

A new model to predict accurate outcomes for IVF

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Couple-and treatment-specific factors can be used to provide infertile couples with an accurate assessment of the likelihood of having a successful outcome following in-vitro fertilisation (IVF). A new prediction model created by Scott Nelson from the University of Glasgow, Glasgow, Scotland and Debbie Lawlor from the University of Bristol, Bristol, England, and published in this week's *PLoS Medicine*, provides a more accurate and contemporary assessment of likely outcomes after IVF than a previously established model, partly because the new model includes intracytoplasmic sperm injection outcomes.

Between 2003 and 2007, 163,425 IVF cycles were completed in the UK, of which 23.4% resulted in at least one [live birth](#). The authors used the data collected by the Human Fertilisation and Embryology Authority on 144,018 of these cycles (the other cycles had missing data) to develop a detailed [statistical model](#) for the outcomes of IVF. According to this model, several factors including increasing maternal age, increasing duration of infertility, and the use of the woman's own oocytes, were associated with a decreased chance of couples having at least one live birth. By contrast, a previous IVF live birth and the use of intracytoplasmic sperm injection were associated with increased chances of success. In addition, the authors found that the chances of preterm and low birthweight after IVF were increased if donor eggs were required and intracytoplasmic [sperm injection](#) was not used.

However, before this new prediction model can be used to guide clinical decisions globally and be used to counsel patients outwith the UK, it

needs to be validated using independent IVF data. To facilitate the external validation of their model, the authors are currently generating a free web-based prediction tool (www.ivfpredict.com) and iPhone application IVFpredict.

The authors conclude: "Pending external validation, our results show that couple- and treatment-specific factors can be used to provide infertile couples with an accurate assessment of whether they have low or high risk of a successful outcome following IVF."

More information: Nelson SM, Lawlor DA (2011) Predicting Live Birth, Preterm Delivery, and Low Birth Weight in Infants Born from In Vitro Fertilisation: A Prospective Study of 144,018 Treatment Cycles. *PLoS Med* 8(1): e1000386. [doi:10.1371/journal.pmed.1000386](https://doi.org/10.1371/journal.pmed.1000386)

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