

Intrauterine devices provide the most effective emergency contraception

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Intrauterine devices (IUDs) should be used routinely to provide emergency contraception, according to the authors of the first systematic review of all available data from the past 35 years. They found that IUDs had a failure rate of less than one per thousand and were a more effective form of emergency contraception than the "morning after pill". In addition, IUDs continued to protect women from unwanted pregnancy for many more years if they were left in place.

The research, which is published online in Europe's leading reproductive [medicine journal Human Reproduction](#) [1] today, analysed data from 42 studies carried out in six countries [2] between 1979 and 2011 and published in English or Chinese. IUD use in China is the highest in the world with 43% of women using them for contraception compared with 13% in the rest of the world, according to a 2006 report. The studies included eight different types of IUDs and 7034 women.

An IUD, sometimes known as a "coil" is a small plastic and copper device that is inserted into the womb by a trained doctor or nurse. It can be left in place for between five and ten years, depending on brand. In recent years, intrauterine systems (IUS) have been developed; these are small, plastic devices that release a very low dose of the [hormone progesterone](#). The current study looked at IUDs only, which have been used for emergency contraception for at least 35 years.

The first author of the study, Ms Kelly Cleland, a staff researcher at the Office of Population Research at Princeton University, Princeton, USA,

said: "[Unintended pregnancies](#) are a significant health problem worldwide. It is estimated that globally at least 36% of pregnancies are unintended. We already know from previous research that IUDs are very cost-effective forms of regular contraception. This study is the most comprehensive review to date of the efficacy of IUDs used for emergency contraception, and our results provide [clear evidence](#) that they are a highly effective method of emergency contraception, as nearly 100% of users overall did not become pregnant after unprotected sex when an IUD was inserted post-coitally. In contrast, failure rates are at least 10-20 times as high for emergency contraceptive pills such as ulipristal acetate and levonorgestrel. IUDs also offer very effective ongoing contraception. Therefore, we conclude that IUDs should be included routinely as an emergency contraceptive option whenever feasible and appropriate."

When IUDs are used for emergency contraception they normally should be inserted within about five days of unprotected intercourse. The maximum timeframe in the current review ranged between two and ten days or more. However, in the majority of the studies (74%) insertion occurred within five days.

Out of the 7034 post-coital IUD insertions, there was a total of 10 pregnancies: six occurred among 5629 women in China, and the remaining four pregnancies in 200 women in one Egyptian study.

The researchers believe the unusual and abnormal results in the Egyptian study made it an "outlier" study, probably due to the way the women were chosen and, therefore, should be ignored for the purposes of their review. "This high failure rate can possibly be explained by the fact that women were specifically selected if they had had intercourse around the time of ovulation; in any event Egypt is a clear outlier," write the authors. "If the unusual results from the Egypt study were excluded, the overall failure rate would be 0.09%...; this is our preferred estimate."

By comparison, the "[morning after pill](#)" ulipristal acetate is the next most effective with a failure rate of approximately 1-2%, followed by levonorgestrel with a failure rate of approximately 2-3%. Both ulipristal acetate and levonorgestrel become less effective with increasing body mass index (BMI), but the researchers say that IUDs do not lose their effectiveness with increasing BMI.

Despite IUDs being the most effective means of emergency contraception, research shows that both doctors and patients have little awareness of them and they are rarely used in this situation. The researchers say a study in the USA showed that 85% of clinicians never recommended IUDs for emergency contraception and 93% require at least two visits for an IUD insertion.

Professor James Trussell, Professor of Economics and Public Affairs at Princeton University and Visiting Professor at The Hull York Medical School in York, UK, who was also involved in the research, said: "This is an extremely difficult problem to deal with, especially as in many countries women can just go to their local pharmacy to obtain the 'morning after pill', but virtually no women know to ask for an IUD and many family planning clinics and surgeries do not offer same-day insertion. Offering same-day insertion would remove a huge barrier to the greater use of IUDs."

In addition, the upfront cost of IUDs is comparatively high, ranging between \$718 for the ParaGard IUD in the USA [3] to about £10 for IUDs in the UK, although over a period of time they work out as more cost effective than other methods of [contraception](#), emergency or otherwise.

Prof Trussell said that "these initially higher costs are vastly offset by pregnancies prevented both in the contraceptive emergency itself and by pregnancies prevented by continued use of the IUD. 'Morning after pills'

taken today protect against pregnancy from sex last night but not from sex a week from now."

Ms Cleland concluded: "We hope that this study will encourage providers to consider IUDs for their patients requesting [emergency contraception](#), and possibly to consider how to structure their clinic flow so that they are able to provide same-day insertions."

More information: [1] "The efficacy of intrauterine devices for emergency contraception: a systematic review of 35 years of experience", by Kelly Cleland, Haoping Zhu, Norman Goldstuck, Linan Cheng and James Trussell. Human Reproduction journal.
[doi:10.1093/humrep/des140](https://doi.org/10.1093/humrep/des140)

[2] The six countries were: China, Egypt, Italy, The Netherlands, USA and the UK.

[3] In the USA IUDs are often covered by insurance, and, over time, can cost less than getting contraceptive pills over the counter.

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