

Blastocyst Patient Information

During IVF, embryos are usually transferred on day 2 or 3 after egg collection. At this time the embryo is at the 2 to 8 cell stage of development. It is extremely difficult for the embryologist to accurately select which embryos would have the best chance of progressing to pregnancy, when at such an early stage of development. The best 2 or 3 are chosen in the hope that at least one will succeed.

Prior to implantation human embryos require a very specific environment for optimal growth. This environment varies through the different stages of development. Within the laboratory, traditional culture media cannot meet the requirements of the embryo beyond day 3. A culture system called 'sequential' medium has been developed to support the differing nutritional requirements of the growing embryo. As a result it is now possible to culture embryos, within a laboratory, to the blastocyst stage which is reached 5 days after egg collection. By this time the embryologist has a much clearer idea of which blastocyst has the best growth potential and chance of survival which in turn leads to a better chance of pregnancy.

What is a blastocyst?

A blastocyst is a highly developed embryo. It has divided many times into a large number of cells and is nearly ready to attach to the walls of the uterus (womb).

During its development an embryo is contained within a protective shell (zona pellucida). The embryo hatches or breaks out of its shell on the fifth or sixth day to enable it to implant. Just prior to hatching the embryo becomes a blastocyst.

At blastocyst stage, the embryo is made up of two very different types of cell and a central fluid filled cavity. Its appearance is very different to its earlier stages of development. The surface cells lining the inside of the shell will become the placenta and the inner cells will become the foetus. A healthy blastocyst will hatch by the end of day 6 and begin to implant within 24 hours.



Who will benefit from blastocyst transfer?

Not all patients will benefit from blastocyst transfer. In the first instance the Agora will offer it to:

- Patients who have had three or more failed cycles of IVF despite good embryo quality at day 2 or 3
- Those at risk of OHSS
- Those at increased risk of multiple pregnancy, i.e. younger patients
- Older patients with a large number of embryos but reduced chance due to age

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What are the associated risks?

On average, only half of all embryos developed on day 2 will form blastocysts. It is a possibility therefore that an IVF cycle will not result in transfer if none develop. This has been reported to occur in up to 10% of cases

Blastocyst transfer is a relatively new technique and long term effects to children born following this are not known. There is little reason however to suspect a risk to the pregnancy or to the child. There have been no reports of increased chromosomal or anatomical abnormalities or developmental problems among hundreds of children born since its development.