RETROGRADE EJACULATION

Dry Orgasm

The semen, which would normally be ejaculated via the urethra, is redirected to the urinary bladder.

Related Diagnoses:
- Azoospermia
- Erectile dysfunction
- Anejaculation
- Ejaculatory disorders
- Benign prostatic hyperplasia
- Aspermia
- Hypospermia
- Obstructive azoospermia
- Idiopathic male infertility

About Retrograde ejaculation

Normally, the sphincter of the bladder contracts before ejaculation forcing the semen to exit via the urethra, the path of least resistance. When the bladder sphincter does not function properly, retrograde ejaculation - one of the causes of male infertility, may occur. **Men often notice during masturbation that they do not have semen release but there is an orgasm. Therefore, retrograde ejaculation is sometimes referred to as a "dry orgasm."**

Another underlying cause for this phenomenon may be ejaculatory duct obstruction. During a male orgasm, sperm are released from the epididymis and travel via small tubes called the vas deferens. The sperm mix with seminal fluid in the seminal vesicles, prostate fluid from the prostate gland, and lubricants from the bulbourethral gland. During climax, muscles at the end of the bladder neck tighten to prevent retrograde flow of semen. In retrograde ejaculation, these bladder neck muscles are either very weak or the nerves controlling the muscles have become damaged (for anatomical details see the picture gallery).
Overall, anatomical causes can involve the bladder neck, for example by being rendered incompetent by transurethral resection of the prostate or bladder neck incision; the urethra, such as urethral stricture or posterior urethral valves; or the extrinsic sphincter, such as failure to relax. Neurogenic causes can be a result of disease such as multiple sclerosis, or injury such as spinal cord injury, or following surgery due to disruption of the innervations such as retroperitoneal lymph-node dissection, after abdomino-perineal resection, or sympathectomy. Various drugs can also prevent normal ejaculation, such as alpha-antagonists, antidepressants or antipsychotics.

The treatment of retrograde ejaculation is based on underlying aetiology. Anatomical causes, for instance, after prostate surgery, are rarely curable, and sperm harvesting from the urine should be considered if pregnancy is desired. Pharmacological causes are generally reversible by withdrawing the causative drug(s). Patients with neurological conditions may respond to alpha-agonists, which work by closing the bladder neck and thus promoting antegrade ejaculation. There have been some reports on the role of penile vibratory stimulation for the treatment of ejaculatory difficulties, although most have targeted those with anejaculation, such as in spinal cord injury, rather than retrograde ejaculation.

**Retrograde ejaculation can often be confused with anejaculation**, especially in case of orgasmic anejaculation, and they share some fundamental aspects of the etiology. Diagnosis is usually performed by urinalysis when urine is examined for the presence of semen, shortly after ejaculation. In cases of retrograde ejaculation, the specimen will contain an abnormal level of sperm. If there are no sperm in the urine, it may be due to damage to the prostate as a result of surgery or prior radiation therapy.

**Associated disease**

- ejaculatory duct obstruction
- multiple sclerosis
- spinal cord injury
- depression
- compression of parasympathetic nerves

**Complications**

- infertility

**Risk factors**

- transurethral resection
- prostate incision
- bladder neck incision
- spinal cord injury
- retroperitoneal lymph node dissection
Impact on fertility

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 transvaginal oocyte retrieval). The following procedure is IVF-ICSI.

Prevention

Ask your doctor if medications, which you take can caused retrograde ejaculation.

If you need to undergo surgery that can affect the bladder neck muscle (prostate or bladder surgery), there is risk of retrograde ejaculation. If you plan to have children in the future, you can preserve semen before the surgery in sperm bank.

Symptoms

- absence of ejaculation
- cloudy urine after orgasm
- infertility

Therapies
**Self therapy**

There is not any alternative therapy for this condition.

**Conventional medicine**

**Pharmacotherapy**

In pharmacotherapy are used substances which help the bladder neck muscle close during ejaculation. Following drugs are used:

- imipramine, a tricyclic antidepressant
- chlorpheniramine and brompheniramine, antihistamines sometimes used to treat cold symptoms
- ephedrine, pseudoephedrine and phenylephrine, used in decongestant medications such as Silfedrine, Sudafed and others

**Surgical therapy**

In surgical intervention goal is restoration of bladder neck integrity. It is possible to injected collagen into the bladder neck of a male to achieve antegrade ejaculation. For men with spinal cord injury, electroejaculation is primarily used to achieve ejaculation.

**Assisted reproduction**

If a couple is experiencing infertility as a result of retrograde ejaculation and medications are not helping, the male's urine with ejaculate may be centrifuged and the isolated sperm injected directly into the woman's oocyte during IVF-ICSI procedure.

In more severe cases, where are no sperm present, surgical retrieval methods (TESE, micro TESE, etc.) may be used.

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

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

Benign prostatic hyperplasia
A noncancerous increase in size of the prostate.
Learn more at: www.fertilitypedia.org/therapy/diag/benign-prostatic-hyperplasia

Aspermia
Male diagnosis connected with male infertility characterised by the complete absence of semen.
Learn more at: www.fertilitypedia.org/therapy/diag/aspermia

Hypospermia
A condition in which a man has an unusually low ejaculate (or semen) volume.
Learn more at: www.fertilitypedia.org/therapy/diag/hypospermia

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

Idiopathic male infertility
A condition in which fertility impairment occurs spontaneously or due to an unknown cause.
Learn more at: www.fertilitypedia.org/therapy/diag/idiopathic-male-infertility
Organs

Bulbourethral gland
Bulbourethral gland is one of two small exocrine glands in the reproductive system of male. Learn more at: www.fertilitypedia.org/edu/organs/bulbourethral-gland

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

Male urethra
A tube that connects the urinary bladder to the urinary meatus for the removal of fluids from the body. Learn more at: www.fertilitypedia.org/edu/organs/male-urethra

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

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

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

Urinary bladder
Hollow, expandable organ serving as a reservoir for urine prior to its expulsion from the body. Learn more at: www.fertilitypedia.org/edu/organs/urinary-bladder

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

Biological control
**Follicle-stimulating hormone**
FSH is a hormone secreted by the anterior pituitary gland. It regulates the development, growth, pubertal matur and reproductive functions of the body.
Learn more at: [www.fertilitypedia.org/edu/biological-control/follicle-stimulating-hormone](http://www.fertilitypedia.org/edu/biological-control/follicle-stimulating-hormone)

**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

**Erection**
The physiological process by which a penis becomes erect by being engorged with blood.
Learn more at: [www.fertilitypedia.org/edu/reproductive-functions/erection](http://www.fertilitypedia.org/edu/reproductive-functions/erection)

**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)

## Risk factors

**Abdominal surgery**
Surgical procedures that involve opening the abdomen.
Learn more at: [www.fertilitypedia.org/therapy/rf/abdominal-surgery](http://www.fertilitypedia.org/therapy/rf/abdominal-surgery)

**Antidepressants**
A broad group of drugs that are used in the treatment of depression and could negatively affect sexual function.
Learn more at: [www.fertilitypedia.org/therapy/rf/antidepressants](http://www.fertilitypedia.org/therapy/rf/antidepressants)

**Antipsychotics**
A class of medications prescribed to treat mental health issues involving psychosis or delusions and leading to hormonal imbalances.
Learn more at: [www.fertilitypedia.org/therapy/rf/antipsychotics](http://www.fertilitypedia.org/therapy/rf/antipsychotics)
Diabetes mellitus
A condition in which the body either does not produce enough, or does not properly respond to insulin, a hormone produced in the pancreas.
Learn more at: www.fertilitypedia.org/therapy/rf/diabetes-mellitus

Prostate surgery
A medical term for the surgical removal of all or part of the prostate gland.
Learn more at: www.fertilitypedia.org/therapy/rf/prostate-surgery

Prostatectomy
A medical term for the surgical removal of all or part of the prostate gland.
Learn more at: www.fertilitypedia.org/therapy/rf/prostatectomy

Spinal cord injury
A damage of the spinal cord that causes changes in its function, either temporary or permanent.
Learn more at: www.fertilitypedia.org/therapy/rf/spinal-cord-injury

Symptoms

Infertility
The failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse.
Learn more at: www.fertilitypedia.org/edu/symptoms/infertility

Lack of semen with ejaculation
Aspermia is the complete lack of semen with ejaculation.
Learn more at: www.fertilitypedia.org/edu/symptoms/lack-of-semen-with-ejaculation

Sexual frustration
A frustration caused by a discrepancy between a person’s desired and achieved sexual activity.
Learn more at: www.fertilitypedia.org/edu/symptoms/sexual-frustration

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
**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](http://www.fertilitypedia.org/edu/therapies/icsi)

**Laser-assisted immotile sperm selection**
Method, which uses a laser to identify viable sperm cell, recommended in MESA/TESA IVF cycles or in patients diagnosed with sperm immotility.
Learn more at: [www.fertilitypedia.org/edu/therapies/laser-assisted-immotile-sperm-selection-1](http://www.fertilitypedia.org/edu/therapies/laser-assisted-immotile-sperm-selection-1)

**Pharmacotherapy of retrograde ejaculation**
Medications used to treat retrograde ejaculation.
Learn more at: [www.fertilitypedia.org/edu/therapies/pharmacotherapy-of-retrograde-ejaculation](http://www.fertilitypedia.org/edu/therapies/pharmacotherapy-of-retrograde-ejaculation)

**Postejaculatory urine sperm isolation - with ICSI**
A non-invasive method of the sperm isolation in the case of retrograde ejaculation.
Learn more at: [www.fertilitypedia.org/edu/therapies/postejaculatory-urine-sperm-isolation-with-icsi-1](http://www.fertilitypedia.org/edu/therapies/postejaculatory-urine-sperm-isolation-with-icsi-1)

**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](http://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](http://www.fertilitypedia.org/edu/therapies/standard-ivf)

**Surgical therapy of retrograde ejaculation**
Surgery used to treat retrograde ejaculation.
Learn more at: [www.fertilitypedia.org/edu/therapies/surgical-therapy-of-retrograde-ejaculation](http://www.fertilitypedia.org/edu/therapies/surgical-therapy-of-retrograde-ejaculation)

---

**Gallery**
Prostatic urethra

Internal sphincter of prostatic urethra, which closes after ejaculation to prevent retrograde ejaculation.

Sources

“Retrograde ejaculation following open ureteric reimplantation: a case report” —by Au et al. licensed under CC BY 3.0

“Retrograde ejaculation” —sourced from Wikipedia licensed under CC BY-SA 3.0

“Sperm preparation for ART” —by Henkel and Schill licensed under CC BY 4.0

“Intracytoplasmic sperm injection” —sourced from Wikipedia licensed under CC BY-SA 3.0

“Membranous urethra” —by Mcstrother licensed under CC BY 3.0