

# Pregnancy and the older woman

updated September 2010

The desire to have a baby is virtually universal. Choosing the appropriate time can be extremely difficult. Increasingly, women are faced with this complex problem with education, career, financial stability, being with the “right” partner, all entering into the equation. The result has been an increasing age at which women are considering child bearing.

Sadly, even making the decision does not guarantee the early result one desires – the wanted child. The delay caused by subfertility can take a woman into the latter part of her reproductive life.

The problems of attempting to conceive at an older age fall into two categories:

- The reduced fertility that accompanies increasing age
- The effect of the age of the mother on the pregnancy when it occurs

Firstly, consider the impact of age on fertility.

Studies both in fertile women and in those requiring treatment with assisted conception techniques clearly show that maximum fertility is in women less than 30 years of age. A fall, though not statistically significant, occurs between 30 and 35 years. However, between 35 and 40 the fertility rate drops by at least 30%. For example, a couple with no known factors to impair their fertility (sperm are normal, ovulation has been proven and there is no tubal disease), will have 12-15% chance of falling pregnant in each cycle when they commence trying if aged 30 years.

For a similar couple who start to try to conceive, with the woman now aged 40 years, the chances of falling pregnant are reduced to 7-10% per cycle. Put another way if 100 couples, in which the women are aged 30, all cease contraception and attempt to conceive, 80 will fall pregnant in the first year. In a similar group of women aged 40, only 50 will fall pregnant in 12 cycles. By 43 years this figure has fallen to less than 30 per year.

Why is it so?

## The major factors that determine fertility rates

There are two major factors that determine fertility rates:

- the quality of the eggs
- the receptivity of the lining of the womb to allow the embryo to attach.

## The quality of the eggs

The quality of eggs diminishes with age. One aspect of this is the well-known chromosome abnormality, such as Down's Syndrome which occurs more commonly. The defect lies in the inability of the older egg to allow correct separation of chromosomes as the embryo divides. An extra chromosome is then added in the normal complement that causes the Down's abnormality. Other defects of a similar type are also more common in older women. These embryos are less likely to implant or go on to develop and so explain a lower pregnancy rate. In addition, with IVF in women over 35 years, the ovaries are generally less responsive to medication indicating a fall in the total number of eggs, which immediately lessens the chances of success. Those eggs, when exposed to sperm, have a lower chance of fertilisation.

In a good IVF laboratory the overall fertilisation rates should be 70%. In older women the rate is nearer 50%. Once embryos are achieved and put back into the uterus, there is again a reduced chance of attachment compared with a woman aged 30 years. This may be a reflection of the quality of the embryo but it also may reflect the environment in the womb.

## The lining of the womb

The factors that influence the lining of the womb are mainly the blood supply to the uterus and the hormones from the ovary. There is evidence of less blood supply in older women and the hormonal environment is not as good as in younger women. Bolstering with hormones, probably helps a little. An example of this is the use of donor oocytes from young women in older recipients who have gone through the menopause. By giving above normal levels of oestrogen and progesterone, the lining of the womb can be made receptive to the embryos. Indeed, the rate of pregnancy approaches that of women of the age of the donor and significantly better than the rate achieved by spontaneously ovulating women of a similar age to the recipient. Thus, for women over 40 having difficulty conceiving with their own eggs, donor oocytes are an option to consider.

Obviously the first message from these observations is that to maximise the chances of conception, couples should endeavour to start as early as circumstances permit. The second lesson is that men and women need to be educated in more detail as to the realities of the declining fertility that occurs with age. The third message is that when embarking on fertility treatments which clearly do improve that individual's chances of success when over 35, couples must adopt a realistic approach to the woman's chances of conception to avoid as much as possible the trauma associated with failure. However, despite all this doom and gloom a large number of women do conceive and have babies in the over 35 bracket.

**So you are over 35 and have conceived. What effect does your age have on the pregnancy?**

**Once the woman is past the half-way mark of the pregnancy, what are the risks?**

There are a number of studies looking at the outcome for the mother and baby in the older age group. To use the title of an article on this subject in the New England Journal of Medicine "the message is cautiously optimistic". Most research shows an increase in a number of complications, for example diabetes, hypertension, bleeding in pregnancy.

However, if there are no underlying medical problems a recent study has shown no increased risk of adverse outcomes to mother or baby. For babies the risks of abnormality are outlined above, but in addition there is an unexplained small increase in the stillbirth rate in older women that is a chance of 6/1000 births as opposed to 3/1000 in women less than 35 years. Thus, the reality is then that once the pregnancy has proceeded past the first twelve weeks (when miscarriages generally occur) fetal abnormality has been excluded, and the chances of a healthy baby are 99.4%. Not too bad, considering the negative things discussed above.

For my patients over 35 and contemplating an infertility treatment, I endeavour to present the facts as outlined above so that they can approach treatment and the pregnancy with a realistic view.

In Australia over 27,000 healthy babies per year are born to older women. There is certainly no need for pessimism.

With thanks for  
Professor Michael Chapman

Supported by an untied educational grant from:

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