

### Testing for Male Factor Infertility

In the investigation of infertility it is necessary to determine whether sperm defects are contributing to the infertility. Up to 30% of couples being investigated for infertility will have some degree of abnormality in the male partner's semen.

As part of the initial investigation of infertility the doctor will enquire into the previous medical and surgical history of the male. It is of value to know whether he has ever fathered a child in the past and whether he has any current or previous illnesses or operations which could have an effect on the production and delivery of sperm. Other information of value is whether the male is on any prescribed medications or any self-administered drugs such as tobacco, marijuana or alcohol which are known to affect sperm numbers and motility. A semen analysis is then performed, ideally on a fresh specimen collected by masturbation 2-3 days after the last ejaculation. On delivery of the specimen to the laboratory a number of questions must be answered to enable correct interpretation of the findings:

**Time of Collection:** The motility of the sperm decreases with time and analyses should be performed within two hours of collection of the semen specimen.

**Date of Last Ejaculation:** Specimens collected after less than two days sexual abstinence will show reduced volume and sperm numbers. With greater than 5-6 days abstinence the percentage of motile sperm may be reduced.

**Transport Temperature:** Exposure to temperatures less than 15°C or greater than 37°C can reduce sperm motility. The specimen should be kept at body temperature.

**Method of Collection:** Semen specimens collected by interrupted intercourse may suffer unrecognised specimen loss or contamination with vaginal secretions. Masturbation is the preferred method of collection.

**Any Loss of Specimen?** Loss of any of the first part of the ejaculate can result in a specimen with apparent reduced sperm numbers while loss of any of the second part can give a falsely high impression of the sperm concentration.

#### **Routine Semen Analysis**

Initially the specimen is assessed for its volume and consistency. A normal semen sample will have a volume of between 2 ml and 5 ml. Although it coagulates at the time of collection it should liquefy over the next 15-20 minutes.

It is then assessed microscopically to determine:

- the sperm density or count - the number of sperm
- the sperm motility - the % moving and how well they are swimming
- the sperm morphology - the % of normally shaped sperm
- the presence of other abnormal cells, bacteria, and any agglutination or sperm "clumping".

#### **Further Optional Tests**

**Sperm Vitality** - this may be done if the percentage of motile sperm is low to determine whether the sperm are dead or alive.

**Anti-Sperm Antibodies** - to detect antibodies bound to sperm which can reduce their ability to reach and fertilize an egg.

**Strict Morphology Evaluation** - the analysis of abnormally shaped sperm to predict the likelihood of their being able to fertilize an egg.

**Hormone Analysis** - In cases of severe semen abnormalities, blood tests for male reproductive hormones may be performed.

#### **Semen Collection Problems**

We assume that the specimen that a man can produce into a specimen bottle is similar to that which he can deposit into his partner's vagina during sexual intercourse. If any of the specimen is lost during collection the result can give a wrong impression and therefore it is important to note whether any of the specimen was lost.

Not every man can produce a representative specimen by masturbation. If you think that you are likely to encounter problems you should discuss the matter with your doctor or a scientist beforehand. Fertility Gold Coast has a leaflet on *Semen Collection Problems* available from the Fertility Gold Coast Office. We have ways to work around almost every problem.

Recent illness can significantly affect sperm production which takes almost 3 months. If you have suffered any illness or received any medical treatments in the past 3 months it may be worth deferring the semen analysis until a new generation of unaffected sperm are being ejaculated. If this is your situation you should speak to your doctor or a scientist first.

#### **The Predictive Ability of a Semen Analysis**

No semen analysis can accurately predict the ability of a sperm to reach and fertilize an egg. The best that it can do is give an impression of what is most likely to occur. Ultimately the only test is to put the best sperm available from the male with the eggs of the female as we do in conventional IVF to see if fertilization occurs. Options for the treatment of male infertility are discussed in an information leaflet entitled *Male Infertility* available from the Fertility Gold Coast Office.