

Acupuncture And Success Of IVF

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"Acupuncture can increase the chances of getting pregnant for women undergoing fertility treatment by 65%," according to *The Guardian's* news pages.

The Times, *The Daily Telegraph* and BBC News covered the story and quoted Edward Ernst, a professor of complementary medicine, who cautioned that the effect might be due to a placebo effect caused by the women expecting acupuncture to work. He said that the expectation might cause them to relax which would improve pregnancy rates.

The study behind this story is a systematic review which combined the results of "high quality" studies on acupuncture, rates of pregnancy and live birth in women undergoing in vitro fertilisation (IVF). Although the methods used by this study are robust, some possible biases cannot be ruled out. Studies that have negative results are less likely to be published and may therefore not have been included.

When interpreting the 65% increase in pregnancy rates, it should be remembered that the differences in pregnancy rates were quite small. The results actually mean that in order to achieve one additional successful pregnancy, 10 women would need to be treated with acupuncture. The cost associated with lack of effect for the other nine women is something to be considered by individuals and health care providers.

Finally, the study found that the additional benefit of acupuncture depended on how successful IVF was overall. Where pregnancy rates were high, acupuncture had little benefit.

Where did the story come from?

Dr Eric Manheimer, Grant Zhang, Laurence Udooff and colleagues from the University of Maryland School of Medicine, Georgetown University School of Medicine, Washington and the University of Amsterdam, Holland carried out the research.

Funding was provided by the National Centre for Complementary and Alternative Medicine of the US National Institutes of Health. The study was published in the [peer-reviewed: British Medical Journal](#).

What kind of scientific study was this?

The study was a systematic review of randomised controlled trials that compared needle acupuncture given within one day of women receiving IVF with sham (fake) treatment or no treatment at all. The researchers searched for published literature in databases and conference proceedings for studies that compared acupuncture given within one day of IVF treatment versus sham acupuncture (or no treatment). They assessed the quality of 108 potentially relevant studies they found, and of these, included seven trials in their analysis.

Only studies in which pregnancy had been confirmed (either by presence of gestational sac or heartbeat on ultrasound), ongoing pregnancy beyond 12 weeks gestation (confirmed through ultrasound), or a live birth, were included. The researchers also only included studies in which acupuncture needles were inserted into traditional meridian points (groups of points thought to have an effect upon a particular body part).

The researchers used meta-analysis (a statistical technique) to pool the studies. They were particularly interested in the difference in rates of pregnancy between women who received acupuncture and those who did not.

What were the results of the study?

The seven studies that the researchers included in their analysis were all randomised controlled trials. In six of the studies, an acupuncture session was given just before the fertilised embryo was implanted back into the mother and another straight after. One trial involved acupuncture only after implantation. Two studies gave a third session during different phases of the process.

The authors reported that IVF with acupuncture increased the odds of pregnancy by 65% (according to early evidence on ultrasound), increased the odds of ongoing pregnancy by 87% (according to ultrasound evidence of pregnancy at 12 weeks) and increased the odds of a live birth by 91% compared with IVF on its own.

When the researchers only looked at the three studies that showed similar rates of pregnancy to women in the UK, they found that acupuncture did not increase rates of pregnancy with IVF.

What interpretations did the researchers draw from these results?

The researchers conclude that their results suggest that acupuncture given with embryo transfer, improves rates of pregnancy and live birth in women who are undergoing in vitro fertilisation.

What does the NHS Knowledge Service make of this study?

- In four of the seven studies that were included, the women knew which treatment they were receiving (while in the other three the comparison was sham acupuncture). The researchers say that the placebo effect (i.e. where believing in the effect of the treatment affects the outcome whether or not treatment is received) is unlikely to have had any effect in this study because the "outcomes are entirely objective (i.e. pregnancy and births)". However, as mentioned in some newspapers, other researchers have said that it is possible that if women expect the treatment to be helpful then they may be more relaxed and this in turn could affect pregnancy rates.

- The researchers say that their findings are significant and clinically relevant, though they are "somewhat preliminary". They conclude by saying that the effectiveness of acupuncture depends on the previous rate of pregnancy in the population. They call for further research to investigate the relationship between the previous (baseline) rate of pregnancy and the effect of acupuncture. When they limited their analysis to studies that had the highest baseline rates of pregnancy, there was no significant effect of acupuncture on pregnancy success. The fact that the baseline rates of pregnancy varied across the studies is a weakness of the review.

- The reviewers also say that publication bias may have affected their results, despite their best efforts to ensure this was not the case. They cannot rule out that there were small studies with negative results that have not been published and therefore not included.

- The use of "odds ratios" to reflect the comparison is questionable. The authors themselves say that the odds ratio "significantly over-estimates the rate ratio" because the outcome of pregnancy is relatively frequent. A better reflection of the absolute benefit is to consider that these results mean that 10 women will need to be treated with acupuncture for there to be an extra successful pregnancy. In the other nine women, there would be no additional benefit. It is also worth noting that confirmed pregnancy rates were not very different between acupuncture and non-acupuncture groups in real terms (32% v. 27%). Presenting the results in these terms gives them a little more context.

The results of this review suggest that acupuncture has a positive effect of pregnancy rates when given with IVF. An interpretation of the 65% benefit quoted by the papers must be considered in light of the fact that they represent relatively small absolute benefits considering that the rates of pregnancy in the non-acupuncture groups were high.

Links to the headlines

[Acupuncture after IVF 'could boost pregnancy'](#). *The Daily Telegraph*, February 08 2008
[Acupuncture during IVF boosts a woman's chance of conceiving by 65 per cent](#). *Daily Mail*, February 08 2008
[Acupuncture 'boosts IVF chances'](#). *BBC News*, February 08 2008

Links to the science

[Effects of acupuncture on rates of pregnancy and live birth among women undergoing in vitro fertilisation: systematic review and meta-analysis](#).
Manheimer E, Zhang G, Udooff L, et al.
BMJ 2008; Feb 7

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