

Any change in lifestyle or diet can take 10-12 weeks to show an improvement in sperm function.

Parameters measured in sperm function tests

1. **Semen Volume:** The semen volume is the amount of fluid, millilitre (ml) produced and the normal range is 1.5 to 5 ml. Reduced volumes occur if part of the specimen misses the collecting pot, or in certain disorders of the “accessory” sexual glands ie prostate gland and seminal vesicles. Increased volume may occur with current or previous infection of the prostate gland.
2. **Sperm density:** The normal level is at least 15 million per ml of semen with a total of 40 million in the ejaculate. Levels up to 250 million/ml can be seen. The average is around 50 million/ml.
3. **Sperm motility:** The best sperm are progressively motile (forward moving) and the normal result is at least 32% progressive.
4. **Sperm morphology:** Morphology is the physical appearance of the sperm. A normal sperm sample has at least 4% normal forms (using very strict criteria). Consistently poor morphology analysis may indicate a problem.
5. **Inflammatory cells (White blood cells):** An increased number of white blood cells suggests some inflammation within the male sexual organs, which may (or may not) be related to infection. If increased numbers of inflammatory cells are observed, you may be asked for a semen sample for culture, to detect infection, and you may be given an antibiotic. A second antibiotic may be required if the inflammatory cells persist.
6. **Agglutination:** This is where sperm stick together so they cannot travel in the usual way. Up to 5% agglutination may be seen in the normal sample. 6% agglutination, or more, is abnormal and can occur with inflammation or anti-sperm antibodies, especially after surgery, infection or injury of the male sexual organs, particularly vasectomy.
7. **Blood in the semen:** This is nearly always abnormal and usually requires referral to a Urologist. You should inform the clinic if you cut or damage your penis when producing a sample.
8. **Sperm swim-up (SUP):** This portion of the test looks at the ability of the sperm to swim against gravity in a special culture medium. A normal swim up has at least 8 million/ml sperm present with 80% rapidly motile sperm.

Why might my sperm test be abnormal?

All men produce abnormal sperm tests at some point in their lives. Temporary factors that can lead to abnormal results are:

1. Inadequate or excessive abstinence from ejaculation prior to the test
2. Acute or chronic stress

3. Any illness, infection, injury or operation, but especially involving the male sexual organs, and especially with a high temperature. Even a heavy cold or “flu” can affect sperm function for up to 10 weeks.
4. Wearing tight underwear, sitting or driving for long periods (2 hours or more) or a hot environment
5. Exposure to chemicals, e.g. industrial occupations/farming
6. Recreational drugs including alcohol, tobacco or cannabis
7. Pharmaceutical drugs, especially drugs used in cancer treatment, some antacids e.g. Tagamet and some blood pressure drugs eg Propranolol
8. Diet: The normal western diet is high in carbohydrate and fat and low in certain important elements, such as zinc and selenium
9. “Normal” variation: because of this **at least** 2 tests are always requested, usually 8 weeks apart.
10. Unexplained – Frequently there is no obvious cause found for abnormal sperm function tests.

What can I do if I have had an abnormal sperm function test or 2 very different tests?

This may be just a normal variation and so you should wait for the next test. However, you should try to lead as healthy a lifestyle as possible in the weeks leading up to the next test **and** while trying to conceive. Improved lifestyle measures are detailed below.

What can I do if all or most of the sperm function tests are abnormal?

In this situation, provided there are some sperm, a spontaneous pregnancy is possible, though the fewer sperm in the sample and the lower the overall quality, the lower the chance of pregnancy. You should lead as healthy a lifestyle as possible and further sperm tests may be requested to determine if there is improvement.

Occasionally, other investigations may be required, including:

- A scrotal ultrasound, if a varicose vein is suspected
- a semen sample for culture, if inflammatory cells are seen
- a sperm antibody test, if there is “agglutination” of sperm
- blood tests for hormones and chromosomes when there are very few, or no sperm in the semen.

LIFE-STYLE ADVICE TO MEN WHO HAVE HAD ONE OR MORE ABNORMAL SPERM FUNCTION TESTS

Sperm take 8-10 weeks to mature and so any adverse factor, eg “flu”, a heavy cold, a testicular injury or operation, exposure to chemicals or drugs (including a single episode of excessive alcohol) can affect sperm production

for up to 3 months. Conversely, any improvement in lifestyle can take 8-10 weeks to produce an improvement in sperm function tests and sperm fertilising ability.

Recommended Lifestyle Measures

1. Healthy diet, high in green vegetables and fruit and nuts
2. Stop smoking completely and avoid smoky atmospheres (ie passive smoking).
3. Reduce alcohol to less than 5 units a week, spread across the week. Preferably do not drink
4. Do not take recreational drugs
5. Reduce or eliminate caffeine intake. Caffeine has been associated with reduced pregnancy rates at IVF.
6. Wear loose boxer-style underwear and avoid hot baths and hot environments such as saunas and steam rooms.
7. Avoid sitting/driving for long periods. Try to take hourly breaks - 2 hours of driving heats scrotum (and testicles) by 2°C.
8. Take vitamin C (up to 1000mg daily), vitamins A&E, zinc and selenium (recommended daily allowance)
9. Avoid inhaling, or direct contact with noxious chemicals, eg organic solvents and organophosphate pesticides. You may need to wear a mask or protective gloves.
10. Try to reduce stress: A consultation with the fertility counsellor may be beneficial to develop stress reducing strategies.
11. Mention to your Fertility Doctor, Scientist or Nurse, any pharmaceutical drugs you are taking - they may affect sperm function.

Sperm Function Test Results & Lifestyle Advice To Men Who Are Trying To Conceive

SPERM FUNCTION TEST RESULTS

Introduction

Sperm tests are required to assess male fertility. The results can vary considerably and so, to try to give an accurate assessment, you are asked not to ejaculate for 3 to 5 days before producing your sample for analysis.

It takes a sperm 3 months to mature, and any adverse factor during that time can damage sperm maturation for up to 12 weeks. Examples of adverse factors are detailed in the section below entitled “Why might my sperm test be abnormal?”

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