Fertility GOLD COAST
GYNAECOLOGY • IVF • PREGNANCY

Semen Collection Problems and Ejaculatory Abnormalities

The investigation of infertility requires, relatively early in the course of events, that one and sometimes several semen samples be produced to determine whether the sperm parameters within the semen, their numbers, motility and appearance, are within normal limits. For optimal analysis these samples must be less than an hour or two old and be produced at an appointed time.
In any assisted reproduction procedure there is again a requirement for fresh complete ejaculates to be collected at a particular time for preparation by the laboratory.
The diagnosis and treatment of infertility therefore requires that the male partner be able to reliably produce semen samples at designated times, often in an unfamiliar environment, and often without access to assistance from his partner.

Specimen Requirements

If possible we prefer the specimen to be collected at home and it should reach the laboratory within an hour of collection for the most accurate analysis. If this is not possible a specimen up to two hours old is most probably acceptable. It should be collected into a sterile bottle supplied by the laboratory or your doctor and kept at body temperature (definitely NOT refrigerated) until it reaches the laboratory. Unless you are advised otherwise by your doctor the minimum period of sexual abstinence is usually two days for treatment procedures and three days for a semen analysis.

Preferred Collection Technique

Masturbation is the preferred method and lubricants, particularly oils, should not be used.
While most men are able to collect specimens this way a significant number do have problems and it is important that these problems be recognised and some solution or alternative be employed.
If the specimen is required for an assisted reproduction treatment, and you envisage a potential problem, then you should talk to both your doctor and the scientist prior to treatment about the problem. We encounter this problem frequently and have a range of alternative approaches to obtain a specimen.

Alternative Approaches to Collection Counselling

Taking a more relaxed approach to semen collection often helps. Your doctor, the IVF Support Sisters, the scientists, and Fertility Gold Coast's consultant psychologist are all available to talk over all the options with you.Talking over the problem openly with people acquainted with all the options may help resolve it.

Partner Assistance

Reproduction, whether natural or assisted, involves you as a couple and it is a sensible approach to regard the collection of semen as something to be shared.

Interrupted Intercourse

This is not a method that we advocate because the specimen can become contaminated with vaginal secretions and it is not unusual for the first part of the ejaculate (the sperm-rich portion) to be lost.
Nevertheless, if this is the only method that will work, then we are willing to go along with it.

Condoms

Conventional condoms, developed as contraceptives, should **not** be used. They frequently are coated with spermicides which kill the sperm and the chemicals in the rubber are often toxic to embryos in vitro.
The occasional couple does however find the concept of having to interrupt intercourse to be an impediment to a successful ejaculation and for them we have condoms specially developed for semen collection. After intercourse the contents of the condom are emptied into a specimen bottle. These condoms are available from our Office for around $20.

Semen Freezing for Assisted Reproduction Procedures

If the husband normally has good quality semen it may be possible to collect some at a more relaxed time before the procedure and store it frozen. As the freeze/thaw process causes some damage to the sperm it is not an option for marginal or sub-standard quality sperm. There is a charge for the freezing and storage of semen.

Retrograde Ejaculation

This occurs when the sphincter (valve) to the bladder fails to close and the semen, instead of being ejaculated from the penis, goes back into the bladder. The conditional is associated with past urological surgery, spinal injury and diabetes but sometimes has no apparent cause. Contact with urine in the bladder rapidly immobilises the sperm as the urine is usually quite acidic and has a too-high ionic concentration.

Our approach to this is to minimise the degree of contact between the sperm and the urine and to alter the pH (acidity) of the urine to be less damaging to the sperm. The collection is best done **at the laboratory** so that the processing of the sperm to wash them free of the urine can be done immediately after collection.
The protocol that we have developed and found to work is:

1. Take a sachet of urinary alkalinizer (Ural, Citravescent or Citralite available from a pharmacy) in water the evening before the collection.
2. Take another urinary alkalinizer on waking up in the morning.
3. At the laboratory obtain a specimen bottle containing 20ml of Tyrodes tissue culture solution from the scientist.
4. Empty your bladder in a toilet.
5. As soon as possible after, in the semen collection room, have an ejaculation using masturbation.
6. As soon as possible after (usually 5-15 minutes), empty the bladder contents (semen and some urine) into the specimen bottle of culture medium.
7. **Immediately** give the bottle to the scientist for processing.

Patients With Sperm Antibodies

When a man develops antibodies against his own sperm, the antibodies act to prevent conception in two ways. After sexual intercourse the antibody-coated sperm are unable to penetrate the wife's cervical mucus to reach the egg. Should they reach the egg the antibody coating prevents sperm penetration and fertilisation of the egg.

We have developed a strategy for minimising the amount of antibody that binds to the sperm. Since the antibodies only make contact with and bind to the sperm after ejaculation, we reduce this by having the husband collect his semen into a specimen bottle containing 20ml of Tyrodes tissue culture solution which dilutes the antibodies before they bind to the sperm. The specimen and solution are then quickly centrifuged to separate the sperm from the liquid before too great an amount of antibody binds to them. They then receive two extra washes with more solution to hopefully elute some of the bound antibodies from their surface.

Due to the dual needs of supplying sterile warmed Tyrodes solution and the need to centrifuge the sperm immediately after collection **this specimen collection can only be done at the laboratory.**

Spinal Injury Patients

As a consequence of their injuries, spinal injury patients often have great difficulty in obtaining penile erection and ejaculating. With these patients we work in conjunction with the Spinal Injuries Unit at Princess Alexandra Hospital whose staff help us obtain semen specimens by either vibrator-induced ejaculation or electro-ejaculation. These patients may also have the complication of retrograde ejaculation so the strategies outlined above, along with filling and flushing the bladder with Tyrodes solution, are also employed.

Depending upon their quality, sperm collected in this manner are used in the various assisted reproduction techniques from artificial insemination to IVF-ET, GIFT and microinjection and a considerable number of pregnancies have been achieved in this manner.

Epididymal and Testicular Sperm

Some men suffer azoospermia (no sperm in their semen) as a result of obstruction due to disease or surgery or congenital absence of the vas deferens which carries the sperm from the testis to the urethra. As long as their testes are still producing sperm it is usually possible to obtain sperm from the epididymis adjacent to the testis or from the seminiferous tubules within the testis itself. This must be done surgically under a general anaesthetic and the quality of sperm collected from the epididymis is usually such that they can only be used for conventional IVF-ET at best and more commonly for assisted fertilisation by microinjection if their motility is of reduced quality. The best results have been obtained from men with obstructions or failed reversal of vasectomy. Those with congenital absence of the vas deferens have not yielded many successes.