Levonorgestrel


**Indication**

Contact with health services for insertion of contraceptive device

**INN**

Levonorgestrel

**Medicine type**

Chemical agent

**List type**

Core

**Formulations**

Intrauterine system with reservoir containing 52 mg of levonorgestrel.

**EML status history**

First added in 2015 (TRS 994)

**Sex**

Female

**Age**

Adolescents and adults

**Therapeutic alternatives**

The recommendation is for this specific medicine

**Patent information**

Patents have expired in most jurisdictions

Read more about patents.

**Wikipedia**

Levonorgestrel

**DrugBank**

Levonorgestrel

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**Summary of evidence and Expert Committee recommendations**

An application was submitted by the WHO Department of Reproductive Health and Research, Geneva, requesting the inclusion of a levonorgestrel-releasing intrauterine system (LNG-IUS) on the Model List to provide long-acting contraception in women of reproductive age. Compared to other contraceptives, LNG-IUS offers relevant advantages in women who are breastfeeding at least four times a day (from four weeks postpartum to one year) or have heavy menstrual bleeding. It is also suitable for use as endometrial protection during estrogen therapy for menopausal symptoms. A 2010 review classified the hierarchy of contraceptive effectiveness in descending order as: (i) female sterilization, long-acting hormonal contraceptives (LNG-IUS and implants); (ii) copper-containing intrauterine devices (Cu-IUDs) of ≥ 300 mm2 surface area; (iii) Cu-IUDs of < 300 mm2 surface area and short-acting hormonal contraceptives (injectables, oral contraceptives, the patch and vaginal ring); and (iv) barrier methods and natural methods (1). The LNG-IUS contraceptive method is included in WHO’s Medical eligibility criteria for contraceptive use (2, 3), Selected practice recommendations for contraceptive use (4), and Family planning: a global handbook for providers (5).

The contraceptive action of levonorgestrel released from the intrauterine system is associated with a thickening of cervical mucus, impedance of endocervical sperm transport, and alteration of the endometrium, preventing implantation. The LNG-IUS has high contraceptive efficacy, with reported first-year pregnancy rates of 0.1%. While it is approved for 5 years of contraceptive use, there is evidence of effectiveness for up to 7 years of continuous use. After removal, there is rapid return to fertility. A 2004 Cochrane systematic review compared the effectiveness, acceptability and tolerability of progestogen-releasing intrauterine systems with other reversible contraceptive methods (6). No significant difference in the risk of unwanted pregnancy was observed between LNG-IUS and non-hormonal IUDs of > 250 mm2 or levonorgestrel implant; however, the included studies may not have been sufficiently powered to detect a difference. The LNG-IUS was associated with a lower risk of pregnancy than non-hormonal IUDs of ≤ 250 mm2. Women using the LNG-IUS were also more likely to experience an absence of menstrual bleeding. Users report reduction in menstrual bleeding and 15–20% become amenorrheic one year after insertion. The LNG-IUS has been shown to be superior to oral treatments with either cyclic medroxyprogesterone acetate or combined oral contraceptives in reducing menstrual bleeding and in improving blood haemoglobin levels among women suffering from documented menorrhagia.