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Is IUD and contraceptive implant use associated with the decline in abortions in Iowa?

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placed more value in personally overseeing control of method use. LEM users felt that they were proving their responsibility by renewing their commitment to their method on a regular basis, whereas HERC patients more commonly recognized that methods that failed in the past would fail again. Many women felt HERC was inappropriate as a "starter method." Most women believed contraception was risky, but HERC participants were more willing to take the risk. HERC users were more likely to directly link future goals to contraceptive choice. Most participants appreciated receiving contraceptive counseling.

**Conclusions:** HERC and LEM users think differently about contraceptive decision making. Women may not appreciate differences in efficacy among methods and may have misconceptions about their candidacy for HERC. These themes may be useful when counseling women seeking abortion to help them choose the method most congruent with their values and goals. Future research is needed to assess whether counseling interventions addressing these themes affect contraceptive satisfaction, continuation and unintended pregnancy.

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**O18**

Is IUD and contraceptive implant use associated with the decline in abortions in Iowa?

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**Objectives:** Paralleling a national trend, the number and rate of abortions in Iowa have declined in recent years. However, unlike other states, Iowa expanded abortion access by introducing a telemedicine provision of medical abortion for women living in remote areas and simultaneously launched an initiative increasing access to long-acting reversible contraception (LARC). This study assessed whether increased provision of LARC may have contributed to the abortion decline in the state.

**Methods:** We analyzed abortion data from Iowa vital statistics and LARC use data from 14 family planning agencies' records (N=401,511), for 2007–2012. Mixed-effects logistic regression analyses assessed whether changes in LARC use were associated with the number of abortions in the 26 regions in Iowa.

**Results:** From 2007 to 2012, the proportion of family planning clients who left their visit with a LARC method increased from 2.9% to 14.5%; the rate of LARC users per 1000 women aged 15–44 years increased from 3.1 to 14.8, and the abortion rate decreased from 11.4 to 8.0 per 1000 women aged 15–44 years. After we controlled for baseline LARC use, the odds of abortion were reduced (odds ratio 0.94, 95% confidence interval 0.93–0.96) with increased LARC use. In 17 out of the 26 Iowa regions, LARC use was associated with significantly reduced odds of abortion. The region with the highest abortion rate experienced the smallest absolute increase in LARC use.

**Conclusions:** Results of our analysis suggest that increases in LARC use may be associated with abortion declines.

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**O19**

Pain control for intrauterine device insertion: a randomized double-blind controlled trial of ketorolac

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**Objectives:** Oral nonsteroidal anti-inflammatory medications taken prior to intrauterine device (IUD) insertion have not been shown to decrease pain with the procedure. This study compares intramuscular ketorolac to placebo saline injection for pain control during IUD insertion.

**Methods:** This was a randomized, double-blind controlled trial. Randomization was stratified by parity (nulliparous or multiparous). Subjects received ketorolac 30 mg or placebo saline intramuscular injection 30 min prior to IUD insertion. A 10-cm visual analog scale was used to measure pain anticipated during intramuscular injection, speculum insertion, tenaculum placement, uterine sounding, and IUD insertion, and at 5 and 15 min after IUD insertion.

**Results:** A total of 67 women participated in the study. Thirty-four participants received the placebo injection, and 33 participants received the ketorolac injection. There were no significant differences in baseline demographic characteristics including age, race and level of education. There was a statistically significant difference in the mean pain scores for the placebo versus ketorolac groups at 5 min (2.5 vs. 1.1, p=.003) and at 15 min (2.5 vs. 0.6, p=.001) after IUD insertion. There were no statistically significant differences in pain scores for all other time points. In the subgroup analysis of nulliparous participants, there was also a statistically significant difference in pain scores with uterine sounding (8.1 vs. 5.8, p=.026) and IUD insertion (8.2 vs. 5.8, p=.016).

**Conclusions:** Ketorolac reduces pain at 5 and 15 min after IUD insertion. For nulliparous patients, ketorolac also reduces pain with uterine sounding and IUD insertion.

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**O20**

A randomized controlled study investigating endocrine parameters and sexual function when testosterone levels are normalized during combined oral contraception

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**Objectives:** To investigate the effects on endocrine parameters and sexual function when testosterone concentrations are normalized during combined oral contraceptive (COC) use by coadministration of dehydroepiandrosterone (DHEA).

**Methods:** A single-center (AMC, Amsterdam, NL), randomized, double-blind, placebo-controlled, comparative, two-way crossover study was conducted in healthy COC users aged 20–35 years, with a stable and satisfactory sexual relationship, who stopped taking their usual COC for 1 month. Women were subsequently treated with either five cycles of COC (ethinylestradiol (EE)/levonorgestrel (LNG) or EE/drospirenone (DRSP)) and 50 mg/day DHEA followed by five cycles of COC and placebo, or received the treatment in reverse order. Endocrine parameters and sexual function (physical and psychological aspects) were assessed at baseline and after five treatment cycles.

**Results:** In total, 81 women were randomized and treated. Seven women discontinued early (three during DHEA and four during placebo). Results showed that COC use significantly suppresses androgens, especially free T (p<.0001); COC use has unfavorable effects on sexual function (lower Female Sexual Function Index and diary scores; p<.05); by adding DHEA to an LNG/EE COC, the loss of androgens, especially free T, can be restored (p<.0001) without inducing side effects; and favorable clinical effects were observed on several aspects of sexual function (p<.05).

**Conclusions:** These data provide evidence that COCs suppress androgen concentrations and interfere with optimal sexual function. Addition of DHEA restores free T when combined with an LNG pill, but this dose is too low for a DRSP pill. Aspects of sexual function can be improved by restoring androgen levels through concomitant DHEA treatment.

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