that lead to prolonged heat for the testicles
- Reduce stress
- Avoid exposure to pesticides, heavy metals and other toxins.

TESTOSTERONE

Testosterone is the hormone responsible for development of male sexual characteristics. Hormones are chemical messengers that trigger necessary changes in the body. Females also produce testosterone, usually in smaller amounts.

It is a type of androgen produced primarily by the testicles in cells called the Leydig cells.

In men, testosterone is thought to regulate a number of functions alongside sperm production. These include:

- Sex drive
- Bone mass
- Fat distribution
- Muscle size and strength
- Red blood cell production

Without adequate amounts of testosterone, men become infertile. This is because testosterone assists the development of mature sperm.

Despite being a male sex hormone, testosterone also contributes to sex drive, bone density, and muscle strength in women. However, an excess of testosterone can also cause women to experience male pattern baldness and infertility.

The brain and pituitary gland control testosterone levels. Once produced, the hormone moves through the blood to carry out its various important functions.

High or low levels of testosterone can lead to dysfunction in the parts of the body normally regulated by the hormone.

When a man has low testosterone or hypogonadism, he may experience:

- Reduced sex
- Erectile dysfunction
- Low sperm count
- Enlarged or swollen breast tissue

Over time, these symptoms may develop in the following in the following ways:

- Loss of body hair
- Loss of muscle bulk
- Loss of strength
- Increased body fat

Chronic, or ongoing, low testosterone may lead to osteoporosis, mood swings, reduced energy, and testicular shrinkage

CAUSES

Causes can include:

- Testicular injury, such as castration
- Infection of the testicles
- Medications such as opiate analgesics
- Disorders that affect the hormones, such as pituitary tumors or high prolactin levels
- Chronic diseases, including type 2 diabetes, kidney and liver disease, obesity, and HIV/AIDS.
- Genetic disorders, such as Klinefelter syndrome, Prader-Willi syndrome, hemochromatosis, Kallman syndrome, and myotonic dystrophy.

Too much testosterone, on the other hand, can lead to the triggering of puberty before the age of 9 years. This condition would affect younger and is much rarer.

In women, however, high testosterone levels can lead to male pattern baldness, a deep voice and menstrual irregularities, as well as:

- Growth and swelling of the clitoris
- Changes in body shape

- Reduction in breast size
- Oily skin
- Acne
- Facial hair growth around the body, lips and chin.

TESTOSTERONE LEVELS AND AGING

Testosterone levels naturally decrease as a man ages.

The effect of gradually lowering testosterone levels as men age have received increasing attention in recent years. It is known as late-onset hypogonadism.

After age 40, the concentration of circulating testosterone falls by about 16% every year for most men. By the age of 60, the low levels of testosterone would lead to a diagnosis of hypogonadism in younger men.

About 4 in 10 men have hypogonadism by the time they reach 45 years. The number of cases in which older men have been diagnosed as having low testosterone increased 170% since 2012.