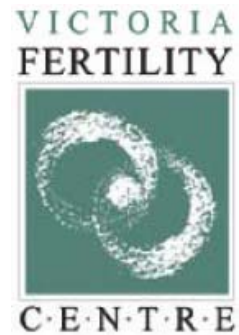


Fertility Facts



The effect of age on fertility

Age has a significant effect on fertility. Fertility reduces at a rate of about 3 % per year after the age of 29 years. A healthy 25 year old woman with a healthy male partner can expect an 85 % chance of pregnancy per year. In contrast to this a 45 year old healthy ovulating woman with a healthy partner can expect a 25 % chance of pregnancy in a year.

So it often comes as a surprise to most couples to learn that the best chances for conception per cycle in a woman in her early twenties is only about 25 %. As the chances for successful conception decline as a woman gets older – so does the risk of miscarriage and the risk of chromosome abnormalities.

Effects of maternal age on fertility rates

Maternal age	Pregnancy rate per cycle	Live birth rate per cycle	Abortion rate per cycle
<30 years	25 %	18.9	14.9
30 – 35 years	15-20 %	14.3	16.5
36 – 39 years	10 – 15 %	9.0	22.4
40 – 45 years	5-10%	7.4	33.2

There may be a number of different explanations for miscarriages, but by far the commonest reason is chromosome abnormalities. After the egg and sperm unite and go through the different stages of meiosis and mitosis, mistakes can happen resulting in abnormal chromosomes. Such fetuses will often miscarry as nature tries to sort out the chaffe from the wheat.

However not all chromosomally abnormal fetuses will miscarry – so that as a woman gets older, so she may have a higher risk of carrying a baby with an abnormal chromosome make up. By the far the commonest of these is Down's syndrome.

There are various ways of testing to establish that a baby has normal chromosomes – and by far the most accurate is a procedure called an amniocentesis. This is a procedure which is done under ultrasound guidance at about 15 – 16 weeks gestation. A needle is inserted in to the pregnancy sac and about 3 – 4 teaspoons of amniotic fluid are taken from around the baby. This fluid is mainly baby's urine – but floating in the fluid are skin cells which are collected and then cultured. After 2 weeks of culture we usually have enough cells to allow the chromosomes to be determined. There is a risk from this procedure. The risk of a miscarriage related to an amniocentesis is about 0.5 % (1/200)

Other ways of testing include the following:

1. An ultrasound done at 11 weeks gestation to check the nuchal thickness (ie the skin fold at the back of the baby's neck)
2. A blood test – which looks at various hormones at proteins produced by the baby. We know from experience that thee may be altered in a fetus with abnormal chromosomes. This is called a Triple marker screen and is done at 15 – 20 weeks of pregnancy.

3. A detailed ultrasound at 18 – 20 weeks. There are some subtle or obvious features which can suggest that the baby may have abnormal chromosomes.

It should be noted however that an amniocentesis is the only accurate way of checking a baby's chromosomes. The other tests are just screening tests which evaluate risk – but give an answer in the form of probabilities.

Risk of Chromosomal Abnormality In Newborns By Maternal Age		
Maternal Age (years)	Risk for Down Syndrome	Total Risk for Chromosomal Abnormalities
20	1/1,667	1/526
25	1/1,250	1/476
30	1/952	1/385
35	1/378	1/192
40	1/106	1/66
41	1/82	1/53
42	1/63	1/42
43	1/49	1/33
44	1/38	1/26
45	1/30	1/21
46	1/23	1/16
47	1/18	1/13
48	1/14	1/10
49	1/11	

It should be noted that the risk of chromosome abnormalities may be increased with twins and also if ICSI is used with in vitro fertilization.