

IPPF Medical Bulletin

IMAP Short Statement on use of Long Acting Reversible Contraceptives (LARCs) by Adolescents

This statement is developed to address the evidence on use of LARC methods by adolescents. LARC methods include intrauterine devices (IUDs) and subdermal contraceptive implants which have durations of effective use between 3 and 10+ years, depending on the specific product selected by the client.

What are the available LARC methods?

Available IUDs include the copper IUD, most commonly the Copper T380A, and the levonorgestrel-releasing IUS, available in some countries under the Bayer brand name Mirena or

donated free of cost to selected organizations, including IPPF affiliates through the International Contraceptive Access (ICA) Foundation (www.ica-foundation.org). Due to the high cost of the levonorgestrel releasing IUS in commercial markets, it is not widely available outside of developed countries. A new levonorgestrel-releasing IUS is currently under development by Medicines 360 which will be a lower-cost version that will hopefully provide increased access to this method in low resource settings once approved by regulatory authorities.

Available subdermal contraceptive implants include the etonorgestrel releasing single rod implants, including Implanon and Nexplanon (Merck) or levorgestrel two rod implants including Jadelle (Bayer) or the biosimilar Sino-Implant (Dahua). The Merck and Bayer products have been prequalified by WHO, while the Dahua product is still under review by WHO. The durations of use and key advantages and disadvantages of each of the LARC methods are presented below in Table 1.

Table 1: Characteristics of LARC methods

METHOD	Labelled duration of use	ADVANTAGES	DISADVANTAGES
All LARC Methods			
		<ul style="list-style-type: none"> • Very effective • Does not require user action after insertion • No delay in return to fertility after removal 	<ul style="list-style-type: none"> • Requires insertion and removal by a trained healthcare provider
IUD/IUS			
Copper Tcu380 IUD	10 years¹	<ul style="list-style-type: none"> • Does not change frequency of menstrual periods. Duration of menstrual periods may increase 	<ul style="list-style-type: none"> • Requires pelvic exam • Can cause heavier or more painful menstrual periods • Increases the volume of menstrual blood lost, at least during the first year of use
Levonorgestrel-releasing IUS	5 years	<ul style="list-style-type: none"> • Can decrease menstrual flow and protect against anemia • Can protect against pelvic inflammatory disease • Can decrease dysmenorrhea • Can prevent and treat endometrial hyperplasia² 	<ul style="list-style-type: none"> • Requires pelvic exam • Can cause irregular menstrual bleeding or amenorrhea • Currently not available in many low resource settings

¹ The Copper IUD is labeled for 10 years of use but studies by WHO have shown that it is effective for at least 12 years after insertion.

² Observational studies suggested that levonorgestrel-releasing intrauterine system has been successfully used to treat endometrial hyperplasia without cytological atypia and selected cases of atypical endometrial hyperplasia (Ewiss AA, Alfhaily F. 2012).

Table 1: Characteristics of LARC methods

METHOD	Labelled duration of use	ADVANTAGES	DISADVANTAGES
Levonorgestrel-releasing subdermal contraceptive implants: 2 rods			
Jadelle	5 years	<ul style="list-style-type: none"> • Can decrease menstrual flow and protect against anemia • Can protect against pelvic inflammatory disease 	<ul style="list-style-type: none"> • Causes irregular menstrual bleeding or amenorrhea. Can cause prolonged menstrual bleeding, particularly in the first months of use
Sino-implant	4 years		
Etonorgestrel-releasing subdermal contraceptive implants: 1 rod			
Implanon/ Nexplanon	3 years ³	<ul style="list-style-type: none"> • Does not require pelvic exam • Can decrease dysmenorrhea 	

Benefits of LARC specific to adolescents

Sexually active adolescents bear a disproportionate burden of morbidity and mortality secondary to unintended pregnancy. Adolescents aged 15-24 account for 40% of all of the unsafe abortions globally and this number is significantly higher in Africa, where 57% of the almost 6.2 million unsafe abortions that occur each year in that region are in women aged 15-24; 25% are in those aged 15-19.⁴ In addition, the leading causes of death in older adolescent females are complications due to pregnancy and childbirth.⁵

Adolescent may find many benefits to use of short acting methods: 1) the ability to access these lower priced methods in their communities and at pharmacies, 2) use of confidential networks for supply may provide more privacy and less stigma, 3) the use of condoms offers protection against STIs, including HIV, and 4) the use of short acting supply methods reduces the uncertainty about length of use and concerns about removal with LARCs. However, while adolescents are most likely to use contraceptive pills, injectable contraception or barrier methods when they are able to access contraceptive services, these methods have much higher typical use failure rates than LARC methods. A recent cohort study in the US found that women overall were over 20 times more likely to become pregnant when using a combined hormonal contraceptive (pills, patch or ring) compared with those using a LARC method.⁶ Women younger than 21 years in the study who used short-acting methods were twice as likely to have an unintended pregnancy as older women using short-acting contraceptives but risks were the same in the two age groups for women using LARC methods. In addition to the inherent benefits of LARC use, including no need for additional action on the part of the client after insertion, it is important to note that this study removed all financial and access barriers to the methods, offering all participants a free contraceptive method of their choice from a skilled provider for three years. In most settings, however, financial and cultural barriers pose a significant challenge to obtaining contraceptive services for adolescents, both to continue

shorter acting methods and to initiate LARC methods, which tend to have much higher upfront costs. In settings where adolescents lack regular access to contraceptive services, LARC methods may prove easier to use consistently and correctly than non-LARC methods as they do not require any follow-up visits or continuity of supply to ensure continuation once placed.

Evidence on safety of LARC in adolescents

The above referenced study, which included 611 adolescents age 14-19, who chose LARC devices found continuation rates of LARC methods of over 80% at one year and 66% at two years.⁷ These continuation rates are significantly higher than those of women in the same age group who chose short-acting contraceptive methods, including injectable contraception.

Concerns specific to the IUD in adolescents among providers include the risk of infection or expulsion and anticipated problems with insertion in young or nulliparous women. In all women, the risk of upper reproductive tract infection (PID) with IUD insertion is only increased in the first 20 days after insertion, indicating risk with active cervical infection at the time of insertion.⁸ Women with IUDs in place are otherwise no more likely to develop PID, even if they have multiple sexual partners. In fact, the levonorgestrel-releasing IUS may provide protection from PID as its primary mechanism of contraceptive action is through thickening of cervical mucus, which presents a barrier to ascending infection.⁹ Algorithms have been established to determine whether women are good candidates for IUD insertion in settings where chlamydia and gonorrhea screening is not readily available.¹⁰

In settings where laboratory screening for cervical infection is available, adolescents should be screened for sexually transmitted infection at the time of IUD insertion (but insertion does not need to wait for the results from screening tests if follow-up of clients is assured). IUD insertion should be delayed in the setting of active cervicitis until therapy has been initiated.

3 Studies are ongoing to determine the effectiveness of the etonorgestrel-releasing implants beyond 3 years of use.

4 Shah I and Ahman E. Age patterns of unsafe abortion in developing country regions. *Reprod Health Matters* 2004; 12:9-17

5 Save the Children. Every Woman's Right. How family planning saves children's lives. 2012. Available at: <http://www.savethechildren.org.uk/sites/default/files/docs/Every-Woman-Right-low-res-2.pdf>

6 Winner B et al. Effectiveness of long-acting reversible contraception. *N Engl J Med* 2012; 366:1998-2007

7 O'Neil-Callahan et al. Twenty-four-month continuation of reversible contraception. *Obstet Gynecol* 2013; 122:1083-1091.

8 Mohlajee AP et al. Does insertion and use of an intrauterine device increase the risk of pelvic inflammatory disease among women with sexually transmitted infection? A systematic review. *Contraception* 2006;73: 145-53

9 Toivonen et al. Protective effect of intrauterine release on pelvic infection: three years' comparative experience of levonorgestrel- and copper-releasing intrauterine devices. *Obstet Gynecol* 1991; 77:261-264

10 FHI360. Checklist for screening clients who want to initiate use of the copper IUD. 2009. Available at: <http://www.fhi360.org/sites/default/files/media/documents/Checklist%20for%20Screening%20Clients%20Who%20Want%20to%20Initiate%20Use%20of%20the%20Copper%20IUCD.pdf>

Intrauterine devices do not increase the risk for infertility in women, including adolescents. In a large case-control study, evidence of prior chlamydial infection but not previous IUD use was associated with infertility.¹¹

IUDs can be inserted without technical difficulty in most nulliparous women, including adolescents. The most effective method of pain control at the time of IUD insertion has not been established. The use of buccal or vaginal misoprostol has not been found to reduce insertion pain but does increase adverse events.¹² Utilization of NSAIDs and in some cases mechanical dilation may be useful in the setting of difficult IUD insertions.

Both the progestogen-only implant and the LNG IUS frequently cause menstrual bleeding changes that can vary from amenorrhea to frequent, prolonged or irregular bleeding. The LNG IUS has been demonstrated to have an effect on anemia due to reductions in the volume and frequency of menstrual bleeds. The copper IUD

can cause heavier menstrual bleeding and increased pain with menses particularly in the first several months of use.

Recommendations by other organizations

In a recent Committee Opinion, the American College of Obstetricians and Gynecologists unequivocally endorsed use of LARC methods by adolescents citing the evidence for safety as summarized above and stating, "With top-tier effectiveness, high rates of satisfaction and continuation, and no need for daily adherence, LARC methods should be first-line recommendations for all women and adolescents."¹³

The World Health Organization (WHO) also places no restrictions on LARC method use based on age with both IUDs and contraceptive implants being category 1 (meaning no restrictions on use) or category 2 (meaning benefits of the methods outweigh the risks).¹⁴

Table 2: WHO Medical Eligibility Criteria for Contraceptive Use, 4th edition, 2009. Recommendations for Age

Condition	COC	CIC	P/R	POP	DMPA NET-EN	LNG/ ETG Implants	Cu-IUD	LNG-IUD
Age	Menarche to <40 = 1 >40 = 2	Menarche to <40 = 1 >40 = 2		Menarche to <18 = 1 18-45 = 1 >45 = 2	Menarche to <18 = 2 18-45 = 1 >45 = 2	Menarche to <18 = 1 18-45 = 1 >45 = 1	Menarche to <20=2 >20 = 1	Menarche to <20=2 >20 = 1

COC=combined oral contraceptives; CIC=combined injectable contraceptive; P=combined transdermal contraceptive patch; R=combined contraceptive vaginal ring; POP=progestogen only pills; LNG=levonorgestrel; ETG=etonogestrel; Cu-IUD = copper intrauterine device; LNG-IUD = levonorgestrel releasing intrauterine device

11 Hubacher et al. Use of copper intrauterine devices and the risk of tubal infertility among nulligravid women. *N Engl J Med* 2001;345:561-567

12 Swenson et al. Self-administered misoprostol or placebo before intrauterine device insertion in nulliparous women: a randomized controlled trial. *Obstet Gynecol* 2012; 120:341-347

13 Committee on Adolescent Health Care Long-Acting Reversible Contraception Working Group. Adolescents and long-acting reversible contraception: Implants and Intrauterine Devices. 2012. ACOG Committee Opinion 539. Available at: <http://www.acog.org/~/media/Committee%20Opinions/Committee%20on%20Adolescent%20Health%20Care/co539.pdf?dmc=1ts=20120924T1218351775>

14 World Health Organization. Medical Eligibility for Contraceptive Use, 4th edition, 2009. Available at: http://whqlibdoc.who.int/publications/2010/9789241563888_eng.pdf

Recommendations

- Member Associations should offer LARCs as one of the basket of options for adolescents seeking contraceptive services.
- For all contraceptive clients who do not have medical contraindications, informed choice is the most important factor in initiating one method over another. All clients, including adolescents, have the right to decide on adopting less effective methods if they chose if they are fully informed, decline use of LARC as well as the right to discontinue LARC without barriers. All women receiving implants or IUDs should be well informed as to the efficacy of these contraceptive methods, expected side effects and where they can go for removal by a trained provider.
- Whenever possible, Member Associations should provide LARC free of charge or at an affordable rate for adolescents seeking this service
- Confidentiality is a key component of provision of quality contraceptive services for all women, but particularly for adolescents. Contraceptive services for adolescents should be organized and provided in ways that maximize privacy. If local laws require parental consent or notification prior to providing sexual or reproductive healthcare services to adolescents, clients should be notified of the requirements to break confidentiality in advance. Where laws allow room for interpretation, respect for confidentiality in line with medical ethics should always prevail. Member Associations should not add unnecessary barriers to services by adolescents.¹⁵
- As with all non-barrier contraceptive methods, LARC methods do not protect against STIs, including HIV. Therefore, adolescents who use LARC for contraception should be encouraged to consistently use condoms to decrease the risk of contracting an STI.
- Screening for STIs should be performed based on risk factors and local/national guidelines. If laboratory screening is not available in the local context, Member Associations can utilize existing checklists to determine women who are at high risk for cervical infection and therefore are not good candidates for IUD insertion.

¹⁵ For additional information on providing youth-friendly sexual and reproductive health services, see IPPF's Keys to Youth-Friendly Services. Available online at: <http://www.ippf.org/resources/publications/Keys-youth-friendly-services>

The development of this document was possible thanks to the efforts and contributions of many people.

We would like to express great appreciation to IPPF's team – Julia Bunting, Doortje Braeken, Marcela Rueda; to Anibal Faundes (FIGO); John W. Townsend (Population Council); to the members of the IPPF's International Medical Advisory Panel (IMAP); and to Kelly Culwell (Independent consultant).

