

# A Review of male and female infertility and treatments for Infertility

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**Abstract:** This review is brief out over-all information on human reproduction and which abnormality can occurs in human reproduction so infertility happens. After fertilization of male sperm and female ova process of fertilization starts but due to some abnormalities in sperm and ova So it will show the infertility reasons and we will see how to overcome from infertility.

In male infertility causes due to low sperm production, morphology of sperm changes, slower the motility of sperm, abnormal sperm function, or blockages that block the normal travelling of sperm also some immature sperm can affect fertilization process, in females some reason for infertility are failure to ovulate, fallopian tube blockage, tubal infection, endometriosis, irregular menstrual cycle, improper contractility of uterus or it can be uterine fibroids. Above this disorder causes infertility in men and women and purpose of this review is providing brief information about infertility reasons and treatment for infertility.

**Keywords:** Infertility, Male infertility, Female infertility, Treatment

## 1. Introduction

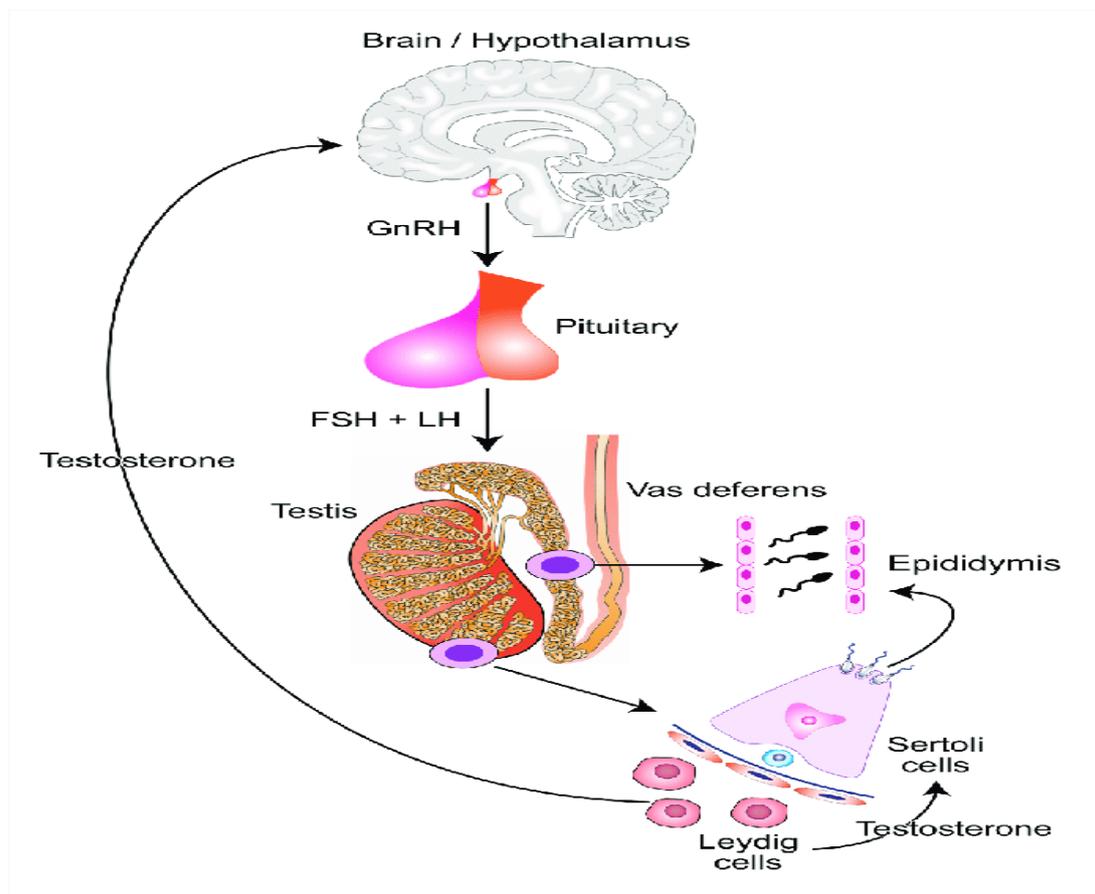
While there is a vast information in journals and literature on human reproduction and reason for infertility and how overcome from infertility. During copulation between opposite sex male sperm will fertilize with female ova and fertilization occurs after blastula and morula and further it divides into many parts so fetus takes birth. this fetus is developed in ninth week after fertilization. Further development of newborn is seen in uterus where it will get over all nutrition through placenta and after nine months newborn is ready to take birth. This is the process for fertilization and newborn birth. But due to immature sperm and ova or by improper functioning of sperm and ova infertility causes. Assisted human reproduction (AHR) is another term in which through long procedure sperm and egg that is ova is grown and studied outside the body so through this process fertilization process is studied outside the body. This including in-vitro fertilization (IVF), gamete intrafallopian transfer (GIFT), and zygote intrafallopian transfer (ZIFT). [1]

## 2. Assessment and studying all the infertility reasons

Infertility is known as couple are not able to have baby even after normal regular intercourse so there can be number of reasons for infertility. Which can be different in male and women. There are about 10-15% couples are affected by infertility that means WHO and their study shown 50-80 million people in worldwide suffer from infertility.

### Process for Production of sperm cells

In male reproductive hormone axis has main function and role for overcome infertility. This male reproductive hormone axis is a hypothalamic-pituitary gonadal axis. It has three major component hypothalamic, pituitary, and testicular glands. This will provide required amount of hormone for male sexual reproduction. Any abnormality in it can causes infertility. [2]



**Figure.1 Brain pituitary testicular axis-** As shown in figure 1 it will brief out about stages and process for spermatozoa and sperm production by hormones like gonadotropin releasing hormone will shows activity testicular gland so it will produce testosterone. [3]

### 3. In male main causes of infertility

There are various reasons that may cause infertility in men

#### 1. Lack of hormones

If due to any reason brain stops producing gonadotropic releasing hormone (GnRH), this will cause lack of testosterone and stopping sperm production. Treatment for deficiency of gonadotropic releasing hormone using sex steroids, gonadotropin, injection of gonadotropin releasing hormone. [4]

Mumps viral infection in adult can cause shrinkage of testicles or testicular atrophy and it can drop the sperm count so it adverse effect on sperm count and infertility may observe in males.

#### 2. Life style

Other reasons for infertility are life style like regular consumption of alcohol, smoking, chewing tobacco this consumption in large manner affects sperm count because they can damage sperm DNA so infertility may occur.

#### 3. Urinary tract infection and microorganism affecting

Urinary tract infection (UTI) also can cause infertility staphylococcus aureus and Escherichia coli bacteria cause UTI and this can also cause infertility. Azoospermia (low sperm count), abnormal spermatozoa morphology (shape) and low motility of sperm this reason can also cause infertility in males. some microorganism like staphylococcus aureus gram positive bacteria and E coli gram negative bacteria in semen can affect primary infertility. Herpes simplex virus (HSV) in semen of some infertile men shows low sperm count and poor motility of sperm. [5]

#### 4. Asthenospermia

Asthenospermia is a condition in which motility of sperm is decreased by 32% or <40% sperm locomotion complete asthenospermia cause due to metabolic deficiencies and abnormal sperm flagellum so motility of sperm is gets slow down so term is known as asthenospermia so infertility may cause.

#### 5. Azoospermia

Azoospermia is a condition in which there are no sperm to ejaculate due to blockage in reproductive system or due to other reason no sperm are there to ejaculate and this condition may cause due to.

### 6. Oligospermia

In oligospermia there are low sperm count condition is observed it may lower down count of sperm due to any injury to testicular gland or to test is so infertility may cause.

### 7. Teratospermia

In teratospermia morphology of sperm cell is or structural determination is gets abnormal defect seen in head, midpiece or in tail so infertility may happen. [6]

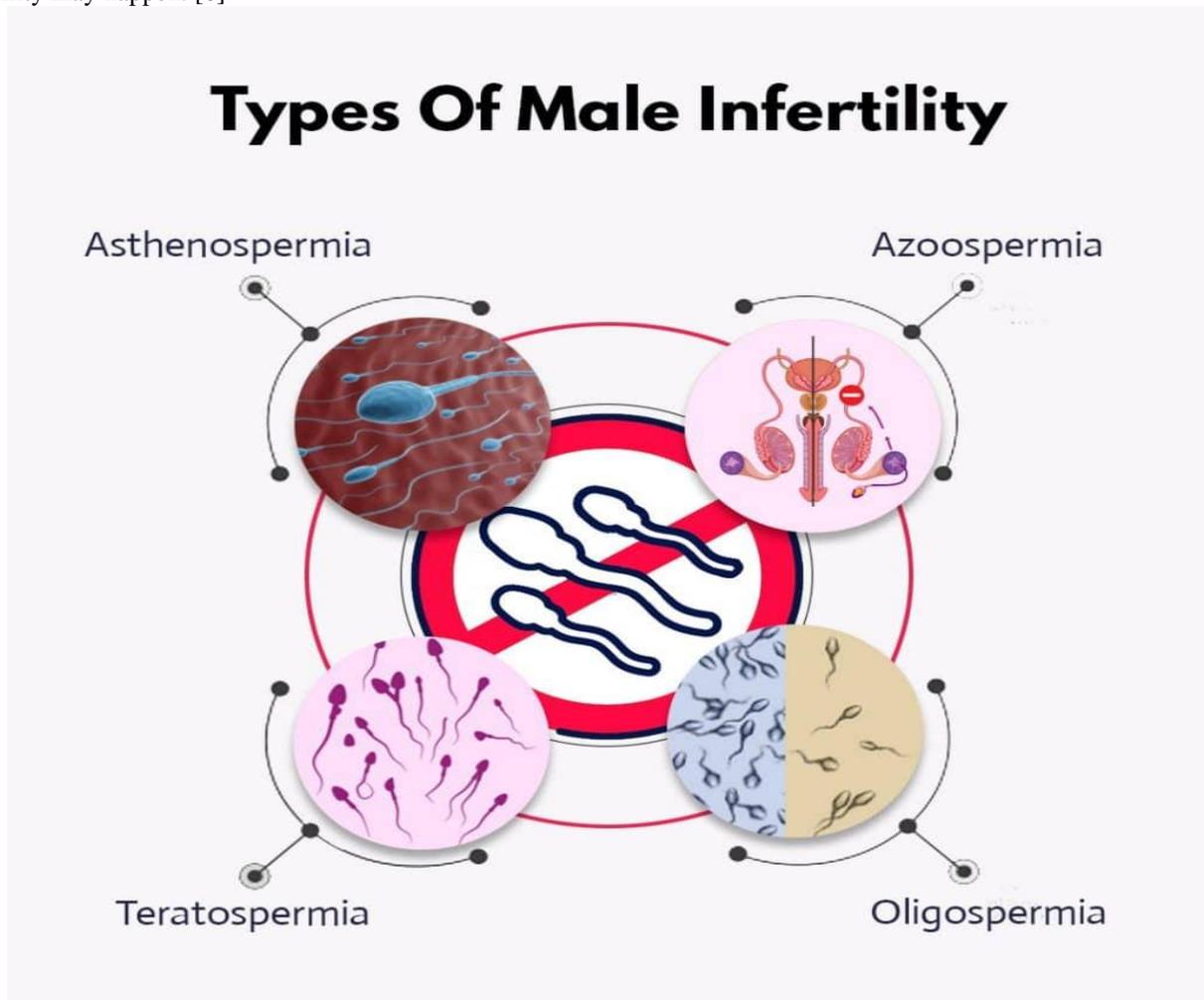


Fig-2 Types of male infertility

In that asthenospermia is condition in which sperm motility decreased by 32% which can cause infertility, Azoospermia in which there are no sperm to ejaculate due to blockage or low production of sperm, Oligospermia is condition in which low sperm count is observed, Teratospermia is condition in which it is structurally sperm cells are abnormal it means it shows defect in head, midpiece and tail. [7]

### 4. In women main causes of infertility

In women infertility may happens due to various medical condition like damage of fallopian tube, interfere with ovulation, or cause hormonal complication.

#### Medical condition causes infertility

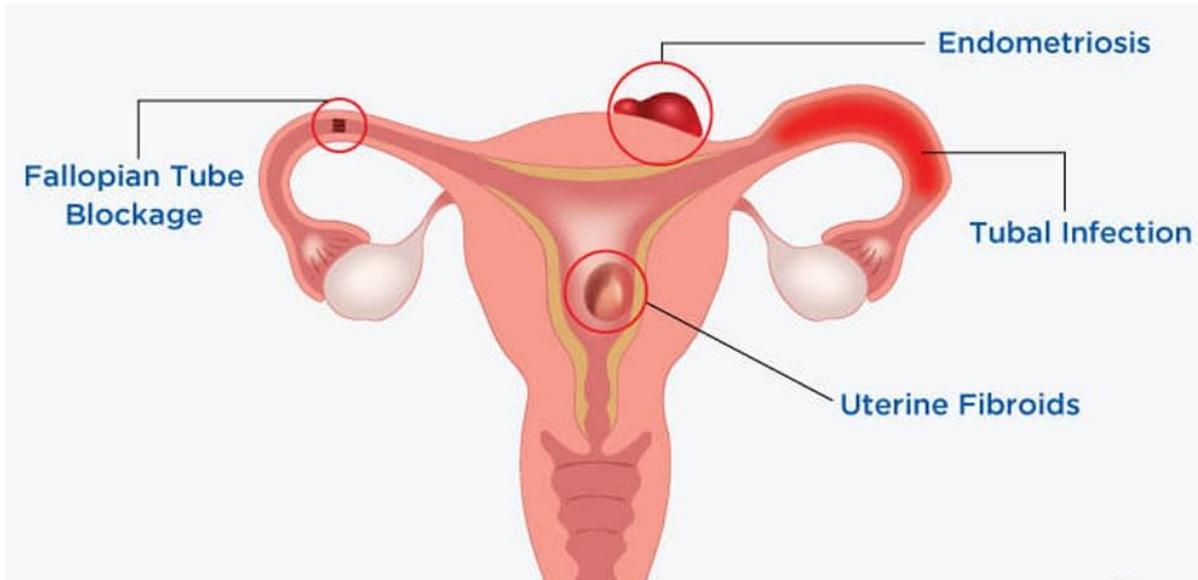
1. Pelvic inflammatory diseases
2. Endometriosis
3. Poly-cystic ovarian syndrome
4. Premature ovarian failure
5. Uterine fibroids
6. Environmental factor

This above medical condition causes infertility. There may other some factor they may cause infertility that are ovulation problem, tubal blockages, uterine problems, hormone imbalance. Ovarian abnormality can cause due to weight loss and extra weight but estrogen helpful for both the reproductive system in women for ovarian normal growth. [8]

Hormonal imbalance also may cause infertility in women. Hypothalamus plays main role in hormones production. In women gonadotropin releasing hormone secreted by hypothalamus and this will control pituitary gland which plays main role in production of other hormones in women body. Therefore women with imbalanced hormones cannot produce required quantity of follicles to fix the growth of an ovule. [9]

#### Primary reasons for infertility in women

1. Ovulation disorder
2. Fallopian tube blockages
3. Uterine lesion
4. Endometriosis



**Fig.3 Causes of female infertility**-As shown in figure 3 there are blockage which can block the entry of sperm and further fertilization inhibited, uterine fibroids will also become reason for infertility by forming non-cancerous fibroids and it will become a infertility reason in women, endometriosis is a painful disorder due to forming tissue that are useless but they form around near to uterus or close to fallopian tubes, Tubal infection is an inflammation in fallopian tube caused by bacterial infection which is transmitted by sexual transmitted diseases(STD) that are gonorrhoea and chlamydia. [10]

#### 5. Appropriate treatment for infertility in females

1. Sex hormone therapy (follicle stimulating hormone, human chorionic gonadotropin)
2. Tubal plastic surgery
3. Assisted reproductive technology.

Above techniques are used as treating the infertility in female by giving hormone therapy which are required and then another is tubal plastic surgery of fallopian tube and last one is assisted reproductive technology in this both ovum and sperm handle egg is mixed with sperm to make embryo. In that herbal preparation in China which known as Chinese herbal medicine (CHM) also Acupuncture is a treatment due to which it effects hypothalamic secretions that are luteinizing hormone, follicle stimulating hormone, gonadotropin releasing hormone so it will help to production of estrogen and progesterone. Acupuncture treatment can regulate ovarian function so it also helps to overcome infertility. [11]

#### 6. Abbreviations-

AHR, Assisted human reproduction; IVF, In-vitro fertilization; GIFT, Gamete intrafallopian transfer; ZIFT, Zygote intrafallopian transfer; GnRH, Gonadotropic releasing hormones; LH, Luteinizing hormone; FSH, Follicle stimulating hormone; UTI, Urinary tract infection; HSV, Herpes simplex virus; STD, Sexually transmitted diseases; CHM, Chinese herbal medicine.

#### Conclusion

Infertility is a common problem in men and women now a days. Patients which are unable to have a newborn after a year of regular unprotected intercourse may reason have infertility. Medical history, physical examination and some test observation may give the reason for infertility. But in women infertility is causing psychological and social stress so supporting women and giving him support physically and mentally is most important so they can overcome from anxiety and depression for their well-being and healthy life. Now a days there are so many treatments given to overcome infertility in women and with no adverse effect and side effects like Chinese herbal treatment (CHM) and acupuncture also other treatments like hormone therapy and homeopathy. In men various types of infertility reasons are there like Asthenospermia, Azoospermia, Oligospermia, Teratospermia this disorder causes infertility in males but with the help of medical treatments and exercising it may cure to overcome infertility.

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