

Five or more cups of coffee a day reduce the chance of IVF success by around 50 percent

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Women who drink five or more cups of coffee a day severely reduce their chance of success from IVF treatment. Indeed, Danish investigators who followed up almost 4000 IVF and ICSI patients described the adverse impact as "comparable to the detrimental effect of smoking".

The study was presented today at the annual meeting of ESHRE by Dr Ulrik Schiøler Kesmodel from the Fertility Clinic of Aarhus University Hospital in Denmark. Results showed that the consumption of five or more cups of [coffee](#) a day reduced the clinical [pregnancy](#) rate by 50% and the live birth rate by 40%.

"Although we were not surprised that [coffee consumption](#) appears to affect pregnancy rates in IVF, we were surprised at the magnitude of the effect," said Dr Kesmodel.

The link between caffeine and fertility has been studied on occasions in the past, with conflicting results. Some studies have found an increased incidence of spontaneous abortion in coffee drinkers, but other studies have not. Similarly, a Cochrane review from 2009 found there was insufficient evidence to confirm or deny the effect of "caffeine avoidance" on pregnancy outcome. However, one much cited study from 2004 showed that time-to-pregnancy was significantly extended in women when coffee or tea intake was more than six cups per day or when the male partner consumed more than 20 alcohol units per week.(1)

This latest Danish study, which was performed in a large public IVF clinic, was a prospective follow-up of 3959 women having IVF or ICSI as fertility treatment. Information on coffee consumption was gathered at the beginning of treatment (and at the start of each subsequent cycle). The statistical analysis controlled for such confounding variables as female age, female smoking habits and alcohol consumption, cause of infertility, female body mass index, ovarian stimulation, and number of embryos retrieved.

The analysis showed that the "relative risk" of pregnancy was reduced by 50% in those women who reported drinking five or more cups of coffee per day at the start of treatment - and the chance of live birth was reduced by 40% (though this trend was not quite statistically significant). No effect was observed when the patients reported coffee consumption of less than five cups.

In their conclusion, the authors compared the adverse effect of five cups of coffee "to the detrimental effect of smoking". Several recent studies and reviews have indicated that tobacco smoking has an adverse effect in IVF on the number of oocytes retrieved, and rates of fertilisation, implantation, pregnancy and live birth.(2)

Commenting on his results, Dr Kesmodel proposed that in a study of greater numbers the statistical effect of coffee on IVF delivery results would have most likely been significant, and comparable to the effects seen on pregnancy rate.

"There is limited evidence about coffee in the literature," said Dr Kesmodel, "so we would not wish to worry IVF patients unnecessarily. But it does seem reasonable, based on our results and the evidence we have about coffee consumption during pregnancy, that women should not drink more than five cups of coffee a day when having [IVF](#)."

"The fact that we found no harmful effects of coffee at lower levels of intake is well in line with previous studies on time-to-pregnancy and miscarriage, which also suggest that, if coffee does have a clinically relevant effect, it is likely to be upwards from a level of four-to-six cups a day."

More information: 1. Hassan MAM, Killick SR. Negative lifestyle is associated with a significant reduction in fecundity. *Fertil Steril* 2004; 81, 384-392.

2. See for example Waylen AL, Metwally M, Jones GL, et al. Effects of cigarette smoking upon clinical outcomes of assisted reproduction: a meta-analysis. *Hum Reprod Update* 2009; 15: 31-44.

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Does coffee consumption reduce the chance of pregnancy and live birth in IVF?

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