



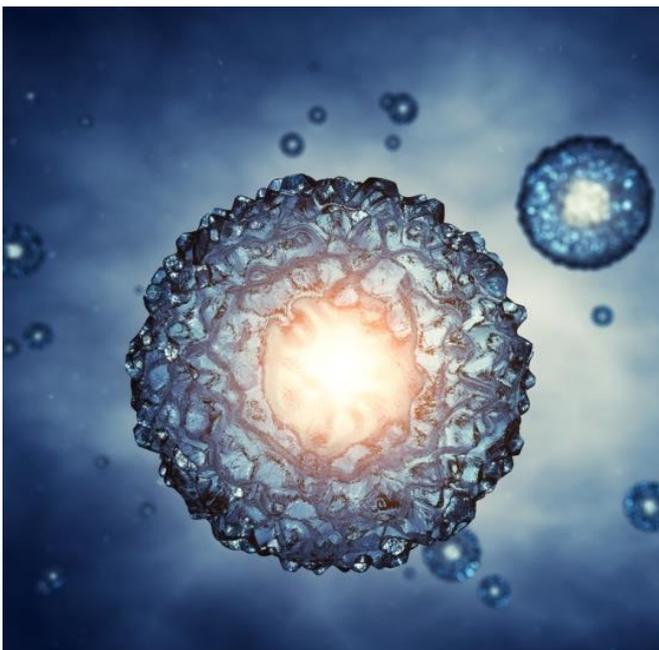
## Understanding Human Eggs

All the eggs a woman will ever have are created in the first 16 weeks while they are still inside their mother's womb. Approximately 4 to 5 million eggs are formed but only 1 to 2 million eggs remain at the time of birth. Of these, only 400 000 to 500 000 are still viable at puberty. Up until the menopause, a woman is expected to ovulate 400 to 440 times.

### In essence, human eggs are “destined to die”.

Menopause generally occurs when there are less than 1000 eggs left in the ovaries. On average, this occurs at about age 54 years. Women who have experienced endometriosis go through menopause at an average age of 49 years. Premature menopause can occur before the age of 40 years and is often genetically linked. Other conditions such as Fragile X syndrome can also result in premature menopause.

Any woman less than 35 years old who has been trying to conceive without success for more than 12 months should seek help. If over 35 years old, a woman should seek help if unsuccessful after 6 months of trying to conceive. One of the first things a fertility specialist will check is your ovarian reserve (egg supply).



### Factors that Affect Egg Quantity and Quality

#### 1. Age

Age is the most important factor affecting egg supply and quality. Women are born with a finite number of eggs and quality deteriorates with age. But, even older women will have good quality eggs; they just have less of them.

#### 2. Endometriosis

Endometriosis can decrease egg numbers and quality. If endometriosis involves the ovaries and surgery is required, this can further reduce egg numbers. Egg quality tends to improve after excision of endometriosis.

#### 3. Polycystic ovarian syndrome

In this condition, women do not have more eggs than other women. They have more eggs coming out of “stasis” each month. Within any group of eggs, there are a normal number of good quality eggs but a higher number of poor quality eggs. In those requiring IVF, the number of eggs retrieved equates to a higher chance of pregnancy. It is just a matter of finding the “good eggs”.

#### 4. Other medical conditions

There are many conditions that can affect number and/or quality of eggs. Thankfully, these are rare, but with treatment, most women can achieve a pregnancy. Conditions include cancer and its treatments, autoimmune disorders, premature menopause, chromosomal abnormalities, fragile X syndrome and ovarian surgery.



## Testing Egg Supply

There are 3 commonly performed tests which give useful information about egg numbers.

### 1. Anti-Müllerian Hormone (AMH)

The AMH is a very useful test. It tends to decrease with age as egg numbers decrease. It can often point towards common causes of infertility. A lower than expected AMH level raises concerns about endometriosis and other rarer causes of decreased egg numbers. A higher than expected level, points towards the possibility of polycystic ovarian trait/syndrome. When fertility treatments are required, the AMH serves as a guide to the dosage of medications used.

An AMH is often done to give reassurance to women who want to delay child-bearing. For example, women who do not have a partner or women whose careers depend on them continuing to work.

Delaying child-bearing till after age 35 years is not recommended as egg quality plays a major part in the chance of success. If a woman can foresee that she will not start a family until after age 35, she should consider egg freezing at a younger age. The AMH is not a good predictor of when menopause will occur.

The test for AMH is a simple blood test that can be done at any time of the menstrual cycle but not immediately after ceasing the oral contraceptive pill. In Australia, it costs approximately \$75 to \$85. There is no Medicare rebate.

### 2. Follicle-Stimulating Hormone (FSH)

The FSH is a simple blood test ideally done on day 3 of the menstrual cycle, but can be done from days 2 to 5. It is done as a routine for anyone being investigated for infertility and has a Medicare rebate.

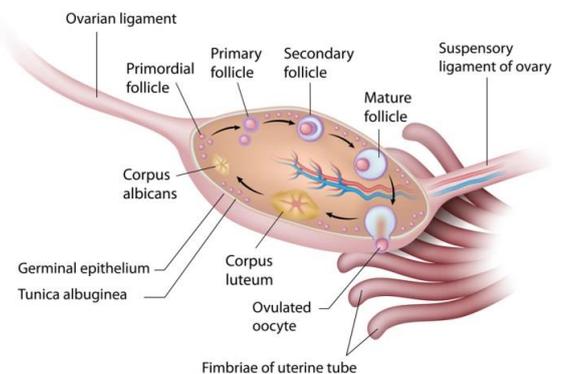
The FSH begins to rise as egg numbers dwindle and reaches a peak with the onset of menopause. The majority of women with low egg numbers have a relatively normal FSH.

### 3. Antral Follicle Count (AFC)

This test is done with the use of a transvaginal ultrasound scan from day 1 to day 5 of the menstrual cycle. It counts the number of small follicles in the ovaries. A certain number of eggs come out of stasis each month and have potential to grow. It is assumed that each follicle contains an egg.

In women with low egg numbers, the AFC can vary month to month. This test can be used to decide on which month to start an IVF cycle.

When investigating your egg supply, your fertility specialist will look at the results of all three tests to get a overall picture of your ovarian reserve





Dr Andy Stamatou MBBS FRANZCOG

BRISBANE OBSTETRICIAN, GYNAECOLOGIST & FERTILITY CARE

# FACT SHEET

## Treatment

Treatments are available for women with low egg numbers depending on the cause. Options to consider are listed below.

1. **Surgery to diagnose and excise endometriosis**
2. **In-vitro fertilisation (IVF)**
3. **Donor eggs or donor embryos.**

**Egg freezing** is readily available to all women of reproductive age. The advent of new vitrification (snap freezing) techniques has increased success rates for achieving a pregnancy using frozen eggs.

The younger the eggs are at the time of freezing, the more useful they are. For example, at age 28 years, 7 eggs are required on average to achieve one pregnancy. At age 35 years, 12 eggs are required to achieve one pregnancy. Unfortunately, there are those women who may never achieve a pregnancy despite having good numbers of eggs in frozen storage.

These cases often have other causes for infertility that may not be discovered until they come to use the eggs. Ultimately, the majority of women who freeze eggs will have a pregnancy but there are no guarantees.

## Time is of the essence

I spend a lot of time visiting my GP colleagues to make them aware of what we can do. It is important to educate women about their reproductive "clock". If you get tested and find you have a low ovarian reserve, see a fertility specialist as soon as possible. The younger you are, the better your chances of success.

I am affiliated with City Fertility Centre (Brisbane), Rainbow Fertility (Brisbane), City Fertility Centre (Sydney) and Rainbow Fertility (Sydney). You can call for an initial consultation on **07 3613 9774 (Brisbane)** or **02 9146 4770 (Sydney)**. Alternatively, call the Fertility Advice Centre on **1300 354 354** to find a clinic near you.

## Resources

### 1. Websites

City Fertility Centre:

<https://www.cityfertility.com.au/>

Rainbow Fertility:

<https://www.rainbowfertility.com.au/>

### 2. Patient Information

<https://www.cityfertility.com.au/information/>

<https://www.rainbowfertility.com.au/seeking-advice/>



Dr Andy Stamatou  
Level 7 Watkins Medical Centre  
225 Wickham Terrace Brisbane Qld 4000  
AUSTRALIA

T. +61 7 3613 9774  
F. + 61 7 3319 0979  
E. [info@ghealth.com.au](mailto:info@ghealth.com.au)  
[www.ghealth.com.au](http://www.ghealth.com.au)