

IVF linked to lower birth weight and child growth

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A study has linked babies conceived through a type of IVF to lower birth weight followed by increased growth after birth.

The University of Manchester led study of 5,200 IVF [children](#) found that singleton babies conceived from fresh [embryo transfers](#)—used in two thirds of all IVF—are associated with lower birth weights, head circumference and length, but then grow more quickly, catching up to naturally conceived children by school age.

The team are also monitoring birth [weight](#) in IVF babies over a 25-year period, and initial results show that weight seems to be increasing. It may be that recent improvements in IVF technology are responsible, though it's too early to know for sure, say the team.

Babies conceived from frozen embryo transfers – used in about one third of IVF- have greater weight, head circumference and length at birth and show similar [growth](#) to naturally conceived children.

"Though the effects are small, they do justify considering using the safest form of IVF treatment where possible, and continuing to monitor the long-term health of these children," said reproductive biologist Professor Daniel Brison who led the study.

"Overall IVF babies are just as likely to be born healthy as any other, and the lifestyle choices they make in later life will far outweigh any small effect of low birth weight and altered growth," explained Professor Brison.

Using Scottish data, it is the first large-scale study of early growth in IVF children from birth to school age anywhere in the world, and only the second study of health in UK IVF children using the Human Fertilisation and Embryology Authority register of IVF treatments.

The European Union funded study, which involved researchers from the Universities of Manchester and Southampton, is published today in *BMC Medicine*.

Among the headline findings are:

- The birthweight of babies born from fresh embryo transfer cycles is on average 93.7g less than naturally conceived babies.
- Babies born from frozen embryo transfers are on average 57.5g heavier.
- Fresh embryo babies grew faster from birth by on average 7.2g/week but remained lighter by 171g, at six to eight weeks, than normally conceived babies and 133g smaller than frozen embryo transfer babies; who were similar to normally conceived [babies](#).
- By school entry (four to seven years), weight, length and BMI in boys and girls conceived by fresh and frozen embryo transfer were similar to those in naturally conceived children.

Professor Brison said: "We don't yet know why fetal and child growth for children conceived through this form of fertility treatment is affected.

"Babies born from IVF appear largely healthy, though the oldest of them, Louise Brown, is still only 40 so we feel there is a duty to monitor this cohort of children for diseases which show up only in later life.

"The impact of fresh embryos transfer on [birth weight](#) is after all nearly as great as that of maternal smoking in pregnancy. One possible explanation, say the team, is that fetal growth is restricted with fresh embryo transfer because of impaired placental function associated with dysregulated maternal hormones. Freezing [embryos](#), they argue, may also help to preserve them to establish pregnancy later on when the mother's body has recovered from IVF.

"But IVF children need not be alarmed: the greatest risk from IVF is multiple pregnancy, and the IVF field and government regulator (HFEA) have worked together to improve this greatly over the last five to 10 years."

"The growth of Assisted Reproductive Treatment-conceived children from [birth](#) to 5 years: A national cohort study" is published in *BMC Medicine*.

More information: Mark Hann et al. The growth of assisted reproductive treatment-conceived children from birth to 5 years: a national cohort study, *BMC Medicine* (2018). [DOI: 10.1186/s12916-018-1203-7](#)

Provided by University of Manchester

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