Success with IVF

EVERYBODY wants to know their individualised chance of having a baby from IVF treatment. This is a difficult question, but two factors contribute more than any other – the woman’s age at egg collection and the number of eggs collected.

The cause of infertility is seldom important unless none of the sperm are moving. Having a higher BMI can mean the woman needs more medications but doesn’t usually affect the chance of pregnancy. Recent research suggests the man’s BMI may be important but this is still being studied. Higher levels of sperm DNA fragmentation probably reduce the chance of pregnancy and increase the chance of early miscarriage, but there is not enough information to make good predictions for individual couples.

There is also the question of how best to express success rates. Because so many people now transfer one embryo at a time, we think the most useful approach is to show the chance of having a child from a single IVF cycle that proceeds to egg collection, including the use of any frozen embryos.

Of course, if you do have frozen embryos, you will want to know the chance of pregnancy using them so we have shown that later.

Success from a single IVF cycle
Figure 7 shows the chance of a child from a single IVF egg collection, including the use of any frozen embryos if a fresh embryo transfer did not result in pregnancy. The data includes all cycles at Fertility Associates clinics between 2011 and 2013, including those where no eggs were collected, but it excludes women using donor eggs since it is the donor’s age that is more important in this group.

QUICK FACTS
If you haven’t had an IVF cycle before, then your AMH level is the best predictor of the number of eggs you will obtain from the stimulation medications, and hence of having a child.
The graph does not include the 10% of women whose cycle is stopped before egg collection. IVF is usually stopped because of a low response to medications — in which case it is usually better to start again at a higher dose or use a different stimulation method. Less commonly a cycle is stopped for over-response because it wouldn’t be safe continuing.

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Figure 8 splits the birth rate curve by AMH level. We don’t have enough information yet to subdivide anything below 5 pmol/l AMH into smaller steps.

If you have had IVF before, then you will have some idea of the number of eggs you may produce the next time. We say ‘some idea’, because your doctor may change the medication dose or stimulation protocol to try to increase the number of eggs if that is desirable. Also, there is lot of variation from one IVF to the next in the same woman, even using the same dose.
No one tries to become pregnant naturally and gives up if it doesn’t happen in the first month of trying – becoming pregnant is a numbers game with overall chance of success increasing each time you try.

of medications and the same method of ovarian stimulation. As a ‘rule of thumb’, you have a 80% chance of obtaining the same number of eggs as last time, plus or minus 3 eggs.

People frequently want to know how the number of eggs affects success rate. We have tried to do that in Figure 9. Please remember these are averages and that there can be a lot of variation for individuals. Although it would be nice to obtain 11–15 eggs, many women are unable to produce this number no matter what medication dose or method is used. Fortunately, getting fewer eggs still gives a reasonable chance of having a baby.

**Success using thawed embryos**
The chance of birth after transferring a thawed embryo is also dependent on the woman’s age, but it is her age when the egg is collected not when the embryo is transferred. Figure 10 shows data from Fertility Associates clinics for cycles in 2011–2013. Of course, embryos needs to survive freezing and thawing first – survival rates per embryo are around 70% per embryo frozen on day 1–3 of development, but are now around 90% for blastocysts. Identical twins can also occur with frozen embryos, and at about the same rate as with fresh embryos.

**Cumulative success rates**
No one tries to become pregnant naturally and then gives up if it doesn’t happen in the first month of trying – becoming pregnant is a numbers game with overall chance of success increasing each time you try. This is called the ‘cumulative birth rate’.

The same applies to fertility treatments like IVF, although of course cost and ‘effort’ set limits for most people. Fortunately, if you do not become pregnant from your first IVF cycle, then the chance of success in the second or third cycles is just as good. It may even be a bit higher if you do become pregnant but miscarry. If you are prepared to try up to three IVF cycles, then your overall chance of having a baby is 80% if you are under 38, as shown in Figure 11.