

NIMAAYA



# WHY INVESTIGATE FOR INFERTILITY



## About this booklet

This series of booklets has been developed and written with the support of leading fertility clinics across Australia, and AccessAustralia — a national organization that provides numerous services for people having difficulty conceiving. We also acknowledge the many people who spoke openly about their own experiences with assisted conception in order to help others experiencing a similar journey. Merck Serono thanks the many individuals, couples and Australian Healthcare Professionals, including fertility specialists, specialist nurses and psychologists who shared their knowledge and expertise during the production of these booklets.

**Important notice:** The information provided in this booklet does not replace any of the information or advice provided by a medical practitioner and other members of your healthcare team. Your doctor will determine the best medications and course of action for you based on your requirements and conditions.

Prescription medicines have benefits and risks. Use all medications strictly as directed by your doctor and raise any questions or concerns with them before, during or after using prescribed medicines. If you experience side effects consult your doctor.

Full information regarding the medicines listed in this booklet, including how they are taken and side effects, is available from the Consumer Medicine Information (CMI) sheets. These can be found at the TGA website ([www.tga.gov.au](http://www.tga.gov.au)) for Australian residents and the medsafe website ([www.medsafe.govt.nz](http://www.medsafe.govt.nz)) for New Zealand residents.

Medication availability and funding criteria may differ between Australia and New Zealand.

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# Why investigate for Infertility

The investigation of each couple facing infertility problems requires a meticulous access which should be performed and evaluated by specialists in the field of Assisted Reproduction.

After obtaining a complete previous medical history from both partners (which should comprise among others questions on previous diseases, surgical operations and pregnancies, on the duration and features of the woman's menstrual cycle, on the frequency of sexual intercourse and the time period of conceiving efforts) and performing a clinical gynecologic examination, the fundamental questions that should be answered in any case before the application of any simple or complicated assisted reproduction technique on a couple are the following: is the man's sperm capable to fertilize? do the woman's ovaries release an oocyte (egg) every month? are the woman's tubes open enough to allow the spermatozoa and the oocyte to meet? Beyond this stage, any further investigation should be specialized according to each specific situation.

## Diagnostic investigation of the male

The main test for the male investigation is the assessment of sperm (semen analysis) which is recommended to be performed after a 3 day abstention from sex, while its collection by means of masturbation should preferably be done in the laboratory (if the collection is done at home, the sample must be kept warm and brought to the laboratory within 30 minutes).

In cases that no definite aberrations are observed, it is usually recommended that the examination should be repeated after a short period of time. The semen analysis gives information on its volume and acidity, on the number, morphology and motility of spermatozoa, on the presence of inflammatory cells, and on its glucose and other substances content. On suspicion of infection a semen culture follows, while in the suspicion of antisperm antibodies a series of specific detection examinations may follow. Finally, it is possible to determine by means of specialized tests the functional ability of spermatozoa to penetrate the oocyte in order to fertilize it. On suspicion of varicocele, an ultrasonographic scan of the scrotum is performed to detect dilated veins. On suspicion of endocrine disorder, hormone tests are performed (serum testosterone, FSH, LH evaluations, etc). Finally, in cases of severe oligospermia or azospermia a chromosomal analysis (caryotype) as well as a genetic test for cystic fibrosis should be done..

## Diagnostic investigation of the female

The investigation for female factor infertility comprises a series of essential and optional tests.

# Follicle Stimulating Hormone (FSH) blood test

The Follicle Stimulating Hormone (FSH) blood test measures the level of FSH in blood. FSH is a hormone released by the pituitary gland, located on the underside of the brain.

### How the test is performed?

A blood sample is needed.

### How to prepare for the test?

If you are a woman of childbearing age, your health care provider may want you to have the test done on certain days of your menstrual cycle.

Day 3: FSH Fertility Testing of Ovarian Reserve — Follicle Stimulating Hormone Test.

### Why the test is performed?

In women, FSH helps manage the menstrual cycle and stimulates the ovaries to produce eggs. The test is used to help diagnose or evaluate:

- Menopause
- Women who have polycystic ovary syndrome, ovarian cysts
- Abnormal vaginal or menstrual bleeding
- Problems becoming pregnant, or infertility
- In men, FSH stimulates production of sperm. The test is used to help diagnose or evaluate:
  - Problems becoming pregnant, or infertility
  - Men who do not have testicles or whose testicles are underdeveloped

# LH blood test

The LH blood test measures the amount of luteinizing hormone, which is also secreted by the pituitary gland. In women, LH levels rise at mid-cycle; within 24 to 36 hours, ovulation occurs. Higher-than-normal levels of LH indicate several disorders, including ovarian failure and polycystic ovary disease.

## How to prepare for the test?

Your health care provider will ask you to temporarily stop medicines that may affect the test results. Be sure to tell your provider about all the medicines you take. These include:

- Birth control pills
- Hormone therapy
- Testosterone
- DHEA (a supplement)

If you are a woman of childbearing age, the test may need to be done on a specific day of your menstrual cycle. Tell your provider if you have recently been exposed to radioisotopes, such as during a nuclear medicine test.

## Why the test is performed?

In women, an increase in LH level at mid-cycle causes release of eggs (ovulation). Your doctor will order this test to see if:

- You are ovulating, when you are having trouble getting pregnant or have periods that are not regular
- You have reached menopause
- A woman is having difficulty getting pregnant
- A woman has irregular or absent menstrual periods
- It's suspected that a woman has entered menopause
- A man has signs of low testosterone levels, such as low muscle mass or decrease in sex drive.
- A pituitary disorder is suspected.
- A boy or girl appears to be entering puberty too late or too soon.

If you are a man, the test may be ordered if you have signs of infertility or lowered sex drive. The test may be ordered if you have signs of a pituitary gland problem.

# Anti-mullerian hormone testing of ovarian reserve

## What is AMH?

- AMH, or anti-mullerian hormone is a substance produced by granulosa cells in ovarian follicles.
- It is first made in primary follicles that advance from the primordial follicle stage. At these stages follicles are microscopic and can not be seen by ultrasound.
- AMH production is highest in preantral and small antral stages (less than 4mm diameter) of development.
- Production decreases and then stops as follicles grow. There is almost no AMH made in follicles over 8mm.
- Therefore, the levels are fairly constant and the AMH test can be done on any day of a woman's cycle.

## AMH and Fertility

### How can AMH hormone levels be a fertility test?

- Since AMH is produced only in small ovarian follicles, blood levels of this substance have been used to attempt to measure the size of the pool of growing follicles in women.
- Research shows that the size of the pool of growing follicles is heavily influenced by the size of the pool of remaining primordial follicles (microscopic follicles in "deep sleep").
- Therefore, AMH blood levels are thought to reflect the size of the remaining egg supply or "ovarian reserve".

With increasing female age, the size of their pool of remaining microscopic follicles decreases. Likewise, their blood AMH levels and the number of ovarian antral follicles visible on ultrasound also decreases.

Women with many small follicles, such as those with polycystic ovaries have high AMH hormone values and women that have few remaining follicles and those that are close to menopause have low anti-mullerian hormone levels.

### AMH levels and pregnancy chances with in vitro fertilization

Women with higher AMH values will tend to have better response to ovarian stimulation for IVF and have more eggs retrieved. In general, having more eggs with IVF gives a higher success rate.

AMH levels probably do not tell us much about egg quality, but having more eggs at the IVF egg retrieval gives us more to work with - so we are more likely to have at least one high quality embryo available for transfer back to the uterus.

## E2 TEST

An estradiol test is a blood test that measures the amount of estradiol in your blood. It's also called an E2 test. Estradiol is a form of the hormone estrogen, and it's also called "17 beta-estradiol." The ovaries, breasts, and adrenal glands make estradiol.

### Estradiol (E2)

#### Why are these hormone levels important?

Estrogen is actually a group of three hormones in a woman's body. As the primary form of estrogen produced in the ovaries, Estradiol (or E2) helps facilitate proper ovulation, conception and pregnancy. It also helps regulate cholesterol levels and promote bone health in women.

#### What does the test include?

- Estradiol (E2)

#### Who should be tested?

You should strongly consider testing if you are a woman struggling with infertility, or if you are experiencing changes that suggest the onset of menopause. In addition, strongly consider testing if you are experiencing any of the following:

- abnormal menstrual cycles
- abnormal or heavy vaginal bleeding
- fatigue
- moodiness
- low sex drive
- loss of muscle tone or increased body fat

Women receiving fertility treatments may have this test on several occasions to gauge the level of estradiol in the ovaries.



## Looking for more information?

other booklets in the Pathways to Parenthood series are available at: [www.nimaaya.com](http://www.nimaaya.com)

- Endometriosis
- Overcoming male Infertility
- Female infertility & assisted reproductive technology (Art)
- Your step by step guide to treating Infertility
- Polycystic ovary syndrome (PCOS)
- Ovulation Induction (OI)
- Intra Uterine Insemination (IUI)
- In Vitro fertilisation (IVF) & Intra-cytoplasmic sperm injection (iCsi)
- Managing the stress of Infertility
- Why investigate for infertility
- Laser assisted Hatching
- Male Infertility
- Oocyte Vitrification
- Semen Analysis
- Why Investigate for Infertility



## How can you choose the right IVF centre?

Choosing the right fertility clinic is crucial to make sure that your dream of parenthood is on the right path. While every failed IVF cycle can be a major psychological and financial setback, the abundance of fertility clinics leads to confusion and frustration.

But do not lose hope. There are a few easy checks that any couple can do to help them find the fertility clinic that is right for them.

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### Facilities

Nimaaya has a full time Embryologist with a Masters in Clinical Embryology, armed with 10 years of intensive experience.

We believe in delivering the best and the latest technology at no added cost to our patients, who have the right to the best medical care, even if they don't live in the metros.

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### Services

Our centres provide treatment for all types of cases. Our Endoscopy department is capable of Endoscopic treatment of cases like Fibroids, endometriosis and Poly Cystic Ovaries.

Dr. Kishore Nadkarni is our Male Infertility specialist, with 30 years of experience in the field. We provide TESA, PESA and TESE for cases of Azoospermia (NIL SPERM).

Our centre is one of the most cost-effective centres in India with unparalleled success rates.