



## Global Health Technical Briefs

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- Implants provide highly effective, long-acting pregnancy protection (3 to 5 years)
- Although insertion and removal require a trained provider, both procedures are done quickly
- Contraceptive protection is immediately reversible upon implant removal; implants have no impact on long-term fertility

### Background

Contraceptive implants are matchstick-sized rods that contain progestin. Implanted beneath the skin of a woman's upper arm, the progestin is slowly released over 3 to 5 years. Implants interrupt fertility by thickening cervical mucus (mechanically preventing the sperm from accessing the ovum) and through hormonal effects that prevent ovulation in about half of menstrual cycles. Family planning programs are introducing the new one- or two-rod implant systems Implanon®, Jadelle®, and in some countries Sino-Implant (II)®. By 2008 Norplant, the six-capsule implant system, will no longer be available.

**Implant types:** The most common contraceptive implants include:

- Jadelle: 2 rods, provides contraception for 5 years
- Implanon: 1 rod, provides contraception for 3 years
- Norplant: 6 capsules, provides contraception for 5-7 years (to be discontinued in 2008)
- Sino-Implant (II): 2 rods, provides contraception for 4 years

**Method characteristics:** Contraceptive implants are highly effective at preventing pregnancy, long-acting, totally user-independent, and completely and immediately reversible upon removal. Unlike some other hormonal forms of contraception, implants can be used by cigarette smokers, women who have risk factors for cardiovascular disease (including high blood pressure), and women who are breastfeeding (after 6 weeks post-partum).

Insertion requires a minor surgical procedure by a trained practitioner using appropriate aseptic technique in a sterile surgical environment. As with other hormonal contraceptive methods, some women experience side effects such as headaches, breast tenderness, mood changes, nausea, and unpredictable vaginal bleeding—all of which usually decrease over time. Unpredictable vaginal bleeding associated with the use of implants sometimes leads users to have the implants removed, so appropriate counseling is essential to reduce discontinuation.

**Health benefits:** Unlike some other hormonal forms of contraception, implants do not contain estrogen, so women can safely breastfeed with an implant in place. Because implants may cause menstrual bleeding to be lighter, less frequent, or absent, some users may have a decreased risk of iron-deficiency anemia. Users also gain protection against health risks associated with pregnancy, pelvic inflammatory disease, and ectopic pregnancy. Implants have no effect on sexual function.

**Conditions that may make use of implants unsafe:** In most cases, women with the following conditions should be advised to use a different form of contraception:

- Serious liver disease, such as liver tumor, severe cirrhosis, or active hepatitis
- Current deep venous thrombosis or pulmonary embolus
- Unexplained or unusual vaginal bleeding that requires evaluation
- Current use of antiseizure drugs (barbiturates, carbamazepine, oxcarbazepine, phenytoin, primidone, topiramate) or rifampicin
- Breast cancer (currently or in the past)



In most cases, breastfeeding women who are fewer than six weeks post-partum should delay initiation of contraceptive implant use.

**Sexually transmitted infections and HIV/AIDS:** Implants provide no protection against STIs and HIV/AIDS. A male or female condom should be used to decrease the risk of transmission. Women with HIV/AIDS can use implants, but should also use a barrier method to decrease the risk of disease transmission.

**Special considerations:** Contraceptive efficacy of Norplant and Jadelle is reduced more quickly in women who are overweight. For women weighing 80 kg or more, Jadelle and Norplant become less effective after four years of use. For women weighing 70–79 kg, Norplant becomes less effective after five years of use. These women should have their implants replaced sooner.

### Programmatic considerations

Offering implants as a contraceptive choice requires that trained practitioners perform the minor procedures necessary to either insert or remove the device in a reliably aseptic environment. Counseling should also be made available to potential recipients, so that they clearly understand implant insertion and removal procedures, the risks and benefits of implant use, as well as what to expect in terms of side effects, particularly bleeding changes.

Depending on pricing structures, contraceptive implants can be cost effective when used long term. Jadelle and Implanon have come down in price by about 25 percent since 2006 (to around US\$20), which has stimulated demand at the program level. The price of Sino-Implant (II) is expected to be between US\$5–\$8 and, if approved beyond China and Indonesia, will further improve the availability of implants.

### Lessons learned

The following points increase the likelihood of success in a program offering implants as a contraceptive choice:

- Prior to offering implants, the program should carefully assess its ability to sustainably provide:
  - Adequate pre-insertion counseling to potential users, so clients can make an informed decision about implants
  - Trained providers who are available for both insertion and removal of implants
  - An aseptic environment in which insertion and removal can take place
  - All of the equipment necessary for implant insertion and removal
  - A database and information system that will allow users to be located and contacted toward the end of the implant's lifespan, so that removal occurs on time
  - A steady supply of implants
  - Reliable access to removal services
- Community groups should be involved in the addition of implants to the program's menu of contraceptive choices, and information should be available in the community's language for potential practitioners, users, and community groups.
- Cultural context and acceptability of the device and its side effects should be considered.
- Providers offering contraceptive implants should be supervised and programs evaluated on an ongoing basis.

Sivin I, Nash H, Waldman S. *Jadelle® Levonorgestrel Rod Implants: A Summary of Scientific Data and Lessons Learned from Programmatic Experience*. Population Council Web site. Available at: [http://www.popcouncil.org/pdfs/jadelle\\_monograph.pdf](http://www.popcouncil.org/pdfs/jadelle_monograph.pdf). Accessed August 23, 2007.

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