INFERTILITY

Male Infertility, Female Infertility

The failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse.

♀ Symptom ♂ Male & Female

About Infertility

Infertility is defined as inability of a couple to conceive naturally after one year of regular unprotected sexual intercourse. It remains a major clinical and social problem, affecting perhaps one couple in six. Evaluation usually starts after 12 months; however it may be indicated earlier. The most common causes of infertility are: male factor such as sperm abnormalities, female factor such as ovulation dysfunction and tubal pathology, combined male and female factors and unexplained infertility.

Infertility can be broken down into primary and secondary infertility.

**Primary infertility** is defined as the absence of a live birth for women who desire a child and have been in a union for at least 12 months, during which they have not used any contraceptives. The World Health Organisation (WHO) also adds that 'women whose pregnancy spontaneously miscarries, or whose pregnancy results in a still born child, without ever having had a live birth would present with primarily infertility'.

**Secondary infertility** is defined as the absence of a live birth for women who desire a child and have been in a union for at least 12 months since their last live birth, during which they did not use any contraceptives.

Thus the distinguishing feature is whether or not the couple have ever had a pregnancy which led to a live birth.

**Cause of female infertility**

The following causes of infertility may only be found in females. For a woman to conceive, certain things have to happen: vaginal intercourse must take place around the time when an egg is released from her ovary; the system that produces eggs has to be working at optimum levels; and her hormones must be balanced.

For women, problems with fertilisation arise mainly from either structural problems in the Fallopian tube or uterus or problems releasing eggs. Infertility may be caused by blockage of the fallopian tube due to malformations, infections such as chlamydia and/or scar tissue. For example, endometriosis (a state in which pieces of the tissue alike to the lining of the uterus (endometrium) grow in other parts of the body) can cause infertility with the growth of endometrial tissue in the Fallopian tubes and/or around the ovaries. Endometriosis is usually more common in women in their mid-twenties and older, especially when postponed childbirth has taken place.

Another major cause of infertility in women may be the inability to ovulate. Malformation of the eggs themselves may complicate conception. For example, polycystic ovarian syndrome is when the eggs only partially developed within the ovary and there is an excess of male hormones. Some women are infertile because their ovaries do not mature and release eggs. In this case synthetic FSH (follicle-stimulating hormone) by injection or Clomid (Clomiphene citrate) via a pill can be given to stimulate follicles to mature in the ovaries.

Other factors that can affect a woman's chances of conceiving include being overweight or underweight, or her age as female fertility declines after the age of 30.
Sometimes it can be a combination of factors, and sometimes a clear cause is never established.

**Causes of male infertility**

The main cause of male infertility is low semen quality. In men who have the necessary reproductive organs to procreate, infertility can be caused by low sperm count due to endocrine problems, drugs, radiation, or infection. There may be testicular malformations, hormone imbalance, or blockage of the man's duct system. Although many of these can be treated through surgery or hormonal substitutions, some may be indefinite. Infertility associated with viable, but immotile sperm may be caused by primary ciliary dyskinesia. The sperm must provide the zygote with DNA, centrioles, and activation factor for the embryo to develop. A defect in any of these sperm structures may result in infertility that will not be detected by semen analysis.

Infertility is considered also a public problem. It does not affect the couples' life only, but it also affects the healthcare services and social environment. The feelings experienced by the infertile couples include depression, grief, guilt, shame, and inadequacy with social isolation.

Infertility may be associated with several diseases include:

**Erectile dysfunction**

As was mentioned above, feelings of stress, depression, guilt, or anxiety in infertile men can cause psychogenic impotence, which heightens the feelings of inadequacy that already accompany infertility. The psychological stress of infertility has been shown to affect sperm parameters in significant and demonstrable ways that may further contribute to difficulties with erectile potency; emotional reactions to the infertility may alter or even undermine a previous consolidation of a sense of self as sexually adequate. Infertility weighs on many males' minds; this creates mental instability, which often results in impotence. Even with an erection problem, a man may still have sexual desire and be able to have an orgasm and to ejaculate. Thus, it is important to keep in mind that it can be helped if the roots of stress are detected. Talking to a partner about worries, changing lifestyle and/or maintaining work-life balance can decrease the likelihood of erectile dysfunction.

**Undescended testes**

Many men who were born with undescended testes have reduced fertility, even after orchiopexy in infancy. The fertility reduction after orchiopexy for bilateral cryptorchidism is more marked, about 38%, or 6 times that of the general population.

At least one contributing mechanism for reduced spermatogenesis in cryptorchid testes is temperature. The temperature of testes in the scrotum is at least a couple of degrees cooler than in the abdomen and the temperature rising may damage fertility. Some circumstantial evidence suggests tight underwear and other practices that raise testicular temperature for prolonged periods can be associated with lower sperm counts. Nevertheless, research in recent decades suggests that the issue of fertility is more complex than a simple matter of temperature. It seems likely that subtle or transient hormone deficiencies or other factors that lead to lack of descent also impair the development of spermatogenic tissue.

**Retrograde ejaculation**

Males with retrograde ejaculation are not irreversibly infertile because sperms are presented in urine and it is possible to isolate them with the help of assisted reproduction techniques. The procedure includes adjustment of the osmolarity of the patient's urine by drinking water. The small amount of antegrade-produced ejaculate is collected in a plastic beaker, while the retrograde fraction of the ejaculate needs to be urinated immediately into a jar with culture medium containing human serum albumin to dilute the urine. Finally, the urine/medium mixture has to be centrifuged, resuspended and filtrated on the glass wool column where sperms are separated. When the sperm is isolate than it could be injected directly into the egg (which is maintained from woman by transcervical oocyte retrieval). The following procedure is IVF-ICSI.

**Fallopian tube blockage**

Tubal factor infertility accounts for nearly one-quarter of all cases of infertility. The fallopian tubes may be abnormal in structure or function. Structural disorders can block the fallopian tubes. They include tubal scarring or blockage most commonly from pelvic infections, prior abdominal surgeries and endometriosis. Practically, many gynecologists are reluctant when reporting on diagnostic laparoscopy. Some perform a single puncture intraumbilical procedure that neglects an auxiliary portal for proper grasping of the adnexa and thorough evaluation of the ovarian fossa. Tubal pathologies may be responsible for primary and secondary infertility. The evaluation of the fallopian tube is necessary to determine the management plan of infertility. A number of
diagnostic tests are being used in clinical practice to assess tubal patency as part of the work-up for subfertility.

**Pelvic Inflammatory Disease (PID)**

PID can cause scarring and damage which can affect fertility. If both or one of the fallopian tubes are blocked due to scars and adhesions, then the sperm will not reach egg and egg cannot make way to the uterus. This prevents fertilization and also pregnancy. If only one fallopian tube is blocked, there is yet a possibility that a woman can get pregnant, since the other tube can release an egg and let a sperm swim through. Two blocked fallopian tubes, however, are not a good sign for women who wish to naturally become pregnant. Untreated PID can result in long term complications including ectopic pregnancy and infertility.

**Vaginismus**

Due to the discomfort when attempting penetration for some women entry of the penis may be impossible, thus, women suffering from vaginismus might be also struggling with infertility. Also, they may fail to consummate their marriage and inability to conceive can lead to even greater pain and depression. Since the woman cannot have sexual intercourse with partner, she may perceive herself as a failure and feel even more pressured and anxious. It is important not to blame yourself for this condition and it is highly recommended to seek a professional advice. With professional advice and help women can cure vaginismus and could even conceive.

### Find more about related issues

**Epididymis**
The epididymis is a tube that connects a testicle to a vas deferens in the male reproductive system.
Learn more at: [www.fertilitypedia.org/edu/organs/epididymis](http://www.fertilitypedia.org/edu/organs/epididymis)

**Fallopian tubes**
Two very fine tubes that transport sperm toward the egg, and allow passage of the fertilized egg back to the uterus for implantation.
Learn more at: [www.fertilitypedia.org/edu/organs/fallopian-tubes](http://www.fertilitypedia.org/edu/organs/fallopian-tubes)

**Hypothalamus**
A region of the forebrain that regulates body temperature, some metabolic processes and governs the autonomic nervous system.
Learn more at: [www.fertilitypedia.org/edu/organs/hypothalamus](http://www.fertilitypedia.org/edu/organs/hypothalamus)

**Ovary**
The ovum-producing organs of the internal female reproductive system
Learn more at: [www.fertilitypedia.org/edu/organs/ovary](http://www.fertilitypedia.org/edu/organs/ovary)

**Penis**
External male sex organ that additionally serves as the urinal duct.
Learn more at: [www.fertilitypedia.org/edu/organs/penis](http://www.fertilitypedia.org/edu/organs/penis)

**Pituitary gland**
An endocrine gland, about the size of a pea, whose secretions control the other endocrine glands and influence growth, metabolism, and maturation.
Learn more at: [www.fertilitypedia.org/edu/organs/pituitary-gland](http://www.fertilitypedia.org/edu/organs/pituitary-gland)

**Scrotum**
Scrotum is an anatomical male reproductive structure that consists of a suspended sack of skin and smooth dual-chamber muscle located under the penis.
Learn more at: [www.fertilitypedia.org/edu/organs/scrotum](http://www.fertilitypedia.org/edu/organs/scrotum)
Testes
Male gonads which produce both sperm and androgens, such as testosterone, and are active throughout the reproductive lifespan of the male.
Learn more at: www.fertilitypedia.org/edu/organ/testes

Uterus
The uterus is the largest and major organ of the female reproductive tract that is the site of fetal growth and is hormonally responsive.
Learn more at: www.fertilitypedia.org/edu/organ/uterus

Vagina
Sex organ that is a part of the female genital tract having two primary functions: sexual intercourse and childbirth.
Learn more at: www.fertilitypedia.org/edu/organ/vagina

Vas deferens
The duct in the testicle that carries semen from the epididymis to the ejaculatory duct.
Learn more at: www.fertilitypedia.org/edu/organ/vas-deferens

Diagnoses

Varicocele
An abnormal enlargement of the pampiniform venous plexus in the scrotum.
Learn more at: www.fertilitypedia.org/therapy/diag/varicocele

Azoospermia
Complete absence of sperm in the ejaculate of a man.
Learn more at: www.fertilitypedia.org/therapy/diag/azoospermia

Erectile dysfunction
The inability (that lasts more than 6 months) to develop or maintain an erection of the penis during sexual activity.
Learn more at: www.fertilitypedia.org/therapy/diag/erectile-dysfunction

Anorexia Nervosa
An eating disorder characterized by the maintenance of a body weight below average, fear of gaining weight, and a distorted body image.
Learn more at: www.fertilitypedia.org/therapy/diag/anorexia-nervosa

Menstrual cycle disorders
An abnormal condition in a woman’s menstrual cycle.
Learn more at: www.fertilitypedia.org/therapy/diag/menstrual-cycle-disorders

Undescended testes
In the case of cryptorchidism one or both testes are absent from the scrotum. It is the most common etiologic factor of azoospermy in the adult.
Learn more at: www.fertilitypedia.org/therapy/diag/undescended-testes

Anejaculation
The pathological inability to ejaculate in males, with (orgasmic) or without (anorgasmic) orgasm.
Learn more at: www.fertilitypedia.org/therapy/diag/anejaculation

Ejaculatory disorders
A class of sexual disorders defined as the subjective lack of normal ejaculation.
Learn more at: www.fertilitypedia.org/therapy/diag/ejaculatory-disorders
Fallopian tube blockage
An obstruction prevents the egg or sperm from traveling down the tube, thus making fertilization impossible.
Learn more at: www.fertilitypedia.org/therapy/diag/fallopian-tube-blockage

Endometrial polyp
The finger like overgrowths attached to the inner wall of the uterus that extend into the uterine cavity which are made of endometrial tissue.
Learn more at: www.fertilitypedia.org/therapy/diag/endometrial-polyp

Retrograde ejaculation
The semen, which would normally be ejaculated via the urethra, is redirected to the urinary bladder.
Learn more at: www.fertilitypedia.org/therapy/diag/retrograde-ejaculation

Thyroid disorders
A medical condition impairing the function of the thyroid.
Learn more at: www.fertilitypedia.org/therapy/diag/thyroid-disorders

Turner syndrome
Turner syndrome is a genetic disorder in which a female is partly or completely missing one X chromosome that results in ovarian dysgenesis.
Learn more at: www.fertilitypedia.org/therapy/diag/turner-syndrome

Klinefelter syndrome
The set of symptoms that result from two or more X chromosome in males.
Learn more at: www.fertilitypedia.org/therapy/diag/klinefelter-syndrome

Kallmann syndrome
A genetic condition where the primary symptom is a failure to start puberty or a failure to fully complete puberty.
Learn more at: www.fertilitypedia.org/therapy/diag/kallmann-syndrome

Non-obstructive azoospermia
Complete absence of sperm in the ejaculate due to testicular failure.
Learn more at: www.fertilitypedia.org/therapy/diag/non-obstructive-azoospermia

Adenomyosis
Medical condition characterized by the presence of ectopic endometrial tissue within the myometrium.
Learn more at: www.fertilitypedia.org/therapy/diag/adenomyosis

Vaginismus
A physical or psychological condition in which woman cannot engage in any form of vaginal penetration.
Learn more at: www.fertilitypedia.org/therapy/diag/vaginismus

Asherman’s syndrome
A medical condition, where the walls of the uterus stick to one another due to bands of scar tissue.
Learn more at: www.fertilitypedia.org/therapy/diag/asherman-s-syndrome

XX male syndrome
The male sex chromosomal disorder characterized by a spectrum of clinical presentations, ranging from ambiguous to normal male genitalia.
Learn more at: www.fertilitypedia.org/therapy/diag/xx-male-syndrome

Uterine malformations
A type of female genital malformation resulting from an abnormal development of the Müllerian duct(s) during embryogenesis.
Learn more at: www.fertilitypedia.org/therapy/diag/uterine-malformations
Uterus septus
A form of a congenital malformation where the uterine cavity is partitioned by a longitudinal septum. It is one of Müllerian duct anomalies.
Learn more at: www.fertilitypedia.org/therapy/diag/uterus-septus

Premature ovarian failure
The loss of function of the ovaries before age 40.
Learn more at: www.fertilitypedia.org/therapy/diag/premature-ovarian-failure

Uterus duplex
Congenital uterine malformation where both Müllerian ducts develop but fail to fuse, thus the woman has a "double uterus".
Learn more at: www.fertilitypedia.org/therapy/diag/uterus-duplex

Hypogonadism
A medical term which describes a diminished functional activity of the gonads – the testes and ovaries.
Learn more at: www.fertilitypedia.org/therapy/diag/hypogonadism

Uterus subseptus
A form of a congenital malformation where the uterus is partially divided by a longitudinal septum. It is one of Müllerian duct anomalies.
Learn more at: www.fertilitypedia.org/therapy/diag/uterus-subseptus

Menopause
The time in most women’s lives when menstrual periods stop permanently, and the woman is no longer able to have children.
Learn more at: www.fertilitypedia.org/therapy/diag/menopause

Sperm autoantibodies
Antibodies that bind to sperm, inhibiting their movement, stopping recognition and entry into the egg.
Learn more at: www.fertilitypedia.org/therapy/diag/sperm-autoantibodies

Hydrosalpinx
A hydrosalpinx is an abnormal pouch containing liquid in a fallopian tube.
Learn more at: www.fertilitypedia.org/therapy/diag/hydrosalpinx

Pyosalpinx
A distally blocked Fallopian tube filled with pus.
Learn more at: www.fertilitypedia.org/therapy/diag/pyosalpinx-do-rf

Endometrial cancer
Cancer that arises from the endometrium, the lining of the uterus.
Learn more at: www.fertilitypedia.org/therapy/diag/endometrial-cancer

Pelvic Inflammatory Disease
Infection of the upper part of the female reproductive system and a common complication of some sexually transmitted diseases.
Learn more at: www.fertilitypedia.org/therapy/diag/pelvic-inflammatory-disease-do-rf

Prostatitis
An inflammation of the prostate gland.
Learn more at: www.fertilitypedia.org/therapy/diag/prostatitis

Amenorrhoea
The absence of a menstrual period in women of reproductive age.
Learn more at: www.fertilitypedia.org/therapy/diag/amenorrhoea
Cervical mucus defect
Condition causing cervical mucus too thick and hostile to allow the sperm to penetrate the cervix.
Learn more at: www.fertilypedia.org/therapy/diag/cervical-mucus-defect

Orchitis
An inflammation of the testes, involving swelling and heavy pains.
Learn more at: www.fertilypedia.org/therapy/diag/orchitis

Mumps
Mumps was a common childhood viral disease caused by the mumps virus. Mumps frequently causes orchitis and impairs male fertility.
Learn more at: www.fertilypedia.org/therapy/diag/mumps

Cryptozoospermia
Male infertility diagnosis characterized by extremely low concentration of sperm in semen.
Learn more at: www.fertilypedia.org/therapy/diag/cryptozoospermia

Globozoospermia
A rare abnormality of sperm morphology, with the majority of sperm cells being round-headed, which leads to male infertility.
Learn more at: www.fertilypedia.org/therapy/diag/globozoospermia

Uterine fibroids
The most common benign smooth muscle tumors of the uterus encountered in women of reproductive age.
Learn more at: www.fertilypedia.org/therapy/diag/uterine-fibroids

Oligomenorrhea
Light or infrequent menstrual flow at intervals of 39 days to 6 months or 5–7 cycles in a year.
Learn more at: www.fertilypedia.org/therapy/diag/oligomenorrhea

Cervical stenosis
Narrowing of cervix - the opening to the uterus.
Learn more at: www.fertilypedia.org/therapy/diag/cervical-stenosis

Tubal ligation
A permanent form of female sterilization, in which the fallopian tubes are severed and sealed or “pinched shut”, in order to prevent fertilization.
Learn more at: www.fertilypedia.org/therapy/diag/tubal-ligation

Testicular failure
The inability of the testicles to produce sperm or testosterone.
Learn more at: www.fertilypedia.org/therapy/diag/testicular-failure

Lupus erythematosus
Collection of autoimmune diseases in which the human immune system becomes hyperactive and attacks normal, healthy tissues.
Learn more at: www.fertilypedia.org/therapy/diag/lupus-erythematosus

Hyperprolactinemia
The presence of abnormally high levels of prolactin in the blood.
Learn more at: www.fertilypedia.org/therapy/diag/hyperprolactinemia

Y-chromosome deletions
A family of genetic disorders caused by missing gene(s) in the Y chromosome.
Learn more at: www.fertilypedia.org/therapy/diag/y-chromosome-deletions
Pelvic adhesions
A form of abdominal adhesions in the pelvis.
Learn more at: www.fertilitypedia.org/therapy/diag/pelvic-adhesions

Tubal phimosis
The type of blockage that affects the part of the fallopian tube end towards the ovary.
Learn more at: www.fertilitypedia.org/therapy/diag/tubal-phimosis

Sertoli cell-only syndrome
The absence of any developmental stage of sperm cell in the testes.
Learn more at: www.fertilitypedia.org/therapy/diag/sertoli-cell-only-syndrome

Hysterectomy
A surgery performed to remove a woman’s uterus.
Learn more at: www.fertilitypedia.org/therapy/diag/hysterectomy

Sources
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