



## **Intrauterine Contraception Today**

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An Intrauterine Contraceptive Devices is a device inserted into the uterine cavity and left for varying periods of time for the purpose of contraception. They are usually made up of polypropylene impregnated with barium sulphate, for visualizing them on x-rays. The intrauterine device (IUD) is the most cost-effective reversible method of contraception today. However, it is used by 14.5% of women of reproductive age group in developing countries and only 7.6% in developed countries. Intrauterine devices (IUDs) have been used throughout the world for more than three decades, with current usage at 127 million women worldwide. Highest use of intrauterine devices is found in Eastern Asia and the lowest in North America. Currently available intrauterine devices have evolved to the point in efficacy and safety which is comparable to oral contraceptives.

### **Types of IUD**

Most IUDs are copper (Cu) bearing devices. The copper devices are framed and frameless. In framed Cu devices Cu can be in sleeve form on the horizontal arm or it can be in the wire form on the vertical stem of the device. Cu T 380 has 380 sq. mm of copper content and the duration of use is 10 years. The Cu T 380 is the first choice IUD globally, as it has one of the lowest failure rates and the longest life span. Multiload 375 has 375 sq. mm of copper and the duration of use is 5 years. Gynefix is the frameless device having 330sq. mm of copper content and its duration of use is 5 years.

The levonorgestrel Intrauterine System is a T-shaped polyethylene device. The frame is 32 millimeter in both the horizontal and the vertical directions. The cylindrical reservoir around the vertical stem contains a mixture of silicone and 52 mg of levonorgestrel, a progestin widely used in implants, oral contraceptives, and vaginal rings. 25 microgram of levonorgestrel is released every day. A monofilament removal thread is attached to a loop at the end of the vertical stem. Mirena is packaged within a newly designed inserter, which is discarded after use. Mirena has an effective life of 5 years. Like other copper bearing IUDs, Mirena can be inserted within the first seven days of onset of menstruation.

In India, the available ones are Cu T 200, Cu T 220, Cu T 220B, (all three years) Cu T 380A (10 years), Multiload Cu 250 (3 years), Multiload Cu 375 (5 years) and Mirena (5 years).

### **Mode of action**

As copper is toxic to ovum and sperm, a Cu-IUD works primarily by inhibiting fertilization. In addition, the endometrial inflammatory reaction has an anti-implantation effect and alterations in the copper content of cervical mucus inhibit sperm penetration.

The LNG-IUS works primarily by its progestogenic effect on the endometrium preventing implantation. In addition, effects on cervical mucus reduce sperm penetration.

### **Which women are eligible for intrauterine contraception?**

Intrauterine contraceptive devices (IUD) offer safe, effective, long-term contraception and should be considered for all women who seek a reliable, reversible contraception that is effective before coitus.

A clinical history (including sexual history) and a thorough physical examination should be done before providing intrauterine contraception. Prior to IUD insertion, testing for C trachomatis and N

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gonorrhoeae is necessary only in women who are either at higher risk of STI. For women at higher risk of STIs, if results are unavailable before insertion prophylactic antibiotics (at least to cover *C trachomatis*) may be considered.

Following are the WHO category 3 where copper bearing IUD are not recommended.

1. Women at high risk of sexually transmitted infection
2. Heavy menstrual bleeding with clinical signs of anaemia
3. HIV infections/AIDS (immunodeficiency may enhance risk of pelvic infection)
4. Benign trophoblastic disease
5. Postpartum under 48hours (higher risk of expulsion)
6. Postpartum 48hours to less than 4weeks (higher risk of perforation)
7. Ovarian cancer awaiting treatment

Following are the WHO category 4 where copper bearing IUD are absolutely contraindicated

1. Pregnancy
2. Active sexually transmitted infections and pelvic inflammatory disease
3. Infection following childbirth/abortion
4. Unexplained vaginal bleeding
5. Severely distorted uterine cavity that prevents proper IUD insertion
6. Pelvic tuberculosis
7. Cervical or endometrial cancer awaiting treatment
8. Choriocarcinoma
9. Malignant gestational trophoblastic disease

Following situations do not generally restrict the use of IUDs

1. A past history of pelvic inflammatory disease
2. A past history of expulsion
3. A past history of ectopic pregnancy
4. Current or past breast cancer
5. Previous caesarean section
6. Nulliparity
7. Cervical intraepithelial neoplasia
8. Uterine fibroids with no distortion of the uterine cavity

## **Insertion**

### **Timing for insertion of IUD**

A Cu-IUD can be inserted at any time in the menstrual cycle if it is reasonably certain the woman is not pregnant. A Cu-IUD is effective immediately.

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The LNG-IUS can be inserted at any time in the menstrual cycle if it is reasonably certain the woman is not pregnant and the clinician is reasonably certain there is no risk of conception. Condoms or abstinence should be advised for 7 days after inserting the LNG-IUS unless inserted in the first 7 days of the cycle

Insert from 4 weeks postpartum as above

Ideally insert at the time of a first- or second-trimester surgical abortion for immediate contraceptive effect. Following medical or surgical abortion ideally insert within the first 48 hours or delay until 4 weeks post termination. However, waiting until 4 or more weeks post-termination may put women at risk of pregnancy. After counseling and when intrauterine contraception is the preferred method it can be inserted by an experienced clinician at any time post termination if there is no concern that the pregnancy is ongoing.

Intrauterine contraception can be inserted at any time if another method of contraception has been used consistently and correctly. Insert any time if it is reasonably certain that the woman is not pregnant. There is no need to wait for the next menstrual period or withdrawal bleed. A Cu-IUD is effective immediately. Condoms or abstinence may need to be advised for 7 days after inserting the LNG-IUS unless the current contraceptive method is still effective (e.g. <12 weeks since last progestogen-only injection; within 3 years of insertion of a subdermal implant; no later than Day 1 of the hormone-free interval for pills or patch)

### **Pain relief during insertion**

In most women IUD can be inserted without analgesia. In women when difficult insertion is anticipated oral NSAID or Para cervical block can be given.

### **Antibiotic prescription for insertion**

There is no need of antibiotic at insertion of IUD routinely, however if patient is at high risk for STI, she can be screened for it and appropriate antibiotic can be prescribed.

### **Side effects of IUD**

#### **Bleeding patterns and pain**

Spotting, light bleeding, heavier or prolonged bleeding are common in the first 3 to 6 months of Cu-IUD use. In cases of menorrhagia and pain with Copper IUDs, NSAIDs should be considered as first line therapy and if ineffective, tranexamic acid may be considered as second line therapy. Intermenstrual bleeding can occur primarily due to mechanical damage to the endometrium and subsides within one or two months. Irregular bleeding and spotting is common in the first 6 months after insertion of the LNG-IUS but by 1 year amenorrhoea or light bleeding is usual.

#### **Pelvic infection**

There may be an increased risk of pelvic infection in the 20 days following insertion of intrauterine contraception but the risk is the same as the non-IUD-using population thereafter.

Recent studies concluded that the newer IUDs, (especially LNG 20) do not increase the risk of pelvic inflammatory disease or tubal infertility when used in appropriately selected patients. However in 2006, Mohilajee AP et al from six prospective studies reported that women with chlamydial infection or gonorrhoea at the time of IUD insertion were at an increased risk of PID compared to women without infection.

#### **Risk of ectopic pregnancy**

WHO multicentre study reported that IUD users are 50% less likely to have ectopic pregnancy than women using no contraception and the incidence is 0.25 - 1.5 per 1000 women year.

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### **Perforation**

Incidence of uterine perforation is found less than 1 per 3000 insertions with newer devices such as MLCu 250, MLCu 375, CuT 380 Ag and Nova T. Since copper devices produce omental masses and adhesions and progesterone devices cause intra-peritoneal bleeding, they require urgent removal.

### **Expulsion**

Expulsion of intrauterine contraception occurs in approximately 1 in 20 women and is most common in the first 3 months after insertion and often during menstruation. In general, there are no differences in the rates of expulsion between different Cu-IUDs and between Cu-IUDs and the LNG-IUS.

### **Hormonal side effects**

With LNG-IUS, systemic absorption of progestogen occurs, however rates of discontinuation due to side effects (such as acne and headache) are not significantly different from Cu-IUD users.

### **Ovarian cysts**

Ovarian cysts may occur when using the LNG-IUS they are rarely a clinical problem.

### **Contraceptive efficacy**

Failure rates for intrauterine contraception at 5 years use are low, less than 2% with TCU380A and TCU380S and less than 1% with the LNG-IUS

### **Return to fertility**

There is no delay in return to fertility after removal of intrauterine contraception

### **Non-contraceptive benefits**

The LNG-IUS can be used in the management of idiopathic menorrhagia and/or to provide endometrial protection in conjunction with estrogen therapy