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Using Follicle Stimulating Hormone

What is FSH?

FSH stands for follicle stimulating hormone and is a hormone produced by the pituitary gland (a pea-shaped gland located behind the eyes) to stimulate egg production in the ovaries. It is released in variable amounts through a natural menstrual cycle to result in one egg being available for fertilization in. After menopause (when there are no eggs left in the ovaries) the levels are very high.

Why is FSH used in fertility treatments?

When FSH is given in larger amounts than would occur in a natural menstrual cycle it results in more than one egg being ripened and matured.

1. Sometimes if you are not ovulating, FSH is given in the amount roughly equal to that of a natural menstrual cycle and this is called ovulation induction (see separate pamphlet).
2. At other times the intention may be to produce 2 to 3 eggs and this is called superovulation. This is often used to treat unexplained infertility and infertility after treatment of endometriosis. This may be combined with placement of your partner's sperm in your uterus.
3. The third case in which FSH is used is in IVF (in vitro fertilization). The intention here is to produce 10 to 15 eggs with the aim of fertilizing them outside the body. The reason why so many eggs are necessary is that the process of IVF is relatively inefficient and the more eggs that are available for fertilization, the more likely pregnancy is to occur.

What preparations are available?

FSH has been used in fertility treatments for about 15 years. It was initially prepared from the pituitary glands of deceased people. It was found that this was very expensive and gave FSH a variable quality and also there was a small risk of transmitting Jakob Creutzfeldt disease. This is no longer available for use in Australia.

The second preparation was obtained from the urine of post-menopausal women. It was purified and used for injection until about 1996 when a new improved product became available. It is still used to a limited extent. Its trade names are Humagon and Pergonal. These are given as deep injections into the muscle. There are some highly purified versions available and these are sometimes used e.g. Humagon HP.

The third preparation which is available and which is the most commonly used today is that of recombinant FSH. This means that the gene that codes for the production of FSH is inserted into yeast cells which then make the FSH in large amounts. It is therefore relatively pure and is not from a human or animal tissue source. It can therefore be given under the skin as a subcutaneous injection rather like that which people with diabetes do. Its trade names are Gonal-F and Puregon.

[How is FSH given?](#)

In general the newer preparations are given subcutaneously (by injection inserted under the skin) by yourself and you will be instructed in this technique. It is much the same as a person with diabetes giving themselves insulin and is well within the ability of most people. You are strongly encouraged to give your own injections and not to ask your partner or another person to give the injections. This is because the injections should be given at roughly the same time each day and sometimes unavoidable events occur leading to delay in the administration of the injection. This could have a very significant effect on the success of the treatment cycle.

[What side effects occur?](#)

Side effects from injections include local reactions and some redness and itchiness, which are usually transient and not significant. There may be some bruising. If there is a large amount of bruising it may reflect your injection technique and you should discuss this with your doctor or the fertility nurse coordinator.

Other common side effects include lower abdominal pain and bloating.

An uncommon but serious side effect is the ovarian hyperstimulation syndrome. This occurs in up to 1 in 20 IVF cycles. In its mildest form it causes lower abdominal discomfort only. In severe form it can be life-threatening and is associated with large numbers of follicles (>30) and the accumulation of fluid within the abdomen and other body cavities. It may require admission to hospital. It is very important that this complication be recognised as soon as it becomes apparent and this is the reason why IVF cycles are monitored closely by doctors familiar with the use of FSH.

Other risks of the treatment include the risk of multiple pregnancy. This will obviously depend on whether you are having ovulation induction, superovulation or IVF. There is a significant risk of twins (up to 25% of pregnancies resulting from FSH treatment are twins) and the risk of triplets is in the order of 2%.

If you are having ovulation induction or superovulation cycle cancellation may occur if there are more than three eggs. You will be advised to cease treatment and avoid sexual intercourse. This is to reduce the risk of higher order multiple pregnancy (quadruplets, quintuplets etc).

There is speculation that the risk of ovarian and breast cancer may be increased long term. There is no evidence that ovarian cancer is increased after FSH at this time. Breast cancer remains unevaluated.