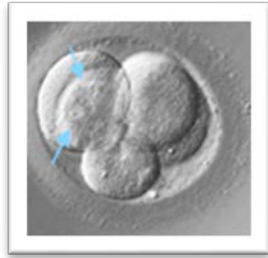


## MULTINUCLEATION FACT SHEET

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- Multinucleation is the presence of two or more nuclei in an embryonic cell.
- Multinucleation is most often observed on Day 2 of embryo development in vitro.
- Multinucleation is common, noted in approximately 40% of IVF cycles, and in 30% of embryos at OFC.

### What we know about multinucleated (MN) embryos

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- MN embryos often show uneven cleavage, increased rates of fragmentation, and embryonic arrest between Day 2 and Day 5/6 of embryo culture. Transfer of these embryos on Day 2 or 3 results in poor outcomes.
- Culturing MN embryos to Day 5/6 allows us to observe their developmental potential and determine if they are viable prior to their transfer or cryopreservation.
- Many MN embryos develop into good quality blastocysts by Day 5/6, can have a normal chromosomal complement, and result in implantation, clinical pregnancy, and live birth.
- Although some studies suggest that outcomes following transfers of MN embryos on Day 5/6 may not be as high as those from unaffected embryos, MN embryos that become blastocysts and are selected for fresh or frozen transfer at OFC lead to comparable rates of pregnancy and live births as non-MN embryos.

### Current approach at OFC with MN embryos

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MN embryos are cultured to Day 5/6 and if they develop into good quality blastocysts they can be used for transfer or cryopreservation.

### Outcomes at OFC from transfers of MN embryos (2010-2019)

Type of Transfer (ET)	Number	Positive $\beta$ -hCG	Clinical Pregnancy*	Live Birth**
Fresh Day 5 ET	125	45% (56/125)	34% (43/125)	27% (34/125)
Frozen Day 5 ET	72	51% (37/72)	43% (31/72)	42% (30/72)

\*Clinical pregnancy is defined as an intra-uterine pregnancy with a fetal heart.

\*\*Live birth data from 2 clinical pregnancies are not available.