HYPOSpermia

A condition in which a man has an unusually low ejaculate (or semen) volume.

Diagnosis: Male

Related Diagnoses:
- Azoospermia
- Erectile dysfunction
- Ejaculatory disorders
- Retrograde ejaculation
- Thyroid disorders
- Non-obstructive azoospermia
- Oligozoospermia
- Obstructive azoospermia
- Oligoasthenoteratozoospermia
- Cryptozoospermia

About Hypospermia

Hypospermia is male diagnosis characterized by reduced semen volume in comparison with normozoospermia. According to World Health Organisation (WHO) the reference values of semen volume for normozoospermia are between 2 - 6 ml. Semen volume lower than 1,5 ml is classified as hypospermia; on the contrary, semen volume higher than 5,5 ml is classified as hyperspermia. Hypospermia should not be confused with oligozoospermia which means low sperm count (less than 20 million sperm / ml). Hypospermia itself, however, does not result in severe infertility problems until it is combined with the diagnosis of low sperm count (oligozoospermia).

Semen is composed of a variety of fluids collectively produced by various glands in the male reproductive system. The most substantial fluid is seminal fluid contributed by the seminal glands. It comprises over 80 % of the semen. The remaining fluid is provided by the epididymis, prostate, and other glands. Generally said, it is a combination of lipids, proteins, acids, as well as sugars that each plays a role in fertilization.

Low semen production is related to two main organs in the male reproductive organ:
**Prostate** - this walnut sized gland stores fructose. The liquid from the seminal vesicles drain into prostate, collect fructose and follow downwards to pick up sperms.

**Seminal vesicles** - they are situated just behind the prostate glands. They are responsible for the quantity of semen or production of seminal plasma.

**Hypospermia can have several potential causes:**

**Semen analysis – ejaculate collection mistake**

The most frequent cause of hypospermia is a collection error when providing the ejaculate collection for semen analysis. If the first part of the ejaculate was lost during collection, the semen analysis should reveal a reduced sperm count. Biochemically, the ejaculate will have reduced levels of prostate specific secretions such as prostatic acid phosphatase (enzyme produced by the prostate). If the last portion of the ejaculate was lost, the sperm count may be normal to high, and the secretion of the seminal vesicle, such as fructose, will be reduced.

**Abstinence period**

Reduced semen volume may also be related to the period of abstinence. Exceptionally short periods of abstinence (1 day or less) may reduce the volume of semen. Repeating the semen analysis with longer period of abstinence (3 days or more) may correct the problem if collection error was the cause.

**Pathological conditions**

Pathological conditions causing hypospermia include retrograde flow of semen (mostly known as retrograde ejaculation; backward ejaculation of semen into the bladder), congenital absence of the seminal vesicles and vas deferens or ejaculatory duct obstruction (EDO). Hypospermia can be both congenital as well as self induced.

To treat the hypospermia, some pharmacotherapeutic methods are suggested by taking antibiotics in case of infection or a herbal or pharmaceutical supplements to increase the secretion. Surgical therapy is recommended in case of retrograde ejaculation. If these treatments do not help enough or there are excluded, the assisted reproduction techniques may be the solution to conceive.

**Associated diseases**
- oligozoospermia
- asthenozoospermia
- cryptozoospermia
- necrozoospermia
- azoospermia
- prostatitis

**Complications**

- infertility

**Risk factors**

- unhealthy lifestyle
- alcohol and drug abuse
- infection
- age (semen volume spontaneously decrease between the ages of 22 and 80 years)
- stress and psychological issues
- traumas or other testicular problems
- hormonal imbalance
- retrograde flow of semen
- ejaculatory duct obstruction (EDO)

**Impact on fertility**

Overall, semen volume has a minimal effect on spermatozoon fertilizing potential. However, semen volume determination can aid in the identification of abnormal semen etiology by providing a measurable parameter.

Hypospermia (low semen volume) itself does not cause severe infertility problems. However, combination of hypospermia with oligozoospermia (low sperm count in semen) negatively affects the chance to conceive naturally.

**Prevention**

None prevention is determined. However, healthy lifestyle, limitation in alcohol consumption or smoking and drug abuse may be beneficial as well as having good mood and decreasing the level of stress and psychic troubles.

**Symptoms**
Men may notice a lower semen volume during the ejaculation. Semen volume lower than 1.5 ml detected at semen analysis then characterizes the diagnosis of hypospermia.

**Therapies**

**Self therapy**

Rectal prostate stimulation during sexual intercourse seems to be helpful. Generally, healthy lifestyle is also recommended.

**Conventional medicine**

In case of infection, antibiotic treatment is recommended, in case of retrograde ejaculation or ejaculatory duct obstructions, the surgical treatment is more preferred.

**Pharmacotherapy**

In case of infection, antibiotics are used to treat the patient. Hypospermia or low semen volume may be remedied with the aid of supplements. Supplements like Prosolution pills, Semenax, and Volume Pills have been clinically proven to enhance male performance; Spermac and Vital M-40 capsules are effective herbal remedies for treating low semen production.

In case of retrograde ejaculation, normal ejaculation can also be induced in men with partial neurological lesions (e.g., diabetes mellitus) by ephedrine taken 30 – 60 min before coitus or a continuous sympathomimetic.

**Surgical therapy**

Mechanical obstructions of ejaculatory ducts
Surgical correction of the bladder neck is feasible in case of retrograde ejaculation. Transurethral resection of the ejaculatory ducts (TURED) is a surgical procedure how to treat obstructive male infertility conditions (such as ejaculatory ducts obstruction in this case) and thus to improve semen quality. This relatively invasive operative method with possible sever complications and disadvantages (such as opening of the ejaculatory ducts into the urethra and following backwards flow of urine into the seminal vesicles) has led to natural pregnancies of their partner in approximately 20 % cases of affected men.

Assisted reproduction

In case of retrograde ejaculation, it is usually necessary to proceed by timed intrauterine insemination (IUI) with sperm recovered from post-orgasmic urine or by catheter. Semen may also be obtained by rectal electrostimulation. Fluid restriction, sodium bicarbonate, phased fluid intake or instillation of buffer into the bladder are utilized to control urinary pH and osmolarity to minimize the toxic effects of urine to spermatozoa. If the yield of spermatozoa is poor, IVF or ICSI is indicated.

If conservative medical treatments fail to achieve a full term pregnancy, the physician may suggest the patient undergo in vitro fertilization (IVF). IVF and ART generally start with stimulating the ovaries to increase egg production. Most fertility medications are agents that stimulate the development of follicles in the ovary. Examples are gonadotropins and gonadotropin releasing hormone. After stimulation, the physician surgically extracts one or more eggs from the ovary, and unites them with sperm in a laboratory setting, with the intent of producing one or more embryos. Fertilization takes place outside the body, and the fertilized egg is reinserted into the woman’s reproductive tract, in a procedure called embryo transfer.

Intracytoplasmic sperm injection (ICSI) is beneficial in the case of male factor infertility where sperm counts are very low or failed fertilization occurred with previous IVF attempt(s). The ICSI procedure involves a single sperm carefully injected into the center of an egg using a microneedle. With ICSI, only one sperm per egg is needed. Without ICSI, you need between 50,000 and 100,000.

Men having problems with ejaculation or low semen volume, because of blocked tubes in their testes, or because of a genetic condition that prevents their sperm being released, require some form of surgical
sperm retrieval to enable ICSI to take place. Epididymal sperm obtained by microsurgical aspiration (MESA) or percutaneous sperm aspiration (PESA) and testicular sperm obtained by surgical excision (TESE) or percutaneous aspiration (TESA) are used in ICSI treatment.

Find more about related issues

Diagnoses

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

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

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

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

Oligozoospermia
Semen with a low concentration of sperm and is a common finding in male infertility.
Learn more at: www.fertilitypedia.org/therapy/diag/oligozoospermia
**Obstructive azoospermia**
Absence of sperm in the ejaculate despite normal spermatogenesis, caused by an obstruction of the genital tract.
Learn more at: [www.fertilitypedia.org/therapy(diag/obstructive-azoospermia](http://www.fertilitypedia.org/therapy(diag/obstructive-azoospermia)

**Oligoasthenoteratozoospermia**
Male fertility diagnosis defined as a combination of low sperm concentration, reduced motility and abnormal sperm morphology in the ejaculate.
Learn more at: [www.fertilitypedia.org/therapy(diag/oligoasthenoteratozoospermia](http://www.fertilitypedia.org/therapy(diag/oligoasthenoteratozoospermia)

**Cryptozoospermia**
Cryptozoospermia is a finding of rare spermatozoa (<500,000/ml) in seminal fluid after centrifugation.
Learn more at: [www.fertilitypedia.org/therapy(diag/cryptozoospermia](http://www.fertilitypedia.org/therapy(diag/cryptozoospermia)

**Organs**

**Prostate**
A walnut-sized structure that is located below the urinary bladder in front of the rectum.
Learn more at: [www.fertilitypedia.org/edu/organs/prostate](http://www.fertilitypedia.org/edu/organs/prostate)

**Seminal vesicles**
One of two simple tubular glands responsible for the production of about 60 percent of the fluid that ultimately becomes semen.
Learn more at: [www.fertilitypedia.org/edu/organs/seminal-vesicles](http://www.fertilitypedia.org/edu/organs/seminal-vesicles)

**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/organs/testes](http://www.fertilitypedia.org/edu/organs/testes)

**Reproductive cells**

**Spermatogonium**
An undifferentiated male germ cell with self-renewing capacity representing the first stage of spermatogenesis.
Learn more at: [www.fertilitypedia.org/edu/reproductive-cells/spermatogonium](http://www.fertilitypedia.org/edu/reproductive-cells/spermatogonium)

**Biological control**
**Testosterone**  
Steroid hormone produced primarily in the testes of the male; responsible for the development of secondary sex characteristics in the male.  
Learn more at: [www.fertilitypedia.org/edu/biological-control/testosterone](http://www.fertilitypedia.org/edu/biological-control/testosterone)

**Reproductive functions**

**Ejaculation**  
Discharge of the semen (usually containing sperm) from the male reproductive tract, normally accompanied by orgasm.  
Learn more at: [www.fertilitypedia.org/edu/reproductive-functions/ejaculation](http://www.fertilitypedia.org/edu/reproductive-functions/ejaculation)

**Fertilization**  
The fusion of an ovum with a sperm to initiate the development of a new individual organism.  
Learn more at: [www.fertilitypedia.org/edu/reproductive-functions/fertilization](http://www.fertilitypedia.org/edu/reproductive-functions/fertilization)

**Spermatogenesis**  
Process in which spermatozoa are produced from male primordial germ cells in testicles by way of mitosis and meiosis.  
Learn more at: [www.fertilitypedia.org/edu/reproductive-functions/spermatogenesis](http://www.fertilitypedia.org/edu/reproductive-functions/spermatogenesis)

**Symptoms**

**Abnormal semen pH**  
A pH value outside of the normal range which is harmful to sperm.  
Learn more at: [www.fertilitypedia.org/edu/symptoms/abnormal-semen-ph](http://www.fertilitypedia.org/edu/symptoms/abnormal-semen-ph)

**Low semen volume**  
A condition in which a man has an unusually low ejaculate (or semen) volume, less than 1.5 ml.  
Learn more at: [www.fertilitypedia.org/edu/symptoms/low-semen-volume](http://www.fertilitypedia.org/edu/symptoms/low-semen-volume)

**Therapies**

**Egg donation**  
Process by which a woman donates eggs for purposes of assisted reproduction or biomedical research.  
Learn more at: [www.fertilitypedia.org/edu/therapies/egg-donation](http://www.fertilitypedia.org/edu/therapies/egg-donation)
ICSI
A micromanipulative fertilization technique in which a single sperm is injected directly into an egg.
Learn more at: www.fertilitypedia.org/edu/therapies/icsi

Sperm donation
The procedure in which a man (sperm donor) provides his sperm for fertility treatment.
Learn more at: www.fertilitypedia.org/edu/therapies/sperm-donation

Standard IVF
A process in which an egg is fertilised by sperm outside the body: in vitro. Own or donated gametes may be used.
Learn more at: www.fertilitypedia.org/edu/therapies/standard-ivf

Sources
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