



DON'T IGNORE THE MALE PARTNER'S ROLE IN ACHIEVING PARENTHOOD!

From the dawn of civilization, the basic requirements of humans have been food, shelter and clothing, in addition to the primal needs - sleep and reproduction. According Prof (Dr) Robert Edwards, who won the Nobel Prize in medicine for the world's first successful human IVF baby, the most important duty of any person is to successfully produce an offspring, to ensure the continuity of their genes and the species. While most couples don't encounter problems conceiving, studies show that 1 in every 6 couples have difficulty conceiving. According to WHO, this constitutes 48 million couples worldwide. Amongst infertile couples, the male partner contributes in nearly half the cases - quite a substantial number!

WHY IS THE MALE PARTNER NEGLECTED WITH RESPECT TO INFERTILITY?

Traditionally, especially in India, the responsibility of getting pregnant was associated with women. The blame of infertility thus ended with females, although male factor contributes to nearly half of the numbers. Male factor infertility often goes unnoticed as men don't experience any symptoms and hence don't seek help. The social stigma attached to infertility and false association of masculinity (ability to have sexual intercourse) with male fertility further adds to this. However, with time, this perception has been changing and men have been forthcoming for treatment, thereby lessening social stigma and pressure.

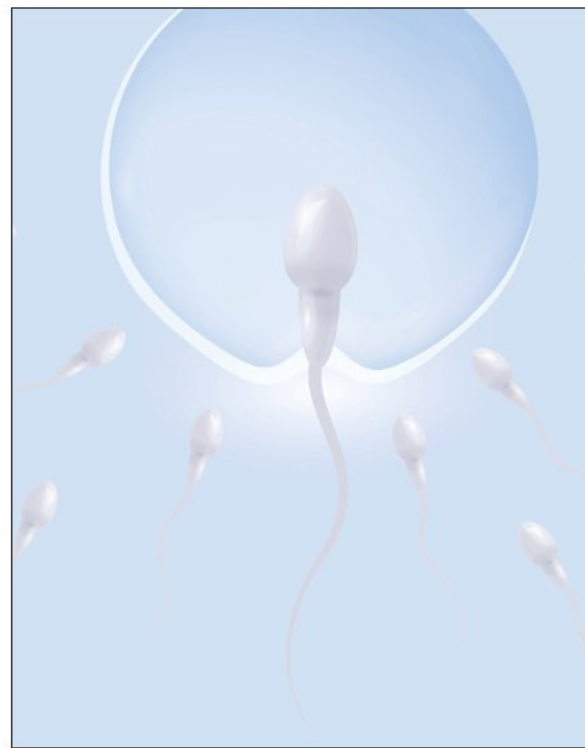
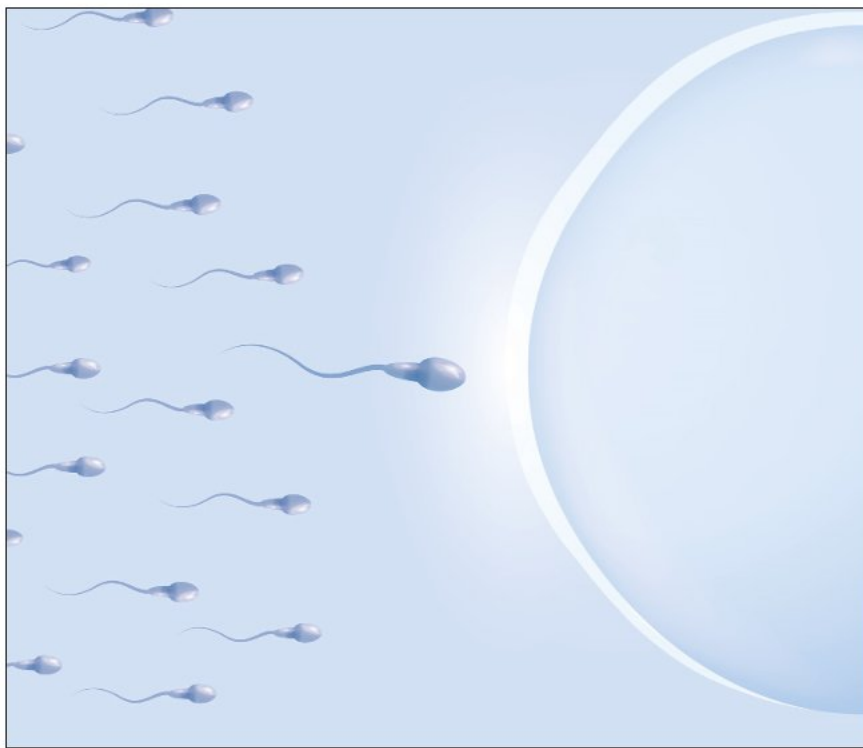
WHEN SHOULD COUPLES APPROACH A DOCTOR?

Any couple who has been trying to conceive for a year, and unsuccessful, needs to consult a doctor. Difficulties faced by the couple to conceive is the main indication that the male partner should also be evaluated. Additionally, those suffering from any of the following symptoms, need not wait for a year before consulting.

- Sexual Dysfunction - Reduced sexual desire / erectile dysfunction - difficulty in having or maintaining an erection / difficulty in orgasm and ejaculation
- Genital tract infection - discharge from penis / burning sensation / frequent urination / pain or discomfort in pelvic region or abdomen
- Pain or swelling in the testis or scrotum
- Hormonal disorders where there could be decreased facial and body hair, female pitch of voice, enlarged breast(s) (Gynaecomastia)
- Undescended testis "Cryptorchidism" - Testis being absent from their normal location inside the scrotal sac and present in the abdomen instead
- Certain respiratory conditions are associated with increased chances of infertility
- Family history of difficult conception especially in the siblings

WHAT CAUSES MALE INFERTILITY?

Sperms are the reproductive male cells, produced in the male reproductive organs called Testis. The testes are located in a pouch like structure (scrotum), outside the body, so body temperature does not impact sperm production. The process of sperm production, called "Spermatogenesis", begins at puberty in males. Hormones from the brain act on the testes, which responds to the signals and start producing sperms. The entire cycle of sperm production takes 2.2½ months, at the end of which they are transported via fine tubes and stored in an organ called as epididymis, where they mature over 12-14 days. On appropriate sexual stimulation, sperms are released in the semen during ejaculation via the genital tract and the penis. A healthy sperm is motile and essential to penetrate the egg



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("the oocyte") from the female. This fertilisation process results in the formation of a "zygote" which develops into an embryo. The embryo attaches ("implants") inside the womb (uterus) of the female and grows for 9 months before being delivered. Any factor which interferes with this entire process can lead to infertility.

THE ODDS FOR INFERTILITY ARE AMPLIFIED BY LIFESTYLE AND THE ENVIRONMENT. THE RISK FACTORS FOR INFERTILITY INCLUDE:

1. **Sedentary lifestyle** : Moderate exercise has shown to benefit a healthy life in general and specifically improve sperm production
2. **Smoking**: The multiple chemicals in the smoke causes a multitude of effects including erectile dysfunction and drop in sperm parameters

3. Stress affects hormone secretion and may interfere with sexual activity as well
4. Excessive alcohol intake may lead to erectile dysfunction and hormonal imbalance in case of liver failure
5. Obesity may lead to hormonal changes, interfere with sexual activity and cause a local rise of temperature of testes
6. Exposure to chemicals like phthalates, Bis-Phenol-A (BPA) used in plastics, heavy metals like mercury, cadmium, arsenic, pesticides amongst others
7. Recreational drug abuse of cocaine / heroin / LSD / marijuana amongst others
8. Anabolic steroid usage by gym goers for increased muscle mass (body building) adversely affects the hormone production including testosterone
9. Certain occupations where there is exposure to excessive heat and/or radiation
10. Fast food (Junk food) and tight undergarments

WHAT ARE THE MAJOR CAUSES FOR INFERTILITY?

1. **Hormonal imbalance**: The hormones from the brain which stimulate sperm production, might be produced insufficiently and/or secreted in an inappropriate manner. The major contributors include the hypothalamus, pituitary gland, thyroid gland and adrenal gland. Testosterone formed from the testes has arguably the most important role to play.
2. **Cryptorchidism**: Undescended testis do not produce sperm normally as they are not placed in their anatomical location inside the scrotal sac.
3. Swelling of Testicular veins called as Varicocele
4. Trauma to testis or genital tract.
5. Testicular cancer which affects sperm production.
6. Drugs used to treat cancer (chemotherapy) and the exposure to radiation (radiotherapy) may damage the testis. It is advisable to freeze the semen as backup before undergoing these treatments.
7. Genital tract infections may damage the testis and decrease sperm production.
8. Genital tract obstruction can occur at various levels and be caused by infection (ex: Tuberculosis and Mumps), injury, post-radiotherapy and post certain surgeries. It may be partial or complete.
9. Erectile dysfunction
10. Ejaculatory disorders like delayed ejaculation, retrograde ejaculation where the semen goes into urinary bladder instead of coming out through penis and anejaculation where there is no ejaculate at all.
11. Genetic causes like chromosomal abnormality (ex: Klinefelter's Syndrome), Y-chromosome microdeletion, Sertoli cell only syndrome and Cystic Fibrosis.
12. Certain medications may adversely affect semen parameters.

WHAT TO EXPECT WHEN YOU CONSULT A DOCTOR

When you visit a doctor, a thorough history would be taken, where you would be asked questions regarding your lifestyle, occupation, exposure to chemicals, history of infections including Tuberculosis and mumps, genital tract infections, addictions, previous major illnesses and surgeries especially genitourinary surgery

and sexual history.

This is followed by a physical examination which would entail examination of testis, epididymis, varicocele if any, part of the genital tract and penis.

DIAGNOSIS AND INVESTIGATIONS

- **Semen Analysis**: This test wherein a semen sample is produced by ejaculation, forms the cornerstone for male fertility evaluation. Certain requirements of the test include proper cleaning of part before sample collection, 2-5 days of abstinence from ejaculation and collection in a wide mouthed sterile container specifically used for semen collection, while avoiding spillage. The results are interpreted mainly for below parameters:
 - Sperm count in million per mL - Normal ≥ 15 million/mL; counts lesser than this is termed as "Oligozoospermia"
 - Percentage of motile sperms - Motile sperms are the healthy sperm which result in fertilization. Normal $\geq 40\%$. Lesser values are termed as "Asthenozoospermia".
 - Percentage of normal morphology sperm - shape and form of sperm - which is essential for the functioning of the sperm. Normal $\geq 4\%$; Lesser values are called as "Teratozoospermia".

IN CERTAIN CONDITIONS, ADDITIONAL TESTS ARE ADVISED INCLUDING:

1. Hormonal profile - Serum FSH and Testosterone
2. USG - Scrotum Doppler
3. Trans-Rectal Ultrasound
4. Genetic test - Karyotyping and Y-chromosome microdeletion
5. Sperm DFI
6. Sperm Function Tests
7. Testicular Biopsy

TREATMENT FOR MALE FACTOR INFERTILITY

Successful treatment for male factor infertility is possible in majority of cases. Treatment depends on the underlying cause and degree of severity. The various treatment modalities include lifestyle changes, oral medications, surgical treatment and assisted reproductive techniques (ART). For mild to moderate cases, lifestyle changes and medical treatment form the first line of treatment.

Lifestyle changes: Cessation of smoking and recreational drug abuse, avoiding excessive alcohol consumption, regular exercise and avoiding stress help control infertility. Avoid junk food and consume plenty of fresh fruits and vegetables rich in Vitamin C and E, omega-3 fatty acids, zinc and antioxidants like lycopene, like citrus fruits, egg, fish and walnuts. It is better to avoid heavy exercise, tight undergarments and hot sauna baths.

Medical treatment: Antioxidants and micronutrients essential for sperm are the mainstay of medical treatment. Additionally, certain drugs and hormones which enhance sperm production are useful in indicated cases. Medicines and certain aids help for erectile dysfunction and ejaculatory dysfunction.

Surgical treatment: These include treatment of a varicocele which is the most common treatable cause of male infertility, vasectomy reversal in previously vasectomised patient, removal of genital tract obstruction, orchidopexy where the placement of undescended testis is corrected surgically

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and placed inside scrotum and TESA/PESA for surgical sperm retrieval.

ART procedures like Intra-uterine Insemination (IUI), In-vitro fertilization (IVF) and Intra-cytoplasmic Sperm Injection (ICSI).

IUI gives good results in mild to moderately low sperm count and motility cases, while IVF and ICSI give better results when the count and motility are severely affected.

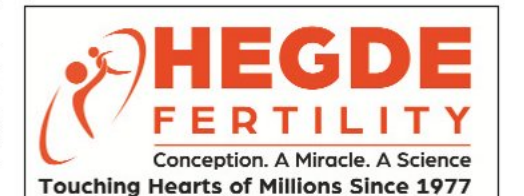
Male patients who have zero count (azoospermia), can also father a child, with surgical sperm retrieval in combination with ICSI.

Semen cryopreservation (freezing) or storing sperm in specialised containers and conditions, maybe recommended in certain cases, to enable their safe usage for ART later.

Male infertility is a common occurrence and with correct approach can be diagnosed easily. In most cases it can be successfully treated.

Hegde Fertility ensures couples are supported through their process of evaluation and diagnosis. Couples are also adequately counselled regarding all available treatment options in detail including benefits, risks, limitations, success rates and cost. The treatment is initiated following an informed decision by the couple.

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