

# Study finds IVF predict one of the most accurate ways of determining chances of IVF success

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Human Embryo. Credit: Ed Uthman, MD/Wikipedia

Accurately predicting the probability of a live birth after in vitro fertilization (IVF) treatment is important for both those undergoing the treatment and their clinicians. Findings from a comparison study that analysed the accuracy of the two most widely-used prediction models are published today [08 April] in the journal *PLOS ONE*.

Researchers at the universities of Bristol and Glasgow compared how well the Templeton method and IVFpredict—two personalised prediction tools that help couples calculate their chance of a successful birth with IVF treatment - worked in 130, 960 IVF cycles.

The team, led by Professor Debbie Lawlor at Bristol and Professor Scott Nelson at Glasgow, used statistical methods to analyse data, held by the UK Human Fertilisation and Embryology Authority, to assess which of the two tools was more accurate at predicting live birth rates.

Although both tools are based on patient and couple measurements and characteristics and history of infertility, the Templeton [model](#) was developed using data from couples who received IVF two decades ago. This was at a time when success rates were considerably lower than currently and before the introduction of intra-cytoplasmic sperm injection (ICSI), which has transformed the use of IVF in couples where [male infertility](#) is a key problem. IVFpredict was developed in 2011 and incorporates recent treatments such as ICSI as well as the characteristics included in the Templeton model. However, it was important to show that IVF predict was accurate in a complete different group of patients than those in which it was originally developed and also to see if it worked better, worse or the same as the Templeton tool that has been most commonly used for the last 20 years.

The findings showed both models underestimated the chances of a live

birth, but this was particularly marked in the Templeton model. The team updated the models to reflect very recent improvements in [live birth](#) rates and this improved both models, however, IVFpredict still remained the more accurate of the two.

Dr Andrew Smith, one of the study's researchers who is based in the Medical Research Council Integrative Epidemiology Unit at the University of Bristol, said: "As clinicians' assessment of success, done without any tool to guide them, are widely varied for the same patients, this study is important. It validates IVFpredict, shows it is more accurate than the other commonly used tool, and can therefore guide clinician assessments of success when they first see patients with infertility. The tool is also available on the internet for patients to use directly themselves.

"The findings will also be of interest for policy makers as precise estimates of IVF prognosis are essential to model the population burden of infertility and treatment and to inform cost-effective healthcare provision."

**More information:** 'External validation and calibration of IVFpredict: a national prospective cohort study of 130, 960 in vitro fertilisation cycles' by Andrew Smith, Kate Tilling, Debbie Lawlor, Scott Nelson is published in *PLOS ONE*.

Provided by University of Bristol

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