

## Spermogram, its Content Control and Normal Indicators

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### ABSTRACT

*This article discusses the process of spermogram production in men, its composition and analysis, the importance of the number in the birth of a child.*

**KEYWORDS:** *Spermogram, ejaculation, vaginal sex, oligozoospermia, gglutination.*

Spermogram - a detailed analysis of sperm, examination of a man's ejaculation (sperm) under a microscope. This is a basic and actually unique analysis that allows you to assess a man's ability to conceive a child. However, it should also be noted that any deviation from the norm of spermogram readings may mean that conception is completely impossible. Any deviation from the norm of spermogram indices can only naturally lead to a decrease in the probability of conception, but in no case can it lead to the complete absence of such a probability.

The most common cause of male infertility is loss of motility by sperm. Changes in the physical properties of ejaculation, sperm morphology, the presence of foreign elements in ejaculation, changes in chemistry also lead to a decrease in fertility.

How to prepare for sperm analysis?

The main recommended method of obtaining sperm for research is masturbation ... When collecting sperm for analysis, all seeds released during ejaculation, including the first and last part, should be collected in a wide-necked sterile plastic container. The reliability of sperm analysis depends directly on the time it takes for the container with the sperm to be delivered to the laboratory, as well as the conditions of transport. Preferably, the sperm container is delivered to the laboratory within 20 minutes after ejaculation. The container should indicate the exact time of ejaculation. The sperm vessel should be protected from the extreme effects of temperature. During transport, the jacket should be placed in an inner breast pocket to keep the sperm vessel temperature close to body temperature. The ideal condition for collecting sperm for analysis is a separate room next to the laboratory, where further research is conducted.

It is not recommended to take sperm for research:

- interrupted vaginal sex;
- verbal communication;
- Sex in a latex condom.

Vaginal secretions, saliva and latex components in condoms can adversely affect sperm quality, leading to distortion of the test result.

You should avoid ejaculation for 2 days before taking sperm for research. To achieve an objective and reliable result, sperm testing should be performed four times at 2-week intervals. It is permissible to perform sperm analysis twice at 4-week intervals. However, if anomalies are detected in at least one of these two studies, the sperm study should be repeated at least twice.

#### Rang

Norm: white, gray, yellow.

The appearance of a red or brown shade of ejaculation may be associated with a mixture of blood in the sperm, which occurs with genital injury, chronic vesiculitis, a calculous form of prostatitis. Yellow sperm can be caused by food dyes or certain medications. In this case, this indicator does not have a large diagnostic value.

Norm: 7.2 - 8.

Deviations from normal pH may be associated with inflammation of the gonads, primarily prostatitis or vesiculitis.

#### Liquefaction time

Norm: up to 60 minutes.

Increased liquefaction time may be the result of long-term chronic inflammation of the gonads - chronic prostatitis or vesiculitis. In rare cases, an increase in liquefaction time is associated with enzyme deficiency in the body. As a result of increased liquefaction time, sperm cells maintain their full motility longer. This causes them to have longer contact with the acidic environment of the vagina, which drastically reduces their chances of entering the uterus and fertilizing. This indicator of the spermogram is directly related to the probability of conception.

#### Sperm viscosity

The viscosity of the sperm is determined by the length of the filament from which the sperm is formed when draining from a pipette or special needle. The length of the string is measured in centimeters.

Norm: 2 cm each.

Increased sperm viscosity is often associated with chronic inflammation of the gonads - prostatitis and vesiculitis. Increased sperm viscosity leads to difficulty in the movement of sperm in the vagina, prolonged contact of the vagina with the acidic environment, which significantly reduces the likelihood of fertilization. This spermogram index is directly related to the probability of conception.

#### Sperm concentration

Norm: more than 15 million in 1 ml of ejaculate.

A decrease in sperm concentration is called oligozoospermia. Often, oligozoospermia indicates a decrease in testicular efficiency, which may be associated with a decrease in the level of male sex hormones in the blood, the inflammatory process in the testicles, inflammation or toxic damage to the spermatogenic epithelium of the testes. immunity, changes in metabolism and other factors. The reasons for the decrease in sperm concentration are not fully understood. this indicator of the spermogram is one of the most important, which is naturally directly related to the probability of conception.

Some laboratories are considering a rate of polyzoospermia - an increase in sperm concentration above 120 million / ml. A number of patients have the idea that polyzoospermia is a precursor to oligozoospermia. Patients with polyzoospermia are expected to be monitored by an andrologist and

require periodic monitoring of spermograms. However, such a result does not currently affect the possibility of fertilization.

#### Number of sperm

Norm: more than 39 million in ejaculation.

The reasons for the decrease in sperm are the same as the reasons for the decrease in their concentration.

#### Sperm motility

Sperm motility is also one of the most important indicators of a spermogram, the outcome of which naturally affects the likelihood of pregnancy. Depending on their motility, sperm are divided into 4 groups.

Group A- Active moving with linear motion.

Group B- motionless with linear motion.

Group C - motionless with vibration or rotational motion.

Group D- motionless.

Norm:  $A > 25\%$  or  $A + B > 32\%$ .

Decreased sperm motility is called asthenozoospermia. Its causes are very diverse - from various diseases (inflammatory diseases of the gonads, varicocele, etc.) to various types of toxic and thermal effects on the testicles. There is an opinion that the defeat of ureaplasma - a sexually transmitted infection - leads to a decrease in mobility. However, the ability of ureaplasma to directly affect sperm and reduce their ability to move has not been proven.

#### Sperm morphology

This figure reflects the percentage of normal forms of sperm capable of fertilization. This figure is directly related to the likelihood of becoming pregnant naturally.

Norm: more than 4%.

A decrease in the number of normal forms of sperm is called teratozoospermia. This is often accompanied by toxic and radiation damage to the scrotal organs, less often by inflammation or previous infections. The morphology of sperm is strongly influenced by the ecology of the human habitat.

#### Live sperm

The proportion of live sperm in ejaculation. This figure is directly related to the ability to conceive naturally.

Norm: more than 50%.

A decrease in the number of live sperm is called necrospermia. This is primarily due to radiation, toxic or thermal damage to the testicular tissue, less common infections, and inflammation of the gonads. There is evidence that instantaneous necrospermia can lead to intense stress.

#### Spermatogenesis cells

These are desquamated cells of the spermatogenic epithelium of the seminiferous tubules of the testicles.

Norm: 2-4 for 100 sperm.

An increase in the number of spermatogenesis cells indicates an inflammatory, infectious, or other lesion of testicular tissue, indicating a secretory form of male infertility.

#### Agglutination

Agglutination is the adhesion of sperm to each other.

Norm: no.

The appearance of agglutination of sperm can be a manifestation of disorders of the immune system, autoimmune inflammatory processes. Also, agglutination can manifest itself in chronic inflammatory processes in the male gonads. The appearance of agglutination does not reduce the likelihood of spontaneous conception, but almost always leads to a decrease in sperm motility.

#### Merge

Aggregation is the accumulation of sperm in large clots.

Norm: no.

Sperm accumulation can occur with prolonged chronic inflammation of the gonads, often occurring simultaneously with an increase in liquefaction time and ejaculation viscosity. Spontaneous aggregation does not affect the likelihood of conception, but clear aggregation can dramatically disrupt sperm motility.

#### Leukocytes

*There should be a certain amount of white blood cells in the ejaculate.*

*Norm: up to 106 per 1 ml (3 - 4 in the field of view).*

*An increase in the number of leukocytes is a sign of an acute or chronic inflammatory process in the male pelvic organs. By itself, this does not naturally affect the chances of getting pregnant, but it often worsens almost all other indicators of the spermogram.*

#### Erythrocytes

*Red blood cells in the blood.*

*Norm: no.*

*The appearance of red blood cells during ejaculation can be a sign of trauma, tumors of the genital organs, prostate stones, the presence of chronic prostatitis or vesiculitis. The indicator does not naturally affect the ability to conceive, but it can be a sign of serious disease of the pelvic organs.*

#### Amyloid bodies

*Specific formations formed in the prostate gland.*

*Norm: available.*

*The absence of amyloid cells may be evidence of decreased prostate function, which is often found in its long-term chronic inflammation. This figure does not directly affect the ability to conceive naturally.*

#### Lecithin grains

*Lecithin granules are produced by the prostate gland.*

*Norm: available.*

*The absence of lecithin granules in ejaculation indicates a decrease in prostate gland function,*

which is possible with its prolonged chronic inflammation. This figure does not directly affect the probability of a natural conception.

*Mucous*

*Norm: no or small amount.*

*Large amounts of mucus are often manifested by a clear inflammatory process of the gonads.*

*If spermogram readings do not meet the norm, you should seek the advice of an andrologist.*

*A spermogram is an analysis of the fluid that a man excretes during ejaculation (orgasm). Sperm contains sperm and semen. This analysis is used to assess a man's health and his ability to have children.*

Spermogram, if the couple has a regular sex life, they are unprotected, but can not have children for a year. Donors are also sperm donors during the IVF procedure (sperm cryopreservation).

This analysis is required after past illnesses that may affect men's health. These include: prostatitis, hormonal disorders, genital trauma, sexually transmitted infections.

The test can be prescribed when planning a pregnancy or when a man wants to check a man's health. Thus, there are no contraindications to the procedure. There are only recommendations: on the day of sperm donation, you should not perform any other analysis of the urinary tract.

If within a day they plan to take blood from a vein and a spermogram, they first donate blood and then sperm. If a man has inflammatory diseases (ARVI, ARI) and the temperature is above 37 o C, do not conduct a study.

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