

Frozen embryo transfer versus fresh embryo transfer: What's riskier?

May 1 2018





In Vitro Fertilization: Update on Challenges and Innovative Solutions/Cover Art for May 1, 2018 special issue of Birth Defects Research, published by the Teratology Society with John Wiley & Sons. Credit: Michiko Watanabe, PhD

Large for gestational age babies and congenital heart defects (CHD) are just two of several risks needing further examination in the emerging field of assisted reproductive technology, according to the editors of a special issue on in-vitro fertilization in *Birth Defects Research*. The special issue just published by the Teratology Society with John Wiley & Sons, focuses on continued research regarding several aspects of the invitro fertilization (IVF) procedure that clearly call for more answers surrounding safety outcomes for the resulting children.

The scientific journal issue released today (see the Overview, DOI: 10.1002/bdr2.1227) includes "Neonatal outcomes following fresh as compared to frozen/thawedembryo transfer in in vitro fertilization (DOI: 10.1002/bdr2.1216)," research co-authored by Kristin Van Heertum, MD, and Rachel Weinerman, MD, both practicing physicians who routinely deal with IVF issues at University Hospitals Cleveland Medical Center. Dr. Weinerman is also a guest editor of the issue and concludes that "as technologies advance and improve, there are more and more indications for frozen embryo transfer in clinical use" and that embryo freezing may even play a role in preventing negative outcomes by allowing time for the uterine environment to normalize.

Another review (DOI: 10.1002/bdr2.1219) included in the special issue examines frozen embryo transfer and the risk for large for gestational age babies. The research provides potential mechanisms for this association. "It has been noted that implantation of frozen embryos results in larger babies," explained Michiko Watanabe, PhD, co-editor of the special *Birth Defects Research* issue and professor of pediatrics at



Case Western Reserve University School of Medicine. "But whether having a larger baby has negative long-term consequences has not yet been determined."

Congenital heart defects (CHD) have also been associated with IVF. However, a review (DOI: 10.1002/bdr2.1228) by Avinash Patil, MD, at the Center for Personalized Obstetric Medicine in Phoenix, AZ, shows that only milder CHD may be associated with assisted reproductive technologies. "This information is good news when counseling a potential IVF patient since severe congenital heart defects risk does not seem to be higher with assisted reproductive technology," said Dr. Watanabe

Other topics covered in the issue include the expertise of Marcos Meseguer, MD, one of the pioneers in the field of time-lapse microscopy of early <u>embryos</u> to assess quality (<u>DOI: 10.1002/bdr2.1226</u>), and "The impact of contemporary preimplantation genetic screening and diagnosis in the prevention of aneuploidy (<u>DOI: 10.1002/bdr2.1220</u>)," co-authored by Shelby A. Neal, MD, and Marie D. Werner, MD with Reproductive Medicine Associates of New Jersey. Time lapse microscopy and other testing might allow selection of the one best embryo for implantation, thus avoiding twinning and other multiple births that increase risks for mothers and fetuses.

More information: Rachel Weinerman. In vitro fertilization (IVF): Where are we now?, *Birth Defects Research* (2018). <u>DOI:</u> <u>10.1002/bdr2.1227</u>

Kristin Van Heertum et al, Neonatal outcomes following fresh as compared to frozen/thawed embryo transfer in in vitro fertilization, *Birth Defects Research* (2018). DOI: 10.1002/bdr2.1216

Sine Berntsen et al. Large for gestational age and macrosomia in



singletons born after frozen/thawed embryo transfer (FET) in assisted reproductive technology (ART), *Birth Defects Research* (2018). DOI: 10.1002/bdr2.1219

Avinash S. Patil et al. Severity of congenital heart defects associated with assisted reproductive technologies: Case series and review of the literature, *Birth Defects Research* (2018). DOI: 10.1002/bdr2.1228

Belén Aparicio-Ruiz et al. Selection of preimplantation embryos using time-lapse microscopy in in vitro fertilization: State of the technology and future directions, *Birth Defects Research* (2018). DOI: 10.1002/bdr2.1226

Shelby A. Neal et al. The impact of contemporary preimplantation genetic screening and diagnosis on the detection of aneuploidy and inherited genetic diseases, *Birth Defects Research* (2018). DOI: 10.1002/bdr2.1220

Provided by Teratology Society

Citation: Frozen embryo transfer versus fresh embryo transfer: What's riskier? (2018, May 1) retrieved 28 April 2024 from <u>https://medicalxpress.com/news/2018-05-frozen-embryo-fresh-riskier.html</u>

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