FOGSI - ICOG

Good Clinical Practice Recommendations

GCPR

Long Acting Reversible Contraceptives (LARC)

Convenor – Ashish Kale

Mentors – Hrishikesh D Pai, Madhuri Patel, Laxmi Shrikhande

Advisors – Sanjay Gupte

National Co-ordinators – Ashwini Kale

Co-ordinator – Surekha Tayade

FAMILY WELFARE COMMITTEE

FOGSI-ICOG
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SUMMARY OF RECOMMENDATIONS

Recommendations (Level of evidence)
Level A—Based on good and consistent scientific evidence
Level B—Based on limited or inconsistent scientific evidence
Level C—Based primarily on consensus and expert opinion
Good Practice Point (GPP)—Based on the clinical experience of guideline development group
NA—Not applicable

BACKGROUND

India has witnessed a substantial improvement in increasing access to modern contraceptives and reducing total fertility levels in last few decades. However, our country still has an inherent need for contraception as method of family planning (birth spacing and contraception) and to avoid maternal morbidity and mortality resulting from unintended pregnancies. Concerted efforts by the government have resulted in increasing modern contraceptive prevalence from 36.5% (NFHS I) to 47.8% (NFHS IV) and 56.5% (NFHS V); however, 9.4% (NFHS V) of eligible couples still have an unmet need for contraception in different phases of reproductive life span.[1] Previous studies have reported abortions accounting for 8% of total maternal mortalities. Almost 30% of these deaths can be prevented by increasing access to family planning methods.[2] Further 10% of child mortality can be prevented if couples space their pregnancies more than 2 years apart. Appropriate use of spacing methods of contraception can save women's lives and improve health due to a reduction in unwanted, closely spaced, and mistimed pregnancies, thus avoiding pregnancies with higher risks and reducing chances of abortions, many of which may be unsafe.

Long-acting reversible contraceptive (LARC) is the most effective reversible contraceptive method. The major advantage of LARC compared with other reversible contraceptive methods is its long-term and effective use without any effort by the user and its rapid return to fertility after device removal.[3] LARCs are recommended as first-line form of contraception internationally due to their superior efficacy and safety profile and have been endorsed by the American Academy of Pediatrics, the American College of Obstetricians and Gynecologists (ACOG), the WHO, and other international organizations. These methods are especially well suited to adolescents and young adults (AYAs), who have the highest rates of unintended pregnancies.[4]

GLOBAL EVIDENCE

Women's control over their own fertility forms the foundation of reproductive rights and is the mainstay of the Family Planning Program. The vicious cycle of unintended pregnancies and unwanted births or abortions is corroborated by the fact that the return of fertility may be as early as 4 weeks (even before return of menses) after delivery and 10 days after abortion.

Globally, IUCD is the second most popular contraceptive method after female sterilization, accounting for 13.7% of modern contraceptive prevalence rate.[5] The prevalence of IUCD is highest in countries of Central Asia (Kazakhstan, Uzbekistan), and Western Asia (Jordan). In India, IUCD was introduced in 1965 under the National Family Planning Program, which was later upgraded to Copper IUCD 380 A (popularly known as Copper T) in the 1990s and introduction of Copper IUCD 375 in 2010. Despite increasing the contraceptive options under the program, IUCD usage in India witnessed a decline from 2.0% in NFHS I (1992–93) to 1.5% in NFHS 4 (2015–16). This indicates the need to improve provider counseling skills as well as improve contraceptive demand through a comprehensive approach.

To improve the coverage of more women with long-term contraception, postpartum IUCD (PPIUCD) was introduced in the National Family Planning Program in 2009–10 (reference). India is now the global leader in PPIUCD services. This has improved the IUCD usage according to latest NFHS-5, which has reported a rise to 2.1% as compared to 1.5% in NFHS-4.[1] One of the main key strategies for success of PPIUCD in India has been tapping into the early postpartum period while the beneficiary is still at the health facility.

DMPA is the fourth most prevalent contraceptive and is widely used as an effective, safe, and acceptable method of contraception across the world. The 3-month DMPA was approved as a contraceptive by the US FDA in February 1992.[6] It is estimated that currently, an estimated 42 million women worldwide use injectables as a method of choice. India and some of the neighboring countries offer DMPA in their government-run family planning programs, which contribute significantly to their contraceptive method mix for women requiring family planning services. Wide coverage of this injectable LARC

in many countries of Asia, Africa, and South America has shown that it can be delivered in non-clinical settings through community-based workers after appropriate training on counseling, client selection and screening, safe administration of injection, follow-up care, etc. with comparable rates of acceptability and continuation.

The single-rod Implant (Implanon) is the latest to the LARC basket, with excellent safety, a highly effective method, with long duration of action (3 years post-insertion) and a rapid return to normal menstrual cycle as well as fertility after removal. Phase III multi-center clinical trial with Subdermal Single-Rod Contraceptive Implant-Implanon-ICMR Task Force Study (2004–2012) reported implant as efficacious and acceptable method of contraception with a cumulative continuation rate of 66.1 per 100 users at 3 years.[7] Rapid return of fertility has also been reported among Indian women using Norplant-II subdermal implant.[8]

PURPOSE AND SCOPE

The present document discusses about available LARC methods, their benefits for reproductive-age women, and decision criteria to choose among different LARC methods for individual women. The document also discusses the non-contraceptive benefits of LARC methods. LARC may provide effective methods of contraceptive with minimal compliance issues by the user and may prevent unwanted pregnancies and their complications.

LARC methods can be used for spacing of pregnancies and for those who have completed their families as just permanent methods of contraception.

The guideline will describe:

- Different LARC methods
- Indications and contraindications of different LARC methods
- Special situations and individual decisions and choices
- Interactions and choice in different medical and surgical indications
- Non-contraceptive benefits of LARC

TARGET AUDIENCE

This GCPR provides a comprehensive knowledge about various LARC methods and is meant for Obstetricians and Gynecologists, general practitioners, midwives, and ASHA workers. This manual will not only help in enhancing the knowledge and skills of service providers in providing quality IUCD services but will also help in improving the acceptance and continuation rates for IUCD and lead to client satisfaction.

METHODOLOGY

These GCPRs, given by the Federation of Obstetric and Gynecological Societies of India (FOGSI), followed the process mentioned in RCOG "Guideline for Guideline Development—2020". The topic was selected and approved, and a task force was formulated. The core group was identified, and the timelines were discussed and communicated. The scope of the guideline was drafted, objectives were framed, and the stakeholders were listed and incorporated into the scope. A systematic review of the literature was conducted to provide the best possible evidence base for the GCPR. Existing guidelines, meta-analyses, systematic reviews, and key articles on LARC and their recommendations in different countries and by different societies were reviewed by the core group, and recommendations relevant to the Indian scenario were framed. These recommendations review the available evidence in the field by the members of the task force, which include eminent obstetricians and gynecologists. The guideline was peer reviewed by experts, multiple times, and feedback was incorporated. No conflict of interest or good standing was appropriately expressed by all concerned for professional, personal, or non-personal interest, either financial or nonfinancial.

DIFFERENT TYPES OF LARC METHODS

Three types are available in India:

I. Intrauterine devices (IUDs)
II. Injectable contraceptives (DMPA and subcutaneous injection)
III. Etonogestrel single-rod contraceptive implant

I. IUDs:

- **IUCD:** Copper containing IUCDs are a highly effective method for long-term birth spacing. Under National Family Welfare Program, 2 types of Cu IUCD are provided, i.e., Cu IUCD 380A (10 years) and Cu IUCD 375 (5 years).[9]
- **LNG-IUS:** LNG-IUS is a second-generation progestin containing 52 mg 19-nortestosterone and releases 20 µg/24 hrs in 1st year and 15 µg/24 hrs over 5 years. *It is not yet available under National Family Planning Program but client can buy and use for contraception.*

II. Injectable contraceptives: The injectable contraceptives contain synthetic hormones resembling the natural female hormones. When administered (IM/SC), there is a slow release of hormone into the blood stream, and it provides protection from pregnancy for a long duration of time to the client.[10]

There are two main types of injectable contraceptives:

1. Progestogen-only Injectables (POI): Containing only synthetic progesterone. They are of two types: (a) Depot MedroxyProgesterone Acetate (DMPA)—150 mg, 3 monthly IM injection (MPA-IM) and lower dose MPA-SC (104 mg/0.65 mL) but therapeutically equivalent to the IM formulation and (b) Norethisterone enanthate (NET-EN)—2 monthly injection.
2. Combined Injectables Contraceptive (CIC): Containing estrogen (usually ethinylestradiol) and progesterone—1 monthly injection.

Under the National Family Planning Program, DMPA injectable contraceptive have been added to the contraceptive basket of choice. MPA-IM is available as "Antra" and MPA-SC is recently added under National Family Program in May 2023.

III. Contraceptive implants: The contraceptive implants were introduced almost three decades ago and are one of the most effective long acting reversible (LARC) methods of contraception. Much progress has been made in the technology since the introduction of the first generation Norplant in 1983, from 6 rods (Levonorgestrel containing—Norplant) to a single rod (Etonogestrel containing—Implanon NXT). Some of the latest versions offer contraception for as long as 5 years after insertion. As implants do not contain estrogen, they do not affect production of breast milk and are thus suitable for breastfeeding women in the immediate postpartum period. Nexplanon (NXT) is a single rod containing Etonogestrel (ETG 68 mg), effective for up to 3 years of use.

The Government of India (GOI) expanded the contraceptive basket under National Family Planning Program to provide more choices in postpartum period and offer an effective long-acting reversible contraceptive choice, by the inclusion of subdermal contraceptive implants (single rod) in the year 2023.[7]

MECHANISM OF ACTION AND CONTRACEPTIVE EFFICACY

Table 1 describes the mechanism of action and contraceptive efficacy of different LARC methods.

Table 1 Mechanism of action of different LARC methods and contraceptive efficacy

Mechanism of Action			
Copper-IUD	***LNG-IUS***	***Injectable contraceptives***	***Contraceptive implants***
• Decreases sperm motility • Alters uterine & tubal fluid environment • Stimulates foreign body reaction in the endometrium	• Decreases sperm motility • Stimulates foreign body reaction in the endometrium • Thickening of cervical mucus • Thinning of endometrial lining	• Inhibits ovulation by suppressing mid cycle peaks of LH & FSH • Thickening of cervical mucus • Thinning of endometrial lining	• Inhibits ovulation by suppressing mid cycle peaks of LH & FSH • Thickening of cervical mucus • Thinning of endometrial lining
Contraceptive Efficacy			
• It is effective immediately after insertion • Effectiveness – comparable to permanent methods like sterilization • Failure rate: Less than 1% in the first year of use	• It is 99% effective • 5-year cumulative pregnancy rate: 0.5–1.1%	• Effectiveness (if used correctly): 99.7% • The perfect use failure rate: 0.3%	• Effectiveness: 99.9%

Shelf Life of LARC Methods

The expiry date on the IUCD/implant package refers only to the shelf life of the sterility of the package and not to the contraceptive effectiveness of the LARC. This means that even if an IUCD/implant is inserted on the day before the expiry date, it is still effective for the full life-span of contraceptive efficacy. After the expiry date, the package should be discarded.

Tarnishing: Sometimes the copper on copper-bearing IUCDs tarnishes (i.e., the color darkens), causing concern among providers about the safety and effectiveness of the IUCD. All available evidences suggest that tarnished IUCDs are safe and effective and can be inserted. Therefore, unless the IUCD package is torn or opened (or the shelf life has expired), a tarnished IUCD is still sterile, safe to use, and effective.

Return of Fertility after Removal of LARC

Return of fertility after removal of LARC methods (except DMPA) is immediate and next method/device should be inserted immediately.[8] **Table 2** describes the return of fertility after removing different LARC methods.

Table 2 Return of fertility after removing different LARC methods

LARC methods	*Return of fertility*	*Remarks*
IUCD	Immediately	Another IUCD should be inserted immediately after removal or an alternate contraceptive method should be advised unless she wants to conceive
LNG-IUS	Immediately	-
Injectable contraceptives	May cause delay in return of fertility, usually 7–10 months from date of last injection	Studies have shown that ovulation/fertility return is not affected by duration of DMPA use or women's age
Contraceptive implants	Immediately	Another implant should be inserted immediately after removal or an alternate contraceptive method should be advised unless she wants to conceive

Benefits of LARC Contraceptive Methods

- **IUCD**
  Contraceptive:
  - Long-term and highly effective
  - Effective immediately after insertion
  - Suitable for use by most women
  - Safe in breastfeeding women
  - Can be used as an emergency contraceptive
  - One-time cost-effective procedure
  - No requirement of daily attention
  - No special attention before sexual intercourse
  - Immediate return of fertility upon removal
  - No drug interaction

  Non-contraceptive: May help protect against endometrial and cervical cancer
- **LNG-IUS**
  Contraceptive:
  - Long-term and highly effective
  - Effective immediately after insertion
  - Suitable for use by most women
  - Safe in breastfeeding women
  - One-time cost-effective procedure
  - No requirement of daily attention
  - No special attention before sexual intercourse

- Immediate return of fertility upon removal
- No drug interaction

Non-contraceptive:

- Control of dysmenorrhea and pain (due to endometriosis/adenomyosis)
- Prevention and/or treatment of endometrial hyperplasia in women with polycystic ovary syndrome (PCOS)
- As a progesterone source with estrogen use (HRT)
- Primary menorrhagia and menorrhagia associated with fibroids and/or adenomyosis

- **Injectable contraceptives**

Contraceptive:

- Safe and highly effective
- Suitable for use by most women
- Convenient and easy to use
- Acts for 3 months with a grace period of 4 weeks
- Completely reversible: 7–10 months from date of last injection (average 4–6 months after 3 months effectivity of last injection is over)
- Private and confidential method
- Does not interfere with sexual intercourse/pleasure
- Pelvic examination is not required prior to use
- Suitable for women who are not eligible to use OCPs
- Suitable for breastfeeding women (after 6 weeks postpartum)
- Provides immediate postpartum (in non-breastfeeding women) and post-abortion contraception

Non contraceptive:

- May decrease menstrual cramps and reduce pre-menstrual syndrome/tension
- Improves anemia by reducing menstrual blood loss
- Reduces the symptoms of endometriosis
- Decreases benign breast disease and ovarian cyst
- Helps prevent uterine tumors (fibroids)
- Reduces the incidence of symptomatic pelvic inflammatory disease (PID)
- Protect against endometrial cancer and possibly ovarian cancer
- Reduces sickle-cell crises in women with sickle cell anemia
- Protects against ectopic pregnancy (since ovulation does not occur)
- Minimal drug interactions—no demonstrable interaction has been found between DMPA and antibiotics/enzyme-inducing drugs

- **Contraceptive implants**

Contraceptive:

- Safe and highly effective
- Suitable for use by most women
- A walk-in procedure, once inserted, is effective for 3 years, hence better compliance
- Completely reversible with an early return to fertility
- Does not interfere with sexual intercourse and pleasure
- Pelvic examination is not required prior to use
- Suitable for women who are not eligible to use an estrogen-containing contraceptive method
- Suitable for even those women who have blood pressure >160/100 mm Hg, diabetes >20 years of duration, with end organ damages, or other vascular diseases
- Suitable for breastfeeding women
- Does not affect the newborn, so it can be initiated immediately after delivery

Non-contraceptive:

- Helps protect against risks of pregnancy, including ectopic pregnancy
- Protects from symptomatic pelvic inflammatory disease
- Improves anemia by reducing menstrual blood loss due to menstrual changes such as amenorrhea

LIMITATIONS

IUCD/LNG-IUS:

- Require insertion by a trained service provider
- It requires a mandatory pelvic examination before insertion
- It does not provide protection against RTIs/STIs and HIV infection

DMPA:

- It does not protect against STI/RTI and HIV infection
- Once taken, its action cannot be stopped immediately
- It has to be repeated every 3 months to achieve desired contraceptive effectiveness
- Return of fertility takes 7–10 months from date of last injection

Contraceptive Implant:

- Require a minor procedure for insertion and removal by a trained service provider
- Changes in menstrual bleeding patterns are common
- May be visible under the skin in some women
- Doesn't protect women from reproductive tract infections (RTIs) and sexually transmitted infections (STIs), including HIV/AIDS

Side Effects

Table 3 describes the side effects of various LARC methods and their management

Table 3 Side effect profiles of different LARC methods and their management

Side effects	*IUCD*	*LNG-IUS*	*Injectable contraceptives (MPA-IM/MPA-SC)*	*Contraceptive implants*	*Management*
Menstrual irregularity (Irregular—frequent/ infrequent/ prolonged/heavy bleeding)	+	+	+	+	• NSAIDs (Tab Mefenamic Acid 500 mg TDS during bleeding episodes) • Anti-fibrinolytic therapy (tranexamic acid)—Tab Tranexamic acid 500–650 mg 3–4 times a day during bleeding episodes • Combined oral contraceptive (COC)—COC containing 30 mcg ethinyl estradiol (EE) can be prescribed for women experiencing prolonged bleeding episodes. This may be prescribed for 2–3 cycles. OD for 21 days
Cramps during menstrual bleeding	+	+	–	–	NSAIDs ((Tab Mefenamic Acid 500 mg TDS during bleeding episodes)
Amenorrhea	–	+	+	+	Reassurance/counseling
Pain lower abdomen	+	+	–	–	NSAIDs ((Tab Mefenamic Acid 500 mg TDS during bleeding episodes, ibuprofen, paracetamol, antispasmodic)—Rule out STI/PID/Malposition of IUD
Weight gain[11]	+	+	+	+	Not significant Reassurance/counseling
Headache	–	–	+	+	Symptomatic treatment
Changes in mood or sex drive	–	–	+	+	• Reassurance/counseling • Appropriate referral in case of severe depression • Locally available remedies
Mastalgia	–	–	+	+	• Reassurance/counseling • Rule out infection • Symptomatic treatment like cold compresses, pain killers, and antibiotics

Contd...

Contd...

Side effects	*IUCD*	*LNG-IUS*	*Injectable contraceptives (MPA-IM/MPA-SC)*	*Contraceptive implants*	*Management*
Acne	–	+	+	+	• 10% report new onset acne and 10% report worsening acne[12] • Topical/systemic medications • Tab spironolactone 50–200 mg daily • Topical therapies include retinoic acid, benzoyl peroxide, or antibiotics
Vaginitis/leukorrhea	–			+	Very rarely seen

WHO—MEDICAL ELIGIBILITY CRITERIA (MEC)[13]

Medical eligibility criteria (MEC) for individual contraceptives and for individual users are defined as four categories according to safety of use in specific conditions. Four categories are:

Category 1	A condition for which there is no restriction on the use of the contraceptive method
Category 2	A condition where the advantages of using the method generally outweigh the theoretical or proven risks
Category 3	A condition where the theoretical or proven risks usually outweigh the advantages of using the method
Category 4	A condition that represents an unacceptable health risk if the contraceptive method is used

Table 4 describes the absolute contraindications of different LARC methods according to WHO medical eligibility criteria (category 4). Current/suspected pregnancy is a contraindication for all types of contraceptive methods.

Table 4 Absolute contraindications (WHO MEC category 4)

IUD (Cu-IUD/LNG-IUS)	*Injectable contraceptives (MPA-IM/MPA-SC)*	*Contraceptive implants*
• Unexplained vaginal bleeding • Fever and infection during labor • Prolonged rupture of membrane for more than 18 hours • Active lower genital tract infection and Sexually Transmitted Disease (STD) • Unresolved postpartum hemorrhage (PPH) • Postpartum endometritis • Manual removal of placenta • Infected abortion during past 3 months • AIDS, but no antiretroviral therapy or access to care • Ovarian cancer, malignant trophoblastic disease • Coagulation disorders • Lupus with severe thrombocytopenia • Uterine anomalies/Distorted uterine cavity • Second or third degree uterine prolapse • Vesicovaginal fistula (VVF) • Known pelvic tuberculosis • Cervicitis • Cervical dysplasia	• Breastfeeding woman <6 weeks postpartum • BP 160/100 mm Hg or more • Unexplained vaginal bleeding • Breast cancer (current or past history) • Liver tumors • Severe decompensated cirrhosis • Diabetes with end organ damage or vascular disease • Positive APLA antibodies • SLE with Severe thrombocytopenia • Current or history of stroke and Ischemic heart disease • Acute DVT/PE	• Acute deep vein thrombosis (DVT)/ pulmonary embolism (PE) • Severe liver disease (cirrhosis, hepatocellular adenoma, and malignant hepatoma) • Unexplained vaginal bleeding • Certain cases of systemic lupus erythematosus (positive antiphospholipid antibodies) • Ischemic heart disease, Stroke, Migraine with aura (only continuation of the method is restricted in this situation)

*Heavy/prolonged or painful menstrual bleeding (LNG-IUS is preferred)

COUNSELING

Counseling is a client-provider interaction, to facilitate or confirm a decision by the client or address the problems/concerns of the client, if any.

The counseling process includes:
- General counseling (during first contact with the client)
- Method specific counseling (once the client has chosen the specific method)
- Post-insertion counseling
- Follow-up counseling (during return visits)
- Pre-removal counseling
- Counseling in special scenarios (like post-partum period, adolescents, retro-positive patients, etc.)

Benefits of counseling:
- Increase acceptance of contraceptive methods
- Dispels myths and misconception about the methods
- Increase client satisfaction
- Enhances continuation of methods
- Promote their effective use

Timing of Insertion/Initiation: **Tables 5A to C** describes the different time points in reproductive life span when LARC methods can be inserted.

Table 5A Insertion of Copper-IUCD

Different times for insertion of IUCD	
Interval	• Anytime during the menstrual cycle after ensuring that woman is not pregnant • Immediately while switching from another method of contraception, and any time 6 weeks postpartum
Post-partum	• Within 10 minutes after delivery of placenta following delivery (post placental) • Within 48 hours of delivery and during caesarean delivery after removal of placenta and before uterine incision closure (intra-caesarean) • During lactational amenorrhea, anytime provided pregnancy is ruled out
Post-abortal	• Immediately or within 12 days of an surgical abortion, after ensuring that the abortion is complete and no injury or infection of genital tract • Around 15 days of medical method of abortion (MMA), provided abortion process is complete and infection is ruled out
Emergency contraception	• Within 5 days of unprotected sex as an emergency contraception

LNG-IUS
- Within 7 days of menstrual cycle, if inserted after 7 days, a barrier contraceptive method for 7 days to be used along with the same.
- Any time during the menstrual cycle if the women are reasonably sure that she is not pregnant.
- It can be used as an emergency contraception (only in a research setting).

Table 5B DMPA (Initiation)

Condition	***Timing***	***Need for backup contraception***
Normal menstruating female	First injection can be given anytime if it is reasonably certain that the woman is not pregnant	• If Injection is started within the first 7 days since menstrual bleeding started, no additional contraceptive protection is needed. • If Injection is started >7 days since menstrual bleeding started, the woman needs to abstain from sexual intercourse or use additional contraceptive protection for the next 7 days.

Contd...

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Condition	***Timing***	***Need for backup contraception***
Postpartum (Breastfeeding)		
<6 months	Anytime between 6 weeks and 6 months	• If she is fully or nearly fully breastfeeding and her monthly bleeding has not returned. No need for a backup method. • If she is partially breastfeeding and her monthly bleeding has not returned and if it is reasonably certain that the woman is not pregnant. She will need a backup method (e.g., Condom) for the first 7 days after DMPA injection.
>6 months	Can be started anytime, if her monthly bleeding has not returned and if it is reasonably certain that the woman is not pregnant.	She will need a backup method (e.g., Condom) for the first 7 days after DMPA injection.
Postpartum (not breastfeeding)		
<4 weeks	Can be started at any time.	No need for a backup method.
>4 weeks	• Can be started any time, if her monthly bleeding has not returned and if it is reasonably certain that the woman is not pregnant. • If her monthly bleeding has returned, she can start injectable as advised for women having menstrual cycles.	She will need a backup (e.g., Condom) method for the first 7 days after the injection.
Amenorrhea (not due to childbirth or lactation)	Can be started any time if it is reasonably certain that the woman is not pregnant.	She will need a backup method (e.g., Condom) for the first 7 days after the injection.
Post abortion	• Can be started immediately after abortion or within 7 days of first or second-trimester miscarriage/abortion. • Can also be started after more than 7 days of first or second trimester miscarriage/abortion, any time, if it is reasonably certain that the woman is not pregnant.	• No need for a backup method. • She will need a backup method (e.g., Condom) for the first 7 days after the injection.
After taking emergency contraceptive pills (ECPs)		
	Can be started on the same day as the ECPs.	
	Can also be started within 7 days of monthly bleeding. She should be asked to return, if she has signs or symptoms of pregnancy other than amenorrhea.	A backup method (e.g., Condom) will be required for next 7 days.

Table 5C Contraceptive implant insertion/initiation

Different times for insertion of Implants	
Normally menstruating female	• Anytime during the menstrual cycle after ensuring that woman is not pregnant (if within 7 days—no backup method required, if >7 days—backup method will be required for first 7 days). • Immediately while switching from another method of contraception, and any time 6 weeks postpartum.
Postpartum (Can be started immediately after delivery, irrespective of breastfeeding status)	
Breastfeeding	• Fully breastfeeding: Can be started anytime during lactation amenorrhea and no need of backup method. • Partially breastfeeding: Can be inserted anytime, if monthly bleeding is not returned than backup method required for first 7 days of insertion.
Non-breastfeeding	• <4 weeks: Anytime and no need for backup method. • >4 weeks: No bleeding-anytime with backup methods for first 7 days of insertion, if bleeding returned than insertion is similar for women with normal menstrual cycle.

Contd...

Contd...

Post-abortion	
Surgical abortion	• Immediately or within 7 days after first or second trimester miscarriage or abortion. No need for backup method.
Medical abortion	• On 3rd day of medical abortion protocol
Other situations	
Amenorrhea (not related to pregnancy or delivery)	• Anytime if it is certain that the woman is not pregnant. A backup method is required for first 7 days of insertion.
After taking emergency contraceptive pill (ECP)	• Can be started on the same day or any day after taking ECP, if it is certain that the woman is not pregnant. A backup method is required for first 7 days of insertion.

IMPLANT INSERTION AND REMOVAL PROCEDURE

Insertion of Implant[7]

- A minor procedure and takes only a few minutes by a skilled provider.
- Insertion: done in an examination room in an outpatient clinic or a minor surgery room in a hospital, health facility, or in postnatal room.
- Clients can wear their own clothing, provided it is clean, and sleeves are not skintight.
- Service providers do not have to wear a cap, mask, or gown under routine circumstances.

Removal of Implant[7]

An implant, which is inserted correctly at the subdermal plane, can be easily removed by standard removal procedures. However, difficult removal requires special skills and an equipped facility. It is recommended that providers should locate the implant immediately prior to the removal process. No attempt should be made to remove implant unless its exact location is identified.

A non-palpable implant should always be located prior to attempting removal. Confirm its presence in the arm with imaging techniques. In rare circumstances, if the rod is not palpable or palpable deeply, 2-dimensional X-ray and ultrasound scanning with a high-frequency linear array transducer (10 MHz or greater) can be used. An implant is a small echogenic spot of size 2 mm, when viewed in a transverse position and appears as a sharp acoustic shadow below the implant in a transverse position. Computed tomography (CT) scan or magnetic resonance imaging (MRI) may also be used to locate the implant. It is recommended, that in case of difficult removals, the client may be referred to a higher-level facility to a more experienced provider for removal.

INTERACTION WITH OTHER DRUGS

IUD: IUDs are inert substances and no drug interaction is reported with these LARC methods.
Injectable contraceptive: Efficacy of MPA is not reduced with concurrent use of enzyme inducing drugs.

Contraceptive Implant

Interactions can occur with medicinal or herbal products that induce microsomal enzymes, specifically cytochrome P450 enzymes, which can result in increased clearance of sex hormones, and may decrease the effectiveness of 68 mg Etonogestrel implant. Women receiving any of the hepatic enzyme-inducing drugs or herbal products should be counseled about possible reduction in contraceptive efficacy of implant. It is recommended to use backup non-hormonal contraception or the use of an intrauterine device to avoid unintended pregnancies **(Table 6)**.

Table 6 Various drug interactions with Etonogetrel (ETG) implant

Drugs	
Hepatic enzyme inducers • Anti-epileptics—Topiramate, Lamotrigine, Carbamazepine, oxcarbazepine, Phenobarbital[14,15] • Anti-retroviral drugs—Efavirenz, Etravirine, Nevirapine, Ritonavir[16] • Anti-tubercular-Rifampicin[14]	Increased metabolism due to increased enzyme activity; decreases the available ENG levels below threshold thus decreasing efficacy
Antibiotics—Ciprofloxacin, Clarithromycin, Erythromycin, Griseofulvin Anti-fungal drugs—Fluconazole, Itraconazole, ketoconazole, Voriconazole	These drugs can raise risk of side effects by decreasing ETG metabolism and increasing its levels
Oral hypoglycemic agents—Metformin	Etonogestrel may interfere with blood glucose control and reduce the effectiveness of metformin
Herbs (St. John's Wort)	Taking St. John's Wort could make implanon less effective. (St. John's Wort is an herbal supplement for treating conditions such as depression)
Bosentan, Aprepitant	Make less effective

USE OF LARC METHODS IN SPECIAL SITUATIONS

- **Adolescents[15]**

  All contraceptives are safe for young people. Unmarried and married adolescent females may have different sexual and reproductive health needs.

  Implants, copper-bearing IUDs, and LNG-IUDs may be good choices for many young women because:
  - These methods are very effective, safe, and maintain privacy.
  - Long term and are quickly reversible.
- **Perimenopausal women**

Menopause usually occurs between the ages of 45 and 55. About half of women reach menopause by age 50. By age 55, approximately 96% of women have reached menopause.

To prevent pregnancy until it is clear that she is no longer fertile, an older woman can use any method, if she has no medical condition that limits its use. By itself, age does not restrict a woman from using any contraceptive method.

When Should a Woman Stop Using Contraception

WHO recommends a woman should continue using a family planning method until 12 months with no bleeding have passed. Once there is no bleeding for 12 months in a row, she can stop using contraception.

Copper-bearing IUDs can be left in place and should be removed 12 months after a woman's last monthly bleeding.

Federation of Obstetrics and Gynecology Society (FOGSI) Notification (2019)

FOGSI endorses contraceptive implants as an efficient, reliable, long-term method for contraception.

- It is an alternative for women who prefer not to think about birth control every day, week, or month but want a method that is effective independent of user behavior.
- As these are subdermal implants, the training of providers in the technique of insertion is essential before they attempt first insertion.
- The training also enables the provider to counsel women on the benefits and side effects associated with implant use, to select appropriate users and the correct time of insertion.
- *FOGSI recommends that implants are a promising, effective method of contraception and that should be available as an option for contraception.*

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ANNEXURE 1

Table Comparison of effect on body composition (weight gain) and bone mineral density (BMD) among different LARC methods

Special consideration	*IUCD*	*LNG-IUS*	*Injectable contraceptive (MPA-IM/MPA-SC)*	*Contraceptive implants*	*Special remarks*
Bone mineral density (BMD)	_	_	Its use is associated with a small loss of BMD which is usually recovered after discontinuation of injection.[10]	_	The progesterone hormone (etonogestrel) in the single-rod implant suppresses only ovulation and it does not fully suppress the ovarian activity. Hence the natural estrogen levels are maintained in the body. As a result, bone mineral density remains unaltered over its effective period of 3 years.
Body weight gain	No significant weight gain	No significant weight gain	It is associated with weight gain and with overweight adolescents more susceptible to weight gain than normal weight adolescents.	A little increase in weight gain was noticed in trials but it is not statistically significant when compared to IUCD.	_

ANNEXURE 2

Table Guidelines and recommendations for the use of different LARC methods in different situations. These guidelines have been adopted from the American College of Obstetricians and Gynecologists (ACOG) and the Faculty of Sexual & Reproductive Healthcare (FSHR) 2023

Recommendations	*IUCD*	*LNG-IUS*	*Injectables*	*Implants*
Timing of insertion				
Immediately after first-trimester uterine aspiration	A	A	A	A
Immediately after confirmed completion of first-trimester medication-induced abortion	B	B	B	B
Immediately after second-trimester abortion	B	B	A	A
Any time during the menstrual cycle as long as pregnancy may be reasonably excluded	B	B	B	B
Postpartum: • Post-Placental: Within 10 minutes after placental delivery in vaginal and caesarean births • Within 48 hours of delivery	 B B	 B B	 NA C	 NA B
Emergency contraception	C	C (*research setting only*)	NA	NA
Non-contraceptive benefits				
Management of heavy menstrual bleeding (HMB) and dysmenorrhea	NA	C	NA	NA
Endometriosis (pain reduction)	NA	C	B	NA
Special situations				
Adolescents (choice should be given to the client after explaining all the available options)	B	C	C	B
Nulliparous/who has never been sexually active	B	C	-	B

Contd...

Contd...

Recommendations	***IUCD***	***LNG-IUS***	***Injectables***	***Implants***
Perimenopausal women (only GPP available) **IUCD**: >40 years—Remove after 1 year of menopause (if menopause occurs at 50 years) **LNG-IUS:** In <45 years for 6 years >45 years: till 55 years **DMPA-**Women using DMPA who wish to continue use should be reviewed every 2 years to assess individual situations and discuss the benefits and potential risks	GPP	GPP	**GPP** .	-
Previous history of ectopic pregnancy	B	B	B	B
For women who are at increased risk of STIs and have not yet been screened for STIs	B	B	B	B
No routine antibiotic prophylaxis before IUCD insertion	A	A	NA	NA
Endometrial biopsy, colposcopy, cervical ablation or excision, and endocervical sampling may be performed with an IUD in place	C	C	NA	NA
Removal is recommended in pregnant women when the strings are visible or can be safely removed from the cervical canal	C	C	NA	C (Consider removal)
Sickle cell disease	NA	NA	B (reduce sickle cell crisis pain)	NA
Weight gain	B (not significant)	B (not significant)	B (associated with weight gain)	B (not clinically significant as compared to IUD)
DMPA Postpartum (Breastfeeding): 6 weeks–6 months (Level A) Postpartum (non-breastfeeding): Anytime within 4 weeks (Level A)				

Disclaimer-These recommendations for “Long Acting Reversible Contraceptives (LARC)” have been developed, to be of assistance to obstetricians, gynecologists, consulting physicians and general practitioners by providing guidance and recommendations for managing women with anemia and suffering from hemorrhagic conditions. The recommendations included here shouldn't be viewed as being exclusive of other concepts or as covering all legitimate strategies. The suggestions made here are not meant to dictate how a particular patient should be treated because they neither set a standard of care nor do they guarantee a particular result. To diagnose patients, choose dosages, and provide the best care possible while also taking the necessary safety precautions, clinicians must rely on their own experience and knowledge. The writers or contributors disclaim all responsibility for any harm and/or damage to people or property resulting from the use or operation of any techniques, goods, guidelines, or ideas presented in this content.