



# Contraceptive Implants

## Description

Introduced more than 25 years ago, contraceptive implants are one of the most effective family planning methods available when used in accordance with approved prescribing information. Implants are thin, flexible rods that are inserted just under the skin of a woman's upper arm and provide sustained contraception ranging generally from three to five years.

The Population Council developed the first contraceptive implant—Norplant—which was approved in Finland, the country of manufacture, in 1983. Norplant consisted of six rods (2.4 mm × 34 mm), each containing 36 mg of levonorgestrel (a progestin). The second-generation system, Jadelle, was subsequently developed and approved by the U.S. Food and Drug Administration (USFDA) in 1996; Jadelle consists of two rods (2.5 mm × 43 mm), each containing 75 mg of levonorgestrel. In 1994, Sino-implant (II), a similar two-rod implant with the same amount of active ingredient as Jadelle, was introduced in China. This was followed by Implanon in 1997 and approved by USFDA in 2006, a single-rod contraceptive implant (2 mm × 40 mm) containing 68 mg etonogestrel, a synthetic female hormone resembling progesterone, which was developed in the Netherlands. Production of Norplant was discontinued in 2008.<sup>1</sup>

Contraceptive implants provide long-lasting contraception by suppressing ovulation, impeding sperm transit by thickening the cervical mucus, and altering the endometrial structure.<sup>2</sup> The duration of contraceptive protection varies by brand: Jadelle is registered to provide contraception for five years, Sino-implant (II) for four years, and Implanon for three years. Doctors may advise women who are overweight to replace the implant earlier. Insertion and removal of an implant must be conducted by a well-trained health care provider, and both insertion and removal are generally short, non-complicated procedures. After removal, return to fertility is usually rapid as the synthetic hormones in implants have a short half life, and there is no delayed return to fertility for implant users, as compared to women who do not use contraception.<sup>3</sup> A new implant can be inserted at the time of removal if continued contraception is desired.

Contraceptive implants can be used by almost all women. Implants are best suited for women who desire a user-independent contraceptive method for birth

spacing and limiting. Implants should not be inserted in women during the first six weeks after childbirth if they are exclusively or partially breastfeeding; those with serious liver disease, problems with blood clots, or unusual vaginal bleeding; and women that have or have had breast cancer.<sup>3</sup> Contraceptive implants do not provide protection from sexually transmitted infections.

## Efficacy

Contraceptive implants are one of the most effective contraceptive methods available. Annual pregnancy rates are less than 1 percent with all implants.<sup>4,5</sup> Continuation rates are often better than those for other hormonal contraceptives or intrauterine devices.<sup>6</sup> No significant differences are found in contraceptive effectiveness or continuation rates among users of various contraceptive implants.<sup>4</sup>

The major side effects associated with the use of contraceptive implants are changes in bleeding patterns (frequency, duration, and amount).<sup>3,7</sup> Other potential side effects include weight gain, headaches, abdominal pain, acne, dizziness, nausea, breast tenderness, and mood changes. Rarely, infection at the site of the implant will occur.<sup>3</sup> Ovarian cysts may also occur, but usually do not require treatment.<sup>8</sup>

## Current programme/sector use

Because of implants' effectiveness and convenience, they are popular and in high demand when available in family planning programmes. However, the high upfront commodity cost can be a barrier to access especially in resource-constrained settings. Still, because they are effective for a number of years (i.e., three to five years), are independent of user's compliance, and do not require frequent resupply, implants are more reliable and more cost-effective compared to other shorter-acting contraceptive methods.<sup>9</sup>

Although use of implants—as a percent of the method mix—remains low worldwide, demand often exceeds supply. In many settings, potential implant users go on waiting lists or choose another method. This has led analysts to conclude that the true demand for implants is unknown because there are not enough supplies and services available to meet demand.<sup>10</sup> Significant increases in procurement of contraceptive implants have been

reported worldwide over the last four years. Data gathered by the RH Interchange show that in 2005 fewer than 100,000 implants were donated in sub-Saharan Africa. By 2010, donations rose 19-fold to more than 1.8 million.<sup>11</sup>

Contraceptive implants are a practical method for use in all settings as their insertion requires a short in-office procedure for a one-rod implant and a minor surgical intervention for the two-rod implant. An essential element of implant provision is ensuring excellent counselling before insertion so that women know what potential side effects to expect and how to reliably access removal services.<sup>1</sup>

Guidance for effective implant introduction and scale-up is available for providers and managers. An online toolkit on contraceptive implants provides up-to-date and accurate information on training, guidance on best practices, and resources and tools to help improve access to and quality of services: <http://www.k4health.org/toolkits/implants>.

## Manufacturers

Jadelle is manufactured by Bayer Schering Pharma.

Sino-implant (II) is manufactured by Shanghai Dahua Pharmaceuticals Co., Ltd.

Implanon is manufactured by Merck/MSD.

## Registration status/suppliers

**Jadelle:** Available with a disposable trocar, prequalified by the World Health Organization, and has been registered in more than 47 countries worldwide. This product is distributed commercially by Bayer Schering Pharma.

**Sino-implant (II):** Available with a disposable trocar, has been registered in 13 countries in Africa and Asia, and is under active review in ten additional countries as of January 2011. In addition to the manufacturer's name for the product (Sino-implant (II)), the product is marketed under a variety of names by distributors in different countries: as Zarin by Pharm Access Africa, Ltd., as TRUST by DKT Ethiopia, and as Femplant by Marie Stopes International.

**Implanon:** Available in a preloaded, disposable, sterile trocar; is prequalified by the World Health Organization; and has been registered in 80 countries. The product is distributed commercially by Merck/MSD.

## Public-sector price agreements

**Jadelle:** Public-sector price agreements with organizations such as the US Agency for International Development (USAID), the United Nations Population Fund (UNFPA), PSI, and others have been established.

**Sino-implant (II):** Public-sector price agreements are established with distribution partners.

**Implanon:** Public-sector price agreements have been made through contracts with individual ministries of health, UNFPA, USAID, and nongovernmental organizations engaged in family planning.

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This publication forms part of a series of technical briefs, written by members of the Caucus on New and Underused Reproductive Health Technologies, a thematic group established under the auspices of the Reproductive Health Technologies Coalition. The Caucus' aim is to broaden the discussion within the Coalition of reproductive health technologies that are not well integrated into the public or commercial health sectors. Responsibility for the selection and contents of the product briefs rests solely with the Caucus and does not imply endorsement by the Coalition or its wider membership. For additional information, please contact [secretariat@rhsupplies.org](mailto:secretariat@rhsupplies.org).