

Adolescents and the IUD: An Underutilized Contraception for a High-Risk Population

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The intrauterine device is a highly effective and easy-to-use contraceptive that is underused in sexually active young women.

While sexual activity is a normal part of adolescent development, teens and young adults have high rates of unintended pregnancy, putting millions of US teens at risk for early unplanned pregnancy.¹ Misconceptions among both patients and health care providers may result in many youth missing opportunities to utilize one type of easy-to-use and effective long-acting reversible contraception (LARC)—the intrauterine device (IUD).

In 2007, ACOG and other family planning experts recommended IUDs as a first-line option for contraception among adolescents.² Despite these recommendations, IUDs are used by less than 3% of adult American women and by an even lower percentage of teens.^{3,4} Well over 20 years of data confirm the safety of IUDs and eliminate most concerns regarding their use in adolescents.⁵ IUDs are generally well tolerated by the majority of women and have

higher continuation rates than most other contraceptive methods, including in nulliparous and adolescent populations.^{6,7} This article briefly reviews current evidence on IUDs, in order to dispel myths and allow clinicians greater confidence in recommending this effective contraception for adolescents and young adults.

IUDs AVAILABLE IN THE USA

While there are many versions of the IUD in international markets, in the United States, there are 2 FDA-approved devices: levonorgestrel-releasing intrauterine system (LNG-IUS, Mirena[®], Bayer HealthCare Pharmaceuticals) and copper IUD (Cu-IUD, ParaGard[®], Duramed Pharmaceuticals). LNG-IUS is approved for 5 years of use; Cu-IUD is approved for 10 years but with efficacy demonstrated up to 12 to 20 years.⁸

Additional FDA-approved indications for IUD insertion include Cu-IUD for emergency contraception and LNG-IUS for treatment of heavy menstrual bleeding in women who choose to use an IUD as their method of birth control. Benefits of IUDs include high contraceptive effectiveness, ease of adherence, and high continuation rates. IUDs can be used in patients with thrombophilia and when estrogen is contraindicated. LNG-IUS has shown some promise in the treatment of endometriosis, abnormal uterine bleeding, endometrial hyperplasia, and uterine fibroids.⁹

MECHANISM AND EFFICACY OF IUDs

Both FDA-approved IUDs' main mechanism of action is to prevent fertilization with contin-

FOCUSPOINT
IUDs are not abortifacients but do prevent conception.

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ued ovulation. While approximately half of women continue to ovulate with LNG-IUS during the first year of its use, the devices' main effect is to render both sperm and oocytes inactive. Substances released from the IUD (20 mcg levonorgestrel or copper ions) along with an inflammatory reaction are toxic to spermatozoa and oocytes, preventing gametes from meeting as well as forming viable embryos.¹⁰ First-year failure rates for typical use are less than 1% and comparable to a reversible sterilization.¹¹ Currently, IUDs are considered the most cost-effective reversible contraceptive strategy in the United States.¹²

REFUTING MYTHS AND TYPICAL CONCERNS

The overall risk for pelvic inflammatory disease (PID) with an IUD is the same as the risk without an IUD.¹³ While there is an increased risk for PID during the first 21 days of IUD use, this is most likely related to preexisting infection at time of insertion.¹⁴ PID rates are 9.7 per 1,000 women-years during days 1 to 20 following insertion, and they return to baseline general population rates of 1.4 per 1,000 women-years from day 21 on.¹⁵ It should be noted that the LNG-IUS may actually confer a protective effect against PID by thickening cervical mucous.¹⁶

As the incidence of PID in IUD users is low with or without antibiotics, there are no recommendations for prophylactic antibiotic treatment in the general population.^{17,18} However, prophylactic antibiotics have been shown to provide benefit in high-risk populations, reducing PID rate and return visits by one-third.¹⁹ Therefore, preinsertion sexually transmitted infection (STI) testing and antibiotic prophylaxis should be undertaken in adolescents, given the high rates of *Chlamydia* and gonorrhea in this age-group. Any evidence of infection, including bacterial vaginosis or *Trichomonas*, should be treated prior to insertion. Patients with cervicitis or PID diagnosed after insertion may leave the IUD in place, as long as there is clinical response in 48 hours.¹⁶ Clearly, patient education and counseling regarding condom use and STI prevention, as well as preinsertion STI testing and prophylaxis, are essential to

alleviating patient and provider concerns regarding risks for PID.

There is good evidence that IUDs have no impact on future fertility and that they may be safely used in nulliparous patients.^{5,20,21} Of note, while infection with *Chlamydia* is associated with tubal infertility, prior Cu-IUD use is not.²² IUDs do not cause increased risk for ectopic pregnancy, though a pregnancy occurring during IUD use has a risk of being ectopic.²³ If pregnancy does occur with an IUD in place, location must be determined immediately. In addition, IUDs have not been linked to breast, endometrial, or other cancers.^{24,25}

NONCONTRACEPTIVE BENEFITS OF IUDs

There is good evidence for LNG benefits for heavy menstrual bleeding, dysmenorrhea, and endometrial cancer protection.^{26,27} Over time, LNG-IUS significantly reduces menstrual blood loss or results in amenorrhea, while Cu-IUD typically leads to somewhat heavier, crampier periods, making the LNG-IUS a more attractive option for adolescents with heavy menstrual bleeding.^{28,29} Furthermore, LNG-IUS may alleviate symptoms of dysmenorrhea, a common problem for many adolescents.³⁰ HIV-positive IUD users may experience additional benefits with some improvement in anemia and with no demonstrated increases in viral shedding, overall complications, infection rates, or morbidity.³¹ Finally, effects such as weight gain, acne, and mood changes are infrequent with the LNG-IUS.

IUD USE IN NULLIPAROUS WOMEN/ADOLESCENTS

While there are a number of reviews about IUD use in younger and nulliparous populations, there is a need for additional studies focusing on IUD use in adolescents and young adults.³²⁻³⁴ Available literature reports suboptimal awareness of the device, misconceptions about safety and efficacy, and low positive regard/knowledge about IUDs among adolescents. Whitaker et al showed that less than 2% of women ages 15 to 24 ever used an IUD and that IUD use was associated with increasing parity and cohabitation/marriage, but not with previous ado-

FOCUSPOINT
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lescent pregnancy.³⁵

Only about 50% of already pregnant youth have heard of IUDs, while 71% were unsure of its safety and 58% unsure of its efficacy.³⁶ Reassuringly, it has been demonstrated that even a short 3-minute education session offered by a clinician can enhance positive regard for IUD.³⁷ Studies of IUD use in teens and nulliparous women report ability to tolerate insertion and continuation rates comparable to those of older women. In a study of nulliparous women ages 18 to 25, about 80% reported no pain to only mild/moderate pain with insertion of LNG-IUS.³⁸

Throughout use, nulliparous and adolescent patients seem to have expulsion rates for LNG-IUS comparable to those of parous women (less than 5%), though one review demonstrated both higher expulsion and removal for side effects of bleeding and pain with the Cu-IUD.^{6,39} A recent study in adolescents found continuation rates of 75% with LNG-IUS and 45% with Cu-IUD at 6 months after IUD insertion.⁴⁰ Finally, it is important to note that IUD has been shown to reduce the risk of repeat adolescent pregnancies.⁴¹

PREPARATION FOR INSERTION AND MINIMIZING SIDE EFFECTS

Most sexually active teens are eligible for IUD insertion. The only contraindications are possible pregnancy, cervical or uterine cancer, current or recent serious intrauterine or pelvic infections, and uterine anomalies/fibroids.⁴² Satisfaction and continuation may be enhanced with careful preinsertion counseling regarding management of expected and/or common side effects such as irregular bleeding, amenorrhea, and cramping, as these are the most common reasons for discontinuation.³⁹ NSAIDs are first-line management of bleeding and pain associated with IUD insertion and continued use.^{43,44} While misoprostol is often used prior to procedure, evidence regarding its benefit for ease of IUD insertion and alleviation of pain during insertion is mixed.^{45,46}

CONCLUSION

Despite the strong evidence demonstrating multiple benefits of IUDs, misinformation, cost, unfounded fears of adverse side effects, and clinician reluctance contribute to suboptimal utilization of this first-line highly effective and easy-to-use contraceptive.^{47,48}

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FOCUS POINT
IUDs do not cause infertility, ectopic pregnancies, or cancer.

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