



Europe  
IVF

# Andrology

Part of the Treatment Guide series of brochures



Attention:

The information provided in this brochure should not be used as a substitute for information or advice provided by a doctor. Your doctor can help you choose the best option for you.

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# Introduction

Andrology is a medical field that specialises in male health, particularly reproductive and urological issues. In the context of reproductive medicine, andrology plays a key role in addressing male fertility issues and providing comprehensive care for couples trying to conceive.

The goal of andrology is to help men live a healthy and happy life.

Andrology plays an important role in IVF (in vitro fertilisation) because it addresses male factors that can affect a couple's fertility.

## What tests are performed?

Andrology focuses on the diagnosis and treatment of disorders of the male reproductive system, including:

- Infertility
- Erectile dysfunction
- Low testosterone levels
- Hormonal imbalances
- Varicoceles
- Infections and inflammation of reproductive organs

Andrology plays a key role in IVF (in vitro fertilisation) by ensuring that male fertility factors are carefully tested, diagnosed and properly treated. A detailed description of each aspect is provided on the following page:

## 1 Semen analysis

**Sperm count test:** This is the main test that evaluates sperm count, motility and shape (morphology). The results of this test help determine whether the sperm are capable of fertilising the egg naturally, or whether assisted reproduction is needed.

## 3 Diagnosis and treatment of fertility disorders

**Hormone testing:** Andrologists can perform hormone tests to determine the levels of hormones such as testosterone, LH, and FSH that affect sperm production. Imbalances can be treated with hormone therapy.

**Varicocele treatment:** Varicoceles, enlarged veins in the scrotum, can affect sperm quality. Surgical repair of varicoceles can improve fertility.

**Infections and inflammation:** Andrologists treat infections or inflammation of the reproductive organs that can negatively affect sperm production.

## 2 Genetic testing

Some men may suffer from genetic problems that affect fertility. Andrologists may recommend genetic testing of sperm to detect any chromosomal abnormalities or mutations.

## 4 Treatment of male infertility

**Pharmacological treatment:** If a hormone imbalance is detected, an andrologist can prescribe drugs to help normalise hormone levels and improve sperm production.

**Sperm collection methods:** An andrologist performs procedures such as TESE or MESA that allow sperm to be obtained directly from the testicles or epididymis in cases where they are not present in the ejaculate.





## 5 Cooperation with an embryologist

**ICSI:** Intracytoplasmic sperm injection is a method in which a single sperm is injected directly into the egg. The andrologist works with an embryologist to select the best quality of sperm for this process.

**Cryopreservation:** Sperm collected in andrological procedures can be frozen for future use, which is convenient for planning multiple IVF cycles.

**TESE (testicular sperm extraction):** If sperm are not present in the ejaculate, they can be surgically collected directly from the testes.

Laboratories are constantly improving as embryologists and andrologists introduce new methods and technologies that increase the success rate of IVF. This includes advanced methods for selecting sperm of the best quality.

## 6 Consultation and counselling

**Psychological support:** The IVF process can be stressful. Andrologists and other professionals provide emotional support and counselling to help couples navigate this challenging process.

Couples are informed about all aspects of male fertility, treatment options and chances of IVF success, helping them make informed decisions.

## 7 Support in sperm donation

**Donor screening:** If a couple needs donor sperm, andrologists screen and test the donors to ensure the quality and safety of the donated sperm.



## Semen analysis

A sperm count test is a basic diagnostic test that evaluates male fertility. It examines various semen and sperm parameters that can affect a man's ability to father a child. The main parameters evaluated in a sperm count test are:

- **Ejaculate volume:** The amount of ejaculate is measured in milliliters (ml). The normal volume is between 1.5 and 5 ml. A low volume may indicate problems with sperm production or release.
- **pH:** The pH value of semen should be slightly alkaline, usually in the range of 7.2 to 8.0. Abnormal pH may indicate infections or other problems in the reproductive system.
- **Sperm concentration:** This parameter indicates the sperm count per millilitre of ejaculate. A normal concentration is at least 15 million sperm per ml. A low concentration, known as oligospermia, can affect fertility.
- **Total sperm count:** The total sperm count in the ejaculate should be at least 39 million. This parameter combines ejaculate volume and sperm concentration.
- **Mobility:** The percentage of sperm capable of active movement is evaluated. The sperm count test distinguishes between progressive motility (moving forward), non-progressive motility (moving without progress) and immotile sperm. It is normal when at least 32% of the sperm show progressive movement.
- **Morphology:** This parameter evaluates the shape and structure of the sperm. It is normal when at least 14% of the sperm have a normal shape according to

to Kruger's strict criteria. Abnormal sperm shapes can affect their ability to fertilise an egg.

- **Vitality (viability):** The percentage of live sperm in the sample is determined. This test is especially important in cases where sperm motility is low.
- **Presence of leukocytes:** A high number of white blood cells (leukocytes) in the ejaculate may indicate an infection or inflammation in the reproductive system.
- **Viscosity and liquefaction time:** The viscosity of the ejaculate and the time required for liquefaction (usually up to 30 minutes) are assessed, as high viscosity or prolonged liquefaction can affect sperm motility.
- **Agglutination:** Agglutination is when sperm collects into clumps due to immune reactions or infections, and it can negatively affect sperm motility.

A sperm count test provides a complete picture of a man's fertility and helps identify issues that may be preventing natural conception. This test is a key step in diagnosing male infertility and planning the right treatment.

## Hormone profile

A hormone profile is a set of laboratory tests that measure the levels of various hormones in a man's body. These tests are key to diagnosing and treating a variety of conditions, including infertility, hormone imbalances, and other health problems. Here are the main hormones included in a male hormone profile:

- **Total testosterone:** This test measures the total level of testosterone in the blood. Normal values are between 300-1000 ng/dL.
- **Free testosterone:** This test measures the amount of testosterone that is not attached to proteins in the blood and is available for tissues. Normal values are 50-210 pg/ml.
- **Follicle-stimulating hormone (FSH):** FSH is important for sperm production. Normal FSH levels in men are 1.5-12.4 mIU/ml. High levels of FSH may indicate problems with the testicles, while low levels may indicate disorders of the pituitary gland.
- **Luteinizing hormone (LH):** LH stimulates the production of testosterone in the Leydig cells of the testes. Normal LH levels are 1.8-8.6 mIU/ml. Abnormal levels may indicate problems with the pituitary gland or testicles.



- **Prolactin:** Prolactin is usually measured when symptoms such as decreased sex drive or infertility are present. Normal values are 2-18 ng/ml. Elevated prolactin levels may indicate problems with the pituitary gland, such as prolactinoma.
- **Oestradiol:** Although oestradiol is the main female sex hormone, it is also present in men and can affect testosterone balance. Normal oestradiol levels in men are 10-40 pg/ml. Elevated levels may be associated with gynaecomastia (enlarged breasts).
- **Sex hormone-binding globulin (SHBG):** SHBG binds to testosterone and oestradiol in the blood. SHBG levels can affect the amount of free (active) testosterone. Normal SHBG levels in men are 10-57 nmol/l.

A hormone profile helps doctors identify causes of infertility, hormone imbalances and other health issues, such as hypogonadism (insufficient testosterone production) or problems with the pituitary gland. Specific treatments may be recommended based on the results of these tests, which may include hormone therapy, lifestyle changes, or surgery.





# TESE/MESA

TESE and MESA are important methods for couples struggling with male infertility. These methods can be used to collect sperm for ICSI (intracytoplasmic sperm injection). In ICSI, the sperm is injected directly into the egg, which significantly increases the chances of fertilisation, especially for couples with serious male fertility problems. These techniques can be a crucial step on your journey to conception.

TESA (testicular sperm aspiration) and MESA (microsurgical epididymal sperm aspiration) are specialised methods of collecting sperm for assisted reproduction. These methods are used when it is not possible to collect sperm naturally, e.g. in the case of azoospermia (absence of sperm in the ejaculate).

## 1 TESE (testicular sperm extraction)

Testicular sperm extraction (TESE) is a surgical method used to collect sperm directly from the testicles, particularly in men with azoospermia, when there are no sperm in the ejaculate due to blockages or insufficient production. This method is particularly effective in men with obstructive azoospermia, where sperm production is normal but sperm are blocked. The success rate in obtaining viable sperm through TESE ranges between 35% and 50%.

TESE offers hope to couples facing severe male infertility, enabling the use of the collected sperm in assisted reproduction methods such as IVF with intracytoplasmic sperm injection (ICSI).

## 2 MESA (microsurgical epididymal sperm aspiration)

MESA is a more complicated method used in obstructive azoospermia, where sperm are produced in the testicles but cannot reach the ejaculate due to a blockage in the epididymis or vas deferens. This method requires microsurgery to retrieve sperm from the epididymis and is performed under general anaesthesia. MESA offers a higher chance of obtaining high-quality sperm in men with obstructive azoospermia and, compared to TESA, allows for a larger quantity of sperm to be obtained.

TESA and MESA are important methods for retrieving sperm in cases of male infertility that cannot be solved by other methods. These methods allow couples with male factor infertility to successfully undergo IVF and conceive. If you have additional questions or need more information, consult your andrologist or fertility specialist.

## Conclusion

Andrology is a key reproductive medicine field that helps couples overcome male infertility. Thanks to advanced diagnostic and treatment methods, specialists are able to offer effective solutions and increase your chance of a successful pregnancy. If you are facing infertility, don't hesitate to seek out professional help and take advantage of the modern methods and technologies offered by andrology. A sperm count test and hormone tests are the first steps to diagnosing potential problems. If you are unable to conceive naturally, you can try out assisted reproduction such as IUI or IVF-ICSI.

I hope this guide provides useful information and helps you understand the role of andrology in reproductive medicine. If you have any other questions or you need more information, contact us and schedule a meeting with one of our fertility specialists.

## Are you ready to take the first step?

If you're ready, you can book your first appointment at our clinic. Our coordinators will arrange an in-person meeting, video meeting or phone call. You can contact us during normal business hours, or we can arrange a time that suits you best.

## Book a consultation with one of our fertility specialists

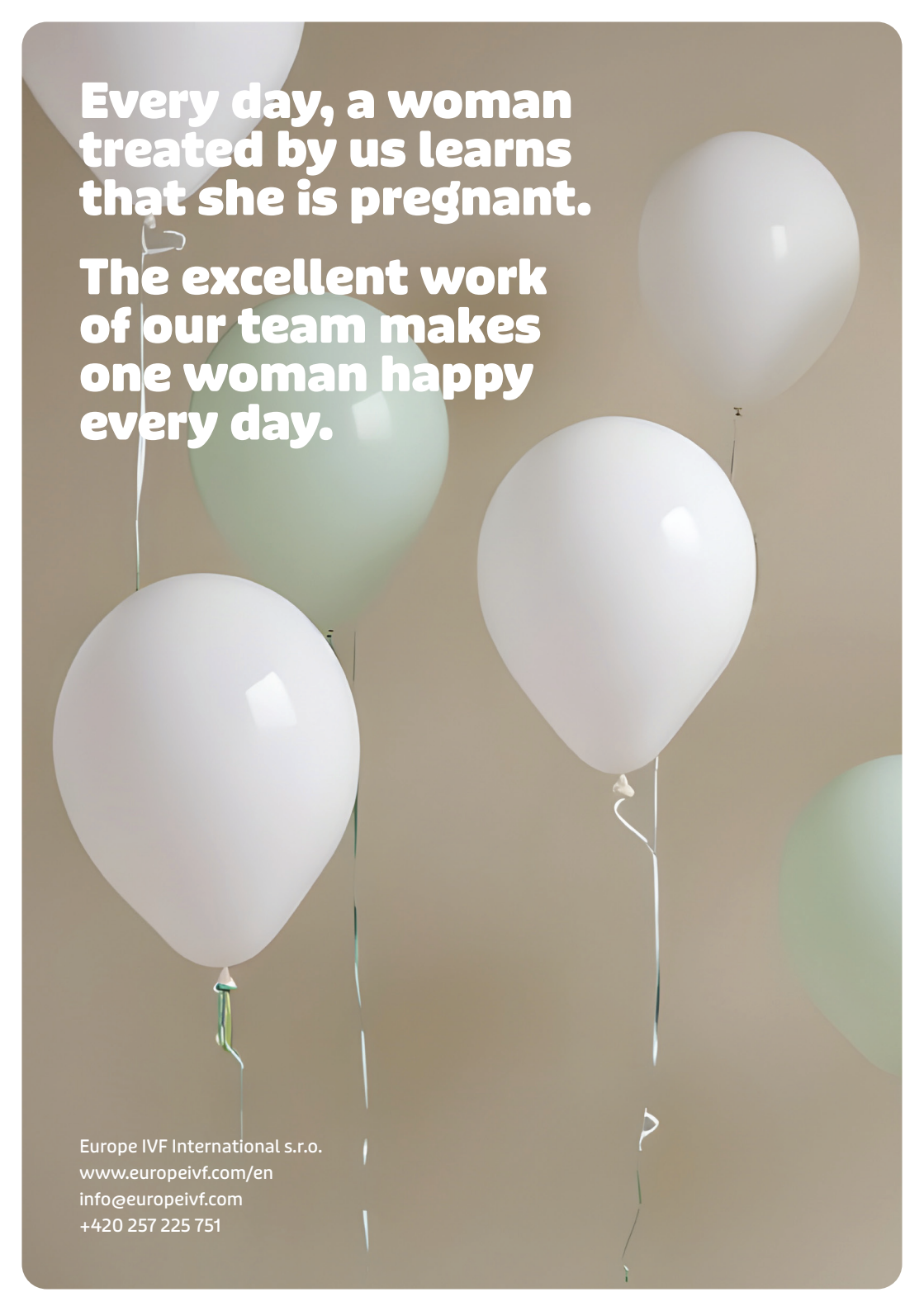


Europe IVF International s.r.o.  
[www.europeivf.com/en](http://www.europeivf.com/en)  
[info@europeivf.com](mailto:info@europeivf.com)  
+420 257 225 751

**If you have any questions,  
ask us.**



You dream. We care.

The background of the entire page is a solid light beige color. Scattered across this background are several balloons. There are four white balloons and two light green balloons. The balloons are of various sizes and are positioned at different heights and locations. Some have thin white strings attached, which hang down. The overall effect is a soft, celebratory atmosphere.

**Every day, a woman  
treated by us learns  
that she is pregnant.**

**The excellent work  
of our team makes  
one woman happy  
every day.**

Europe IVF International s.r.o.  
[www.europeivf.com/en](http://www.europeivf.com/en)  
[info@europeivf.com](mailto:info@europeivf.com)  
+420 257 225 751