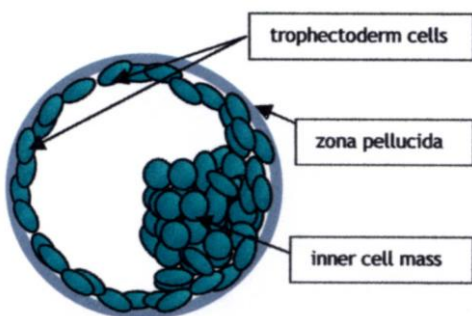


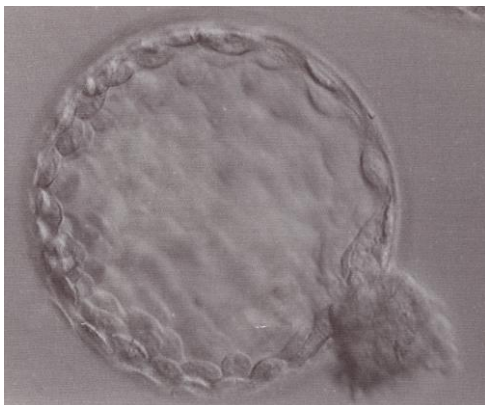
What is a blastocyst?

When a sperm fertilises an egg the resulting embryo develops from the original single cell into a complete human being, consisting of billions of cells. This occurs through a series of cell divisions into two cells, then four then eight and so on. About five days after fertilisation, the multi-cellular ball absorbs fluid and expands. The embryo is now called a blastocyst and consists of a layer of outer cells, which eventually become the placenta, and a small number of inner cells which will form the fetus.



A diagram of a blastocyst embryo

The blastocyst then expands and contracts to 'hatch' from its thin shell (the zona pellucida). At this stage the blastocyst is ready to implant into the lining of the uterus.



A photo of a blastocyst hatching from the zona pellucida 'shell'

What is a blastocyst transfer?

Instead of transferring embryos two or three days after egg collection or embryo thaw, the embryos are cultured for a further two or three days, when they may have developed into blastocysts.

The very best blastocysts are selected and placed into the patient's uterus on the fifth or sixth day following egg collection, depending on how quickly they develop.

MFS will attempt to freeze any good quality surplus blastocysts for possible future use (see MFS infosheet 'Embryo Freezing').

What are the advantages?

IVF units around the world have seen an increase in the clinical pregnancy rate per embryo when blastocysts are transferred, instead of four to eight cell embryos. There are two main advantages:

- because a healthy blastocyst has a greater chance of succeeding, it may improve the overall chance of resulting in a pregnancy
- it reduces the risk of twins or triplets as fewer are normally transferred to the uterus

Why is the pregnancy rate higher?

Two main theories explain why blastocyst transfer may result in a higher pregnancy rate:

- not all IVF-created embryos have the potential to produce a full-term pregnancy and it is currently not possible to look at an embryo and know whether it will result in a pregnancy. However, extending the culture period is known to help embryologists select the best embryos to transfer back to a patient's uterus. Two or three days after egg collection most embryos look very similar, but culturing embryos in highly-developed media enables embryologists to identify those which develop faster and are more likely to result in a pregnancy. However, blastocyst culture does not improve the quality of an individual embryo and so is not suitable for all patients
- during natural conception the embryo normally reaches the uterus on day five or six. Delaying transfer of an embryo to the uterus as a blastocyst may improve its chance of survival and implantation

Are there any disadvantages?

Not knowing when the transfer will take place can sometimes be stressful if planning time off work. Occasionally MFS may recommend abandoning the extended culture and opt for any earlier transfer (three days after egg collection) if the embryos do not reach the blastocyst selection criteria.

This usually means the embryologist has already been able to select the best embryo/s without needing to culture them for longer.

Unfortunately not all embryos develop into blastocysts; as many as two-thirds may stop dividing before this stage. If embryos are cultured for the extra days, it's possible that none will develop and be transferred, or be viable to freeze for possible future use. This may result in early disappointment, although information gained about such losses may help with the management of any future treatment cycles.

Who is blastocyst transfer suitable for?

Blastocyst transfer may be suitable women who:

- are advised for medical reasons to avoid a multiple pregnancy
- may only want one embryo transferred
- meet the criteria for elective single embryo transfer (eSET)

Most women have a good chance of pregnancy following the transfer of two embryos three days after egg collection. For some people though, this has not been successful, for no apparent reason, even after several cycles of IVF. These patients may benefit from blastocyst transfer as it will confirm before transfer that the embryos have the potential to develop to this final stage. In addition, the blastocyst would be placed into the uterus at exactly the time that an embryo would reach the uterus when natural conception occurs.

Are there any risks?

World-wide, pregnancies which have resulted from blastocyst transfers show an increase in the incidence of identical twins. There do not seem to be any other risks although this is still a fairly new technique and other risks may not be known for many years.

Will the drugs or treatment be different?

No. Except for the timing of the transfer, everything is exactly the same as the normal two or three day embryo transfer. The patient will be asked to telephone the MFS laboratory during the days after egg collection or embryo thaw so she can be advised of the embryos' progress. MFS may need to adjust the day or time of a patient's planned blastocyst transfer to maximise her chance of getting pregnant, which may result in her having to return to MFS at short notice.

Results

For the latest MFS success rates for blastocyst transfer, please see the current Patients' Guide to Services or visit midlandfertility.com

Costs

There is no additional charge for blastocyst culture and transfer as part of IVF and ICSI treatment at MFS.

Please refer to the current List of Charges in either the Patient Finance Information leaflet or via midlandfertility.com/fees.

Further information

Discuss blastocyst transfer with one of the clinical team or an embryologist at your next appointment.

Also, please visit midlandfertility.com and search for 'Treatments' or read the following MFS infosheets:

- Counselling
- IVF
- ICSI
- Embryo Transfer and the 2 Week Wait
- Embryo Freezing
- Frozen Embryo Transfer

(downloadable from midlandfertility.com by searching for 'MFS Treatment Literature', or in hardcopy from MFS).