

Male Fertility

A Guide for Couples

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www.expertfertility.org

What exactly *is* 'male fertility'?

Normal male fertility is a difficult thing to define precisely. My own 'working definition' is –

“The ability to deliver a good number of healthy sperm to the woman’s reproductive tract regularly, at the time that ovulation is occurring.”

For these events to occur healthy sperm must be produced in sufficient quantity and sexual function must be normal most of the time. In this guide, I will explain the processes by which healthy sperm are manufactured, normal sexual function, and problems that can affect male fertility.

Keeping it fun!

One of the issues I see regularly is that couples who are trying for a baby begin to see lovemaking as a chore. This is a particular theme when there has been a longer delay in becoming pregnant.

Never lose sight of the fact that you are a couple, and that having a baby is an expression of love. Try to make sure that your intimate relationship is not affected by obsessions about ovulation and pregnancy. Keep the love in lovemaking.



Avoid the 'blame game'

Another problem that can happen for couples occurs when one partner has a fertility issue and the other does not seem to. This can make the affected partner feel like 'the problem' at times, and in extreme cases almost feel themselves to be a 'burden' on their partner. With prolonged fertility delays the partner who does not seem to have an issue may sometimes feel resentment to their partner. Often these feelings are unspoken but can affect a relationship at a challenging time.



We're in this together...

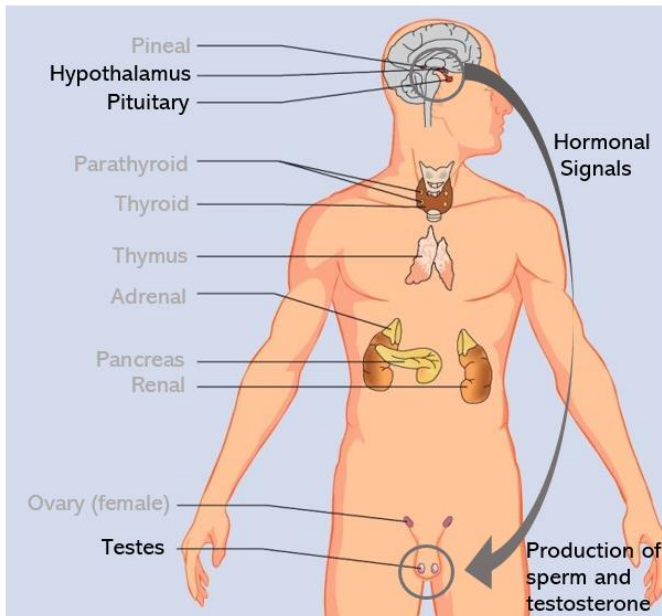
Fertility delays are stressful and affect the best of relationships. One of the key strategies for navigating the fertility journey as a couple is to **recognise** that unspoken fears, resentments, and feelings of guilt or even 'failure' are common and natural. Being open with each other is the way forward.

Fertility is generally a **couple challenge**, rarely an individual one, so take a 'team approach.' Never hesitate to discuss worries, concerns, or emotions with those providing your care. **Many couples seek professional help from a skilled fertility counsellor** – this is normal, helpful, and sometimes makes all the difference.

Making healthy sperm

The manufacture of sperm in large quantities – millions of sperm are made every day – is the end result of a finely-tuned hormonal process. The hormonal signals that lead to sperm production begin deep within the brain, in an area known as the ‘hypothalamus.’ The hypothalamus works in concert with the pituitary to release hormones into the bloodstream.

These hormones are carried to the testicles, where they have their point of action. When the processes are functioning normally, ‘feedback’ processes send messages back to the pituitary to carefully regulate hormone production.



A delicate balance...

Many things can affect the delicate balance of hormones that drive sperm production in men.

Illnesses, changes in weight, and use of medications all can affect hormone production and balance in men.

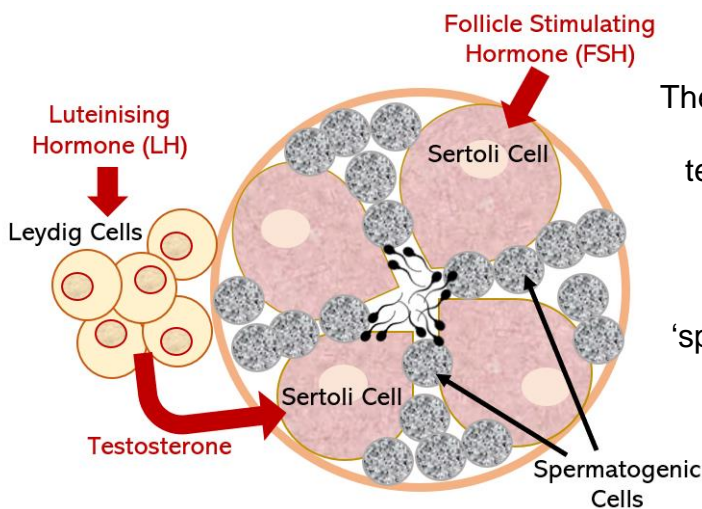
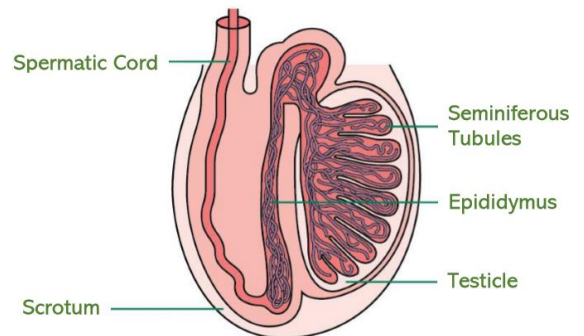
For these reasons it is important to keep the highest possible state of health when trying for pregnancy.

Always let your doctor know if you are taking any medications, have any other health problems, and if you are using **non-prescribed medications** such as performance-enhancing steroids, for example.

What lies beneath

The testicles contain two main elements – the tubules in which sperm are made and transported out, and the cells that release testosterone (the ‘male hormone’).

Once sperm are made, they are stored briefly in a reservoir call the *epididymis*. After a period of storage, the sperm are moved along the *vas deferens* (within the ‘spermatic cord’) to be ejaculated.



The pituitary hormone ‘LH’ acts on the supporting cells to make them produce testosterone. The testosterone, in turn, acts on the cells within the tubules of the testicle to bring about sperm manufacture.

The cells that actually make sperm are called ‘spermatogenic cells.’ The cells that act to direct sperm production are known as ‘Sertoli cells.’

Once sperm are made, they move along the tubules within the testicle to be stored in the epididymis where they mature.

Staying healthy

For any man who is trying for pregnancy with his partner, staying healthy is important. Being overweight, for example, can affect the hormonal balance. Other factors, such as smoking, drinking alcohol, and lack of exercise can affect the quality of sperm that are made.

Cool it!

While the idea of boxer shorts improving sperm production is probably a myth, prolonged heat definitely reduce sperm production. Avoid prolonged very hot baths, saunas, and prolonged sitting – for example, driving – in very hot conditions.



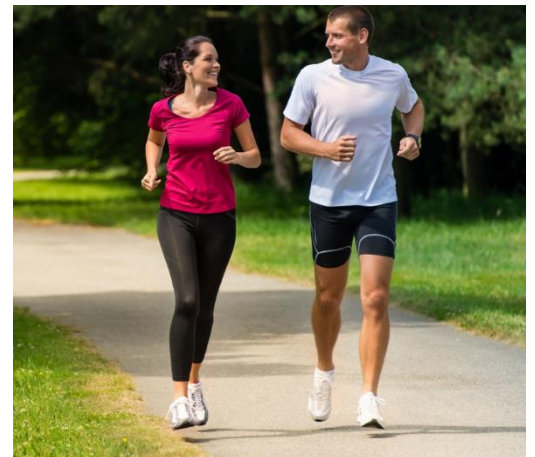
A weighty issue

Being overweight can adversely affect male fertility in many ways. Maintaining weight in the healthy range is important to avoid hormonal complications of being overweight, but also to reduce the risk of hypertension that might require treatment.

Butt out!

Smoking causes 'oxidant stress' that can seriously affect the quality of sperm. It is very important to cease smoking, not only for your general health, but to improve fertility.

Combine this with healthy couple exercise for a fertility boost.



You are what you eat!

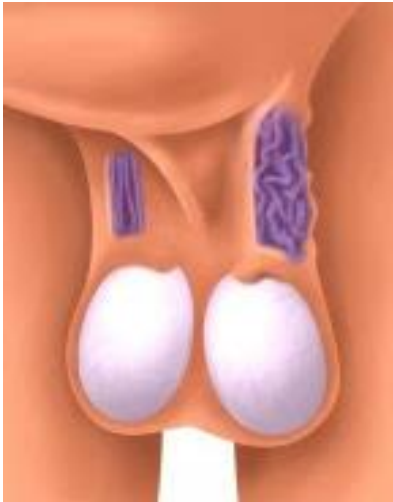
It almost goes without saying that a healthy diet is important for fertility.

Make this a couple thing – make sure both you and your partner have a healthy, low-GI diet high in antioxidants.

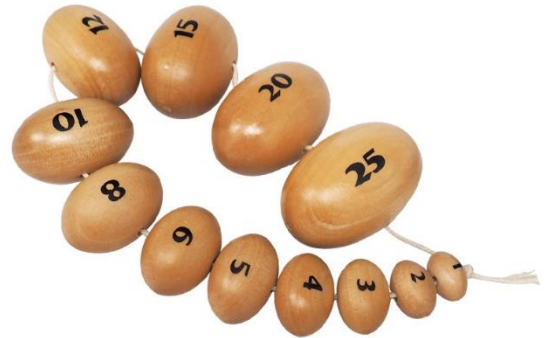
All of this advice is simple and improves not only fertility in particular, but your health in general. That way you will be a healthy parent too.

Assessing your fertility

When a couple is facing a delay in becoming pregnant, issues affecting both member of the couple must be sought. For men this will involve giving a detailed history to the doctor, as well a physical examination and some tests.



The doctor will likely perform a general examination, then assess the size of the testicles (this can be assessed with a set of beads). Other issues, such as varicose veins near the testicle (a varicocele) or scars from previous surgery, will be sought.



Sperm tests

A sperm test is an important part of fertility assessment for every couple.

The test will check the concentration of sperm (the number of sperm in every mL of semen), as well as the movement of sperm and the shape ('morphology') of the sperm.



It is important to remember that a single sperm test, on its own, is not necessarily a good guide to male fertility. The number of sperm, for example, is variable and affected by factors such as illness – having a high fever can greatly reduce sperm number.

If a single sperm test seems worrying, it is usual to repeat the test one or more times to develop a true picture of the situation. Only when repeat sperm tests all show concerning results – changes in sperm numbers, shape, or movement – that a true problem might be present.



Hormone and other tests

Sometimes further tests might be required. For example, hormone tests might be needed to assess the function of the pituitary glands.

In other cases, specialised test of the chromosomes might be needed, or checks for conditions such as cystic fibrosis.

Some specific problems...

...and how they are treated

The sperm test findings are slightly below normal...

This is perhaps the most common situation. A couple have been trying for pregnancy for a long time, and the sperm tests consistently show a slightly low number of sperm, or perhaps a mild problem with the movement of the sperm or their shape. Such a finding is relatively reassuring, but also can be very frustrating for couples. Yet the decision-making in this situation can challenge a couple. Many factors have to be taken into account when planning a pathway to parenthood...



In some situations, it is worthwhile giving things a little more time. For example, where the woman of the couple is young and completely healthy, with no other fertility problems found during the evaluation phase. One potentially useful strategy in this situation is to use formal cycle tracking – using blood tests to identify precisely the day of ovulation, allowing accurate timing of intercourse.

However, there are other situations in which a mildly reduced sperm test should lead to more active management. Examples include the situation where the woman of the couple is in an **older age group**, or where there has been a **very long period of infertility**. Also, where there are fertility issues with the woman – for example, **irregular egg release** (ovulation), **endometriosis**, or other health problems.

What next?

If a decision is made to move to more proactive fertility treatment, there are two potential options – insemination treatment, or *in-vitro* fertilisation (IVF) treatment.

Insemination treatment involves identifying the day of ovulation – usually through a combination of blood tests and ultrasound – and placing a specimen of washed and concentrated sperm into the upper part of the uterus (womb) using a fine catheter that is passed through the cervix. In many cases, the woman will be treated with a small dose of medication by needle to stimulate the predictable development of the egg, and sometimes further treatments are needed to bring about release of the egg (a ‘triggering’ injection) and to provide support with progesterone after the insemination treatment. **You can download a separate detailed guide to insemination from this website.**

Another option is the use of **IVF treatment**. IVF is a more complex treatment, but has a higher chance of pregnancy and taking a healthy baby home. IVF may be used where other options have not been successful, where there has been a very long period of infertility, or where the woman’s age and a wish for having more children makes the freezing of embryos worthwhile. **You can download a separate detailed guide to IVF from this website.**

The sperm test findings are very low...

In situations where the sperm test findings persistently are a long way from normal, and no underlying hormonal or other treatment is available, the only option likely to bring pregnancy is IVF treatment. In some cases, individual sperm are picked out and injected into eggs to fertilise them. For many couples, IVF will seem a big step. **You can download a detailed guide to IVF from this website.**

... or where there are no sperm at all

When sperm tests show there are no sperm at all, this is an alarming situation for a couple. A finding of no sperm at all should prompt a thorough and extensive test of the man to determine what the cause is.

In some cases, the sperm are being manufactured in the testicles but a blockage is preventing them being released with ejaculation. The commonest cause of this is vasectomy (see below). However, another important cause not to miss is a mild form of **cystic fibrosis**. While the only effect of this might be a blockage of sperm in the man, if the woman of the couple also has the cystic fibrosis gene, then it is possible that a child will be affected with full-blown cystic fibrosis. For this reason, whenever a man is found to have no sperm on any sperm test, a test should be performed to make sure cystic fibrosis is not the underlying cause.

If a blockage is found, it may be possible to use surgery to obtain sperm for the purposes of IVF treatment. **You can download a detailed guide to surgery in male fertility from this website.**

Sperm are not being made...

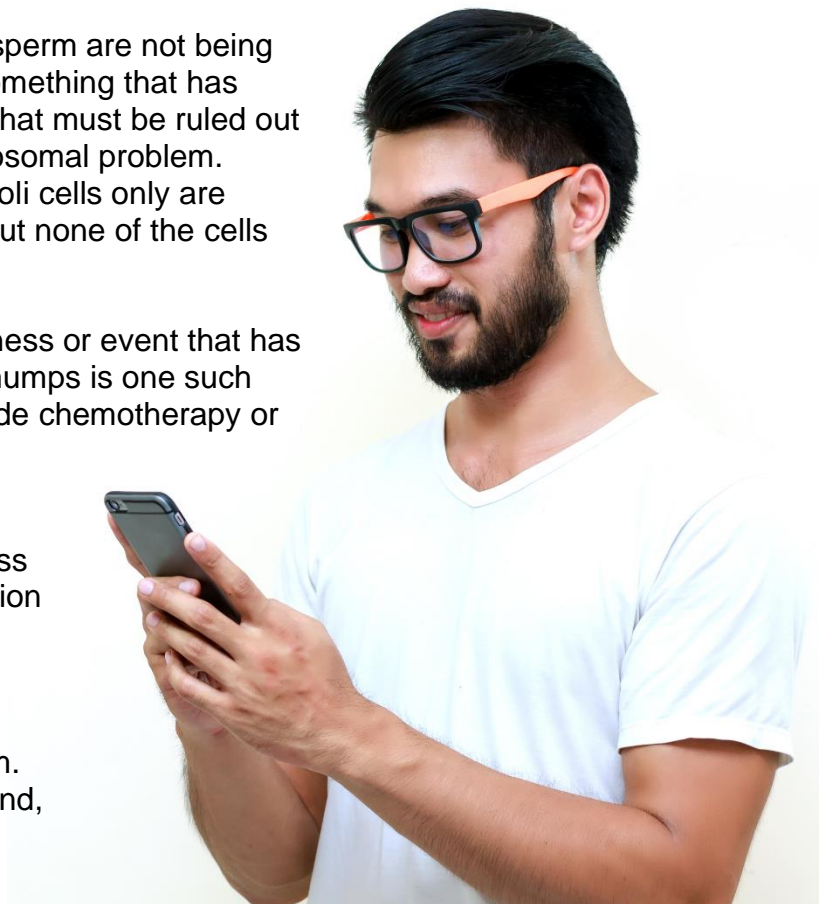
In other cases, there is no blockage – the sperm are not being made at all.

There are three potential reasons that sperm are not being made. In the first case, this might be something that has affected a man since birth. One issue that must be ruled out in this situation is an underlying chromosomal problem. Another is a condition in which the Sertoli cells only are present in the tubules of the testicles, but none of the cells that manufacture sperm.

Secondly, there might have been an illness or event that has permanently damaged the testicles – mumps is one such condition. Other potential causes include chemotherapy or other cancer treatments.

Lastly, there might be transient causes. One example is a transient severe illness – influenza is one example. Any condition that causes a prolonged high fever can stop sperm production, sometimes for months.

Another example is a hormonal problem. In conditions that affect the pituitary gland, hormonal messages that affect sperm production might be affected.



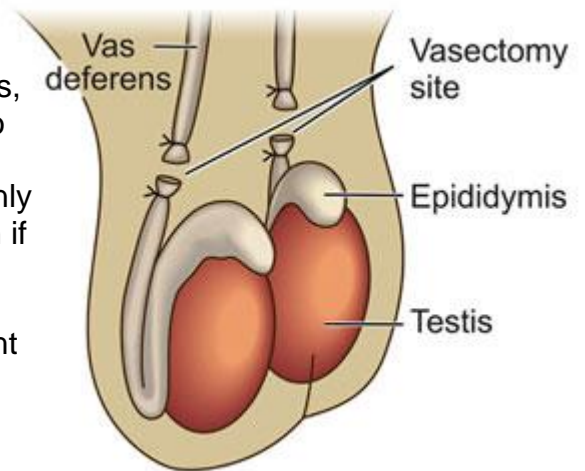
Vasectomy... a common issue



Vasectomy is a very common form of permanent contraception in Australia – more than 15000 vasectomies are performed for Australian men every year.

Life's circumstances change, and studies tell us that almost one man in ten who has undergone vasectomy will wish to have another child. For this reason, vasectomy is a common issue seen by fertility specialists.

Vasectomy is performed by interrupting the vas deferens, thus blocking the transport of sperm from the testicles to the ejaculation. A complicating factor is that, over the years after a vasectomy is performed, the body commonly will develop an immune response to sperm. Thus, even if a microsurgical procedure is performed to reverse the vasectomy – and sperm return to the ejaculate – the presence of antibodies on the surface of the sperm might interfere with normal fertilisation, thus reducing fertility.



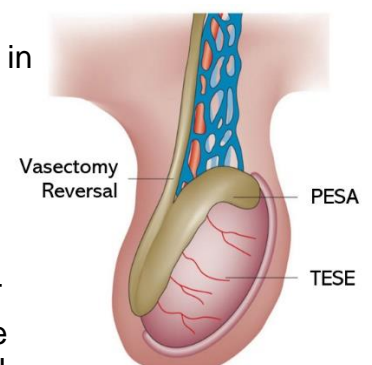
In some circumstances, it is appropriate to use microsurgical techniques to join the ends of the vas deferens together and reverse the vasectomy.

The success – or otherwise – of this procedure is determined by many factors, including the length of time since the initial vasectomy was performed.

Studies suggest that more than half of men who undergo a reversal of their vasectomy will ultimately need IVF treatment anyway.

In some situations, it is more appropriate to move to IVF treatment in the first instance. This is particularly so if issues have been identified in the woman of the couple. Examples include problems with the woman's fallopian tubes, endometriosis, very irregular ovulation, or where the woman is in an older age group.

Because it can take many months for normal numbers of sperm to return after a vasectomy reversal, in situations where the woman is older and more than one child is desired by the couple, moving to IVF without delay may be a wiser idea. However, decision-making can be very complex and full evaluation of both members of the couple – and their situation and circumstances – is required. **You can download a detailed guide to fertility after vasectomy from this website.**



About Professor Steve Robson MD PhD



Steve Robson is internationally recognised as one of the world's foremost specialists. In 2019, Steve was the recipient of the American College of Obstetricians and Gynaecologists highest honour - the **Distinguished Service Award**.

Steve undertook his specialist training in Australia, England, and Canada. In his first year of formal training in IVF and reproductive medicine in 1998 he won the **Young Clinician's Prize** of the Fertility Society of Australasia (FSA).

Steve Robson is the immediate past-President of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG), and is Professor in Obstetrics and Gynaecology at the Australian National University. He holds two doctorates, both a Doctor of Medicine (MD) and PhD, as well as Fellowships of the Australian, British, and American Colleges of Obstetricians and Gynaecologists.

Steve was appointed by the Health Minister to the National Health and Medical Research Council (NHMRC), as well as to the National Endometriosis Advisory Group – part of the National Action Plan for Endometriosis.

Professor Robson is one of the authors of the *Oxford Textbook of Obstetrics and Gynaecology*, and as a researcher is the author of hundreds of research articles, editorials, reviews, and book chapters. His research has been published in the most prestigious international IVF journals – *Fertility and Sterility*, and *Human Reproduction*.

He has published research papers not only on IVF and assisted reproduction, but also on reproductive surgery and endometriosis surgery.

In addition, Professor Robson is Chair of the organising committee for the International FIGO meeting in 2021, and is a member of the internationally ground-breaking *Mackenzie's Mission* project.

