

New practice model may reduce miscarriage after assisted reproduction

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Elsevier, a world-leading provider of scientific, technical and medical information products and services today announced the publication of an article in the December issue of *Reproductive BioMedicine Online* about miscarriage rates following IVF treatment with frozen thawed embryos which may revolutionize clinical and laboratory practice.

As the practice of freezing and transferring 'surplus' embryos widens rapidly, concerns about whether the freezing process may interfere with the viability of the embryos are often raised by patients. The study highlights that miscarriage is less likely to occur after the transfer of fresh embryos compared with frozen-thawed embryos, but also that the age of the embryos at the time of freezing could influence the miscarriage rate.

Y.A. Wang and colleagues undertook a [retrospective analysis](#) of 52,874 clinical pregnancies recorded on the Australian and New Zealand [Assisted Reproduction Database \(ANZARD\)](#) between 2004 and 2008 that showed that the woman's age and obstetric history are closely related to the risk of miscarriage, and that the transfer of fresh embryos is associated with fewer miscarriages than transfer of frozen–thawed embryos.

The overall miscarriage rate was 18.7%; younger women (< 40 years of age, and women who had an elective single embryo transfer were less likely to miscarry than if two embryos were transferred. Transferring thawed embryos which were frozen at an earlier stage of development

than the blastocyst were less likely to miscarry. The authors proposed a practice model of transferring fresh blastocysts and freezing of cleavage-stage embryos to reduce the miscarriage rate after IVF and related treatments. Such a model, they claim, could lead to a substantial reduction in the miscarriage rate and eliminate much of the anxiety suffered by women undergoing Assisted Reproductive Technology.

As noted by Yacoub Khalaf, Director of the Assisted Conception Unit at Guy's and St Thomas' NHS Foundation Trust, London, in a commentary in the same issue of *Reproductive BioMedicine Online*, this model may have practical limitations and would need validation in a randomized trial. Large databases aggregated over many years are not free of bias and are not usually comprehensive enough to account for all the pertinent variables. Retrospective analysis of large national databases is useful in identifying trends and generating hypothesis, but evaluation of these hypotheses in randomized trials remains necessary for objective validation.

"It is interesting that [miscarriage](#) rates of frozen blastocysts were higher in the Australian study, particularly since it is well known that blastocysts have a lower frequency of chromosomal anomalies than cleaved [embryos](#). Blastocyst culture is still a relatively new approach and culture-related factors such as selection for freezing at blastocyst stage may have affected early learning experiences in some clinics. It is therefore important to repeat a similar analysis of Australian clinic data during subsequent years," Dr. Jacques Cohen, senior editor of *Reproductive BioMedicine Online*, said of the study.

More information: The article is "Transfers of fresh blastocysts and blastocysts cultured from thawed cleavage embryos are associated with fewer miscarriages" by Yueping Alex Wang, Michael Costello, Michael Chapman, Deborah Black, Elizabeth Anne Sullivan ([doi:10.1016/j.rbmo.2011.07.023](https://doi.org/10.1016/j.rbmo.2011.07.023)). The article appears in *Reproductive*

BioMedicine Online, Volume 23, Issue 6 (December, 2011).

The commentary is "The search for a practice model to reduce miscarriage after assisted reproduction" by Yakoub Khalaf, Tarek El-Toukhy ([doi:10.1016/j.rbmo.2011.09.014](https://doi.org/10.1016/j.rbmo.2011.09.014)). The commentary appears in *Reproductive BioMedicine Online*, Volume 23, Issue 6 (December, 2011).

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