



IUDs

Intrauterine devices: safe, effective, and under-used

■ IUDs are extremely safe, effective, and economical. They have a service life of five to 10 years and produce very few side effects. In general, the associated risk of PID is very low.

■ While the initial cost of an IUD is higher, due to the need for clinical visits and trained inserters, the ongoing costs are minimal.

■ Proper insertion techniques are of paramount importance and reduce the risks of PID and expulsion of the device.

■ An IUD should not be used by a woman who has experienced an STI within the past three months. The presence of STIs during IUD insertion can lead to PID.

■ In populations with a high prevalence of STIs, prophylactic administration of antibiotics may reduce the incidence of PID.

Summary: Intrauterine devices (IUDs) are the most popular form of reversible contraception in the world. IUDs are extremely safe and effective, and they can be used by women as a long-term method. They are also among the most cost-efficient reversible methods of contraception. IUDs do not increase a woman's risk of pelvic inflammatory disease (PID), which can lead to infertility, rather, pre-existing sexually transmitted infections (STIs) increase the risk of infection and subsequent infertility. Clinicians other than physicians can be trained to evaluate candidates and insert IUDs safely. Proper technique and timing is essential to minimize the risk of early expulsion and infection.

Overview: Intrauterine devices (IUDs) are among the most reliable and cost-effective contraceptives available. Though little-used in the United States, they are the most popular form of reversible contraception worldwide. Globally, 12 percent of all married women of reproductive age use an IUD. This is surpassed only by nonreversible surgical sterilization (19%). The most widely used IUDs are the copper T 380A (copper T), and the levonorgestrel (LNg) intrauterine system. The effectiveness of both devices rivals that of surgical sterilization and may surpass that of Norplant. The copper T is approved for 10 years of use and may be effective for upwards of 12 years. The LNg intrauterine system is recommended for five years of use but has been shown to be effective for up to seven years.

Although the initial cost of an IUD is relatively high, with a seven- to 10-year service life, IUDs are among the most cost-effective forms of contraception. Additional costs incurred during use tend to be minimal.

IUDs require insertion in a clinical setting by trained personnel and require a follow-up visit after one month. Some protocols require three additional follow-up visits in the first year; however, a recent study in Mexico (Hubacher, et al., 1999) found no significant difference in rates of PID between clients who had two follow-up visits (at one month and 12 months), and clients who had four follow-up visits in the first year.

Women of any reproductive age, including those who have never had children (nullipa-

rous), can use IUDs. However, nulliparous women and women under 20 years of age have a higher risk of expulsion. IUDs may be inserted at any time during the menstrual cycle, as long as the provider is reasonably sure the woman is not pregnant. Contra-indications for IUD use are few and relate mainly to the presence of genitourinary infection. Women with genitourinary infection after childbirth or abortion, women with an ongoing STI or PID, and women who have had an STI or PID within the past three months should not have an IUD inserted. On the other hand, many of the contra-indications for other family planning methods do not apply to IUDs. For example, woman who smoke, breastfeed (after 6 weeks for LNg), or take antibiotics, can use an IUD.

In general, women report fewer side effects with IUDs than with oral, implantable, or injectable contraceptives. Complaints of intermenstrual bleeding and cramping, especially during the first month of IUD use, are common and may lead to removal.

The copper T is associated with an increase in heavy and prolonged menstrual bleeding, dysmenorrhea, and intermenstrual spotting and cramping during the first few cycles after insertion. These effects are the primary reasons for discontinuation, but they generally decrease over time and are less common among older and parous users. In contrast, the primary reasons for discontinuation of the LNg intrauterine system are infrequent or absent menstruation.



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IUDs do not increase the risk of ectopic pregnancy. However, up to half of the few pregnancies that do occur among IUD users are ectopic.

Continuation rates for the copper T and LNG interuterine system are similar. A recent literature review by Fortney, et al. (1999), cites a number of articles on continuation rates. While the study results varied, continuation rates were generally around 80 percent after the first year and between 38 percent and 50 percent after five years. In one nonclinical survey, the five-year continuation rate was as high as 68 percent.

Insertion: Trained clinicians other than physicians can insert IUDs safely. Proper technique is essential to reduce the risk of expulsion and infection. Insertion under hygienic conditions significantly reduces the risk of infection.

Between two percent and 10 percent of users spontaneously expel their IUD within the first year. Expulsion rates are highest in the first three months after insertion, and women younger than 20 years of age have the highest expulsion rates. A woman who has expelled an IUD has a 30 percent chance of subsequent expulsion.

Infertility risk: Historically, the most important adverse effect associated with the IUD was PID, which can cause infertility. However, recent studies have found the causal relationship suspect. A study in 1,895 women (Hubacher, et al., 2001) found tubal infertility was not associated with prior IUD use, regardless of the duration. Furthermore, the study found that tubal infertility was not associated with the reason for IUD removal, or the presence or absence of gynecological problems related to IUD use. However, past exposure to chlamydia was strongly associated with infertility.

STIs and PID: PID in IUD users is related to poor insertion techniques and the presence of an STI at the time of insertion. PID is usually caused by a pathogen ascending from the vagina or cervix into the upper reproductive tract (uterus, fallopian tubes, ovaries), which can be facilitated by insertion of an IUD. The risk of PID is significantly increased in the first month after IUD insertion, but after the first three months of use, the risk in IUD users is comparable to that in nonusers.

Another recent study (Shelton, 2001) modeled the risk of PID based on the assumption that PID among IUD users results from insertion in the presence of cervical gonorrhea or chlamydia and occurs within the first few

months after insertion. Fully symptomatic PID attributable to IUD use was uncommon, even in populations with a high prevalence of STI. The author estimated that the risk of clinical PID due to IUD use was 0.15 percent, or less than one in 600 women. With a high overall prevalence of gonorrhea or chlamydia of 30 percent, the PID risk increased to 0.3 percent.

Antibiotic prophylaxis: Administering antibiotics prior to IUD insertion may reduce the likelihood of an unscheduled return visit to the clinic. While the reason is unclear, it has been suggested that antibiotics may reduce the risk of subclinical endometritis, which can cause pain or bleeding. However, antibiotics may not significantly reduce the likelihood of PID or premature IUD discontinuation.

A study evaluating antibiotic prophylaxis before IUD insertion (Grimes and Schulz, 1999) found that while the use of antibiotics significantly reduced the number of unscheduled return visits to the clinic, there was no statistically significant effect on rates of PID or premature IUD discontinuation. However, in populations with a high prevalence of STIs, antibiotic prophylaxis may offer a benefit. In settings where the prevalence of gonorrhea and chlamydia was high, prophylactic antibiotics prior to IUD insertion reduced the incidence of both PID and unscheduled return visits by one-third. Clinics operating in areas with high STI rates might want to consider these benefits.

Bibliography:

- Family Health International. *Network* 2000;20(1):1-20.
- Fortney JA, Feldblum PJ, Raymond EG. Intrauterine devices — the optimal long-term contraceptive method? *J Reprod Med* 1999;44(3):269-74.
- Grimes D, Schulz K. Prophylactic antibiotics for intrauterine device insertion: a meta-analysis of the randomized controlled trials. *Contraception* 1999;60(2):57-63.
- Stewart GK. Intrauterine devices (IUDs). In Hatcher RA, Trussell J, Stewart F, et al., eds. *Contraceptive Technology, 17th ed.* New York: Ardent Media, Inc; 1998.
- Hubacher D, Fortney J. Follow-up visits after IUD insertion — are more better? *J Reprod Med*. 1999;44(9):801-06.
- Hubacher D, Lara-Ricalde R, Taylor DJ, et al. Use of copper intrauterine devices and the risk of tubal infertility among nulligravid women. *New England J Med* 2001;345(8):561-67.
- Morrison CS, Sekadde-Kigundu C, Miller WC, et al. Use of sexually transmitted disease risk assessment algorithms for selection of intrauterine device candidates. *Contraception* 1999;59(2):97-106.
- Rivera R, Chen-Mok M, McMullen S. Analysis of client characteristics that may affect early discontinuation of the TCu-380A IUD. Unpublished paper. Family Health International, 1999.
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