

### METHODS

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#### Levonogestrel IUD (LNG-IUS)

Intrauterine device which releases the progestin levonogestrel. The contraceptive mechanism of action is through prevention of fertilization, primarily by thickening of cervical mucous and limiting sperm motility and function. The LNG-IUS is the only contraceptive to have FDA-approval for use to treat menorrhagia.

#### Copper IUD

Intrauterine device which releases copper. The contraceptive mechanism of action is through prevention of fertilization, primarily by limiting sperm motility and function.

#### Subdermal implant

Subdermal contraceptive implant which releases the progestin etonogestrel. The contraceptive mechanism of action is through prevention of ovulation. The progestin also thickens cervical mucous and alters the endometrium.

**No contraceptive methods are abortifacient.**

### APPROPRIATE CANDIDATES

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IUD (levonogestrel intrauterine system (LNG-IUS) and copper IUD) and subdermal implant should be considered first-line contraception for all reproductive-aged women. Age, parity, desire for future fertility and/or history of PID in the last 3 months, cervicitis or ectopic pregnancy are not contraindications for IUD and implant use.

ACOG endorses the use of IUD and subdermal implants as appropriate contraceptives for teens, nulliparous women, and for those who desire future pregnancy. IUD and subdermal implants are often optimal contraceptives for women with comorbid medical conditions (1-2).

All patients choosing IUD or implants have very high rates of use of the method (approximately 80% at one year); and higher continuation rates than are seen with OCP or injectable contraceptives (<50% at one year). For teens, continuation rates of IUD and implants are similar to adults (approximately 80% in some studies). However, continuation of OCP or injectable contraceptive in young women is often much lower than adult patients (as low as 20-40% in 6 months), thus making IUD and implants preferred contraceptive options for teens (3-6).

### INAPPROPRIATE CANDIDATES

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Inappropriate patients for IUD or subdermal implant use include those who have: current pregnancy, unexplained vaginal bleeding, breast cancer (LNG-IUS and subdermal implant), current cervicitis (both IUD), history of PID, septic abortion or puerperal infection within three months (both IUD), Wilson's disease (copper IUD), severe liver disease (relative contraindication for LNG-IUS and subdermal implant) (7).

### WHEN TO INSERT

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#### Preinsertion tests

Evaluation of patients pre-insertion should be tailored to individual patients based on medical need and current evidence-based screening recommendations. Pelvic exams are not required prior to implant placement, and pap smear testing is inappropriate for teens. Patients requesting an IUD should not be required to wait for STI screening prior to insertion since requiring patients to receive multiple visits increases risk for non-insertion.

#### Evaluation of Cervicitis

Evaluation for cervicitis should be performed at the time of insertion, or prior to insertion, for patients who are at risk for cervicitis; including adolescents. In asymptomatic patients, IUD insertion should not be delayed while waiting for results of cervicitis tests. Patients with an IUD in place can and should maintain their IUD while a new diagnosis of cervicitis is treated (7). The only indication to delay insertion of an IUD is if the patient shows clinical signs of cervicitis (mucopurulent discharge, etc.) at the time of attempted IUD insertion.

#### Mid-cycle insertion

IUDs and subdermal implants may be inserted safely at any time in the menstrual cycle, as long as the patient is confirmed not to be pregnant. Patients receiving mid-cycle insertion should abstain from sexual activity or use a barrier method of contraception for one week following insertion in order to allow the IUD or implant time to become effective.

#### Endometritis / PID

Overall risk of infection with IUD placement is uncommon, and less than 1%. This risk for endometritis is related to insertion, and returns to baseline risk within 3 weeks of insertion (8, 9). If patients have clinical signs of mucopurulent discharge or cervicitis when attempting to insert an IUD, insertion should be delayed.

### IUD: COMMON QUESTIONS ABOUT SIDE EFFECTS

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#### Menstrual irregularities

Irregular vaginal bleeding and oligomenorrhea/amenorrhea are common side effects with progestin-only contraceptives (including LNG-IUS and subdermal implant). Unscheduled vaginal bleeding is typically not heavy, but can be a significant deterrent for use or continuation of these contraceptive methods. It is important to counsel thoroughly patients pre-insertion regarding expected menstrual changes.

#### LNG-IUS

Irregular vaginal bleeding and spotting is common with LNG-IUS use, particularly within 6 months of insertion, and tend to improve with time. Within one year of use, nearly 40% of users experience amenorrhea (16).

#### Copper IUD

Irregular vaginal bleeding can occur in the first few menstrual cycles following insertion. It is common for patients to experience heavier menstrual flow with the copper IUD. This bleeding may improve with NSAID use (see below) (16).

Many patients with menstrual irregularity following IUD or subdermal implant insertion may be given reassurance and/or additional time to adjust to these changes. If patients require therapy, NSAIDs are the most commonly-utilized medication. Additionally, a short course of doxycycline or use of estrogen may improve some patients' symptoms.

### IMPLANT: COMMON QUESTIONS ABOUT SIDE EFFECTS

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#### Menstrual irregularities/vaginal bleeding

Unpredictable vaginal bleeding is common and affects the majority of users. Bleeding may range from amenorrhea to significant menstrual flow. Bleeding patterns may vary during implant use, and previous months' bleeding patterns will predict the next months' bleeding. Approximately 10-14% of users discontinue the subdermal implant due to dissatisfaction with menstrual bleeding. Amenorrhea is less likely with the subdermal implant when compared with the LNG-IUS or injectable contraception, with approximately 20% of users experiencing cessation of menses (14, 15).

## Weight changes

The subdermal implant can be associated with modest weight gain. Study results show either no significant change in weight or a small (less than 5lb) increase in weight over 2 years (18). IUD are not associated with weight changes.

## RECOMMENDATIONS FOR REDUCING VAGINAL BLEEDING

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### NSAIDS

Use of high-dose, continuous NSAIDs for a brief period may reduce vaginal bleeding experienced with IUD or subdermal implant users. Bleeding often recurs after completion of the therapy. Multiple regimens have been evaluated, and no regimen has been found to be superior. One common regimen is: ibuprofen 800mg po TID for 5 days (17).

### Other regimens

Expert recommendations and limited evidence indicate doxycycline and/or estrogen may also be useful in managing irregular bleeding associated with IUD or subdermal implants. Multiple formulations of estrogen have been studied. Low-dose oral contraceptive pills (taken for one to several months) is one commonly-used regimen. Another alternative is a brief course of doxycycline (100mg po BID for 7 days).

Persistent or unexpected vaginal bleeding patterns should be evaluated; including assessment for pregnancy, infection and uterine pathology.

## DISPELLING MYTHS ABOUT...

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### Infertility

Modern IUDs do not cause PID, and do not increase risk for developing PID if the patient acquires Chlamydia or gonorrhea while using an IUD. Tubal infertility is associated with upper genital tract infection (endometritis) and is not related to IUD use (10). Fertility returns immediately following IUD removal.

### Pregnancy / ectopic pregnancy

IUD and subdermal implant failure is rare (<1% per year), but delay of an expected menses or pregnancy symptoms should be evaluated immediately. In particular, IUD-users with a positive pregnancy test need rapid evaluation for ectopic pregnancy. If pregnancy is detected, the IUD or implant should be removed quickly.

### Pain

Most women, including teens or nulliparous women, have mild to moderate discomfort with IUD insertion, but most find this tolerable. Use of pre-insertion NSAIDs may improve post-insertion discomfort. Neither the use of lidocaine (11, 12) nor universal pre-insertion treatment with misoprostol has shown to decrease pain or ease insertion.

### Expulsion

IUD expulsion rates in teens and nulliparous women are similar to overall expulsion rates, ranging from 2-10% (13). Expulsion risks are highest in the first 3 months of IUD use, but can occur at any time. A follow-up visit to check the IUD strings may be performed in the first few months of use, and patients can be instructed on how to check their IUD at home.

## WHAT TO DO IF...

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### Missing strings

If patients or health care providers are unable to locate IUD strings, the patient should receive additional evaluation. Patients who are unable to feel their IUD strings should not rely on the IUD until the device is confirmed to be in the proper location. Short-acting hormonal contraception, such as OCP or injectable contraception, may be initiated until proper placement of an IUD is confirmed. Often, the IUD position can be confirmed with a speculum exam. However, if strings are not visualized on speculum exam, the patient should receive additional work-up, including urine pregnancy test and possible ultrasound. An abdominal x-ray is required to confirm IUD expulsion if the IUD is not located within the uterus on exam.

## Malpositioned IUD

Patient symptoms (including persistent cramping) or significant change in IUD string length should prompt evaluation. If the distal tip of the IUD is visualized on speculum exam, or if the IUD extends into the cervix on sonogram, the IUD is partially expelled. In these circumstances, the IUD should be removed (and replaced if desired). Ultrasound may be used to confirm appropriate position of the IUD at the uterine fundus when needed. A copper IUD is considered malpositioned and should be replaced if it is not at the uterine fundus (i.e.: if it is in the lower uterine segment).

### Discomfort after insertion

Mild discomfort in the first several weeks after IUD insertion is possible. This is self-limited for most women, and typically responds well to NSAID use. Patients with severe or persistent pain should be evaluated for complications including partial IUD expulsion or endometritis.

### Obese women

IUD and subdermal implants are ideal methods for use in obese women. **IUD efficacy is not affected by body weight.** The subdermal implant was initially studied only in women weighing less than 130% of ideal body weight. However, subsequent studies indicate the implant remains a highly-effective contraceptive in overweight and obese women, e.g.: Xu et al (19).

### Women with fibroids

Women with fibroids may be candidates to use IUD for contraception. The LNG-IUS is often particularly useful for women with menorrhagia associated with fibroids. Expulsion rates may be higher in the setting of fibroids (up to 13% in some studies). Experts recommend that IUD use is appropriate as long as it is technically feasible to place the IUD at the uterine fundus.

## IMPORTANT NOTE

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### Emergency contraception

The copper IUD is highly effective emergency contraception, with a 1% failure rate. It is particularly useful to use for patients who wish to continue use of the copper IUD for long-term contraception. The copper IUD should be inserted within 5 days of unprotected intercourse. If the patient has not seen a normal menstruation within 3 weeks of insertion, she should receive a pregnancy test.

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