# CLOMIPHENE CHALLENGE TEST

A woman's age has a profound effect on her fertility. Unlike the male, a female is born with a finite number of eggs. Call it a bank account if you like.

Eggs are not only lost as a result of ovulation. In fact, ovulation only accounts for very few of the eggs which are "lost" from this bank account. There is a natural loss – whereby eggs are dying every day.

A female fetus has up to 6 – 8 million eggs in her ovaries. By the time she reaches the age of puberty, on average 12 – 13 years – the majority of those eggs have died, and she has about 200 – 300,000 eggs left. These eggs continue to be "lost" as she gets older. When the ovaries have no more eggs, ovulation ceases, and a woman goes in to menopause.

Medically we refer to the number and quality of eggs as "Ovarian Reserve". Measuring a female's ovarian reserve can be difficult, and is certainly not an exact science. However it is an important part of an assessment, and especially important before doing In Vitro Fertilization.

First of all a woman's history is important. If she is experiencing hot flashes and irregular cycles, we can be pretty sure that she is pre menopausal and that her ovarian reserve is very low. The chances for her conceiving would be small.

However the history may not be helpful. Some women with limited ovarian reserve continue to have regular periods without any symptoms for some years.

Another way to measure ovarian reserve is to do a blood test on the third day of the menstrual cycle – and measure the level of FSH (Follicle stimulating hormone) and Estradiol. (estrogen) This is referred to as a Day FSH and Estradiol. An elevated FSH or estradiol may indicate limited ovarian reserve.

Ultrasound can also be helpful. Measuring the ovarian volume and counting the number of small follicles (called antral follicles) can give us further information. This test is normally done during the first week of the cycle.

The Clomiphene challenge test is a more dynamic way of testing the ovarian reserve. Clomiphene is a fertility drug used to induce ovulation. For the purposes of this test, it is given at a dose of 100 mg (2 tablets) for 5 days – starting on day 5 of the menstrual cycle. The clomiphene tablets should be taken first thing in the morning.

A blood test is done on both day 3 (i.e. before the clomiphene is started) and then again on day 10 (the day after the last tablet of clomiphene)

Elevated levels of FSH on Day 10 indicate that there has been insufficient follicular development and estradiol produced by the ovary to suppress the FSH secretion from the pituitary gland.

**Interpretation of the Clomiphene Challenge test (CCCT)**

| | **Day 3** | **Day 3** | **Day 10** | **Day 10** |
|---|---|---|---|---|
| | FSH iu/l | Estradiol pmol/L | FSH iu/l | Estradiol Pmol/L |
| Normal | <10 | <300 | <10 | >650 |
| Borderline | 10 - 12 | | 10 - 12 | |
| Abnormal | >12 | >300 | >12 | <650 |