

# Intrauterine Devices (IUD)

Vathana Ngeth, Biomedical Engineering, University of Rhode Island  
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Intrauterine devices (IUD) are a form of birth control. Alternative methods are oral contraceptives, like hormone pills, and hormonal injections but IUDs are most cost effective long-term. IUDs were first experimented with in the early 1900's so this is still a modern contraceptive. There are two types of IUDs: copper IUDs and hormonal IUDs. Implementation of which kind is used is dependent the circumstances of each patient. The procedure was originally only available to women who have already had a baby or were over 21 years of age is now available to women as young as 18 years old. Without complications, it is a very quick procedure. IUDs are very long-lasting but do have a few side-effects. These devices are still being developed to be more efficient and are being looked at to be used in other countries for family planning.

An IUD is a plastic, flexible T-shaped insert. It is placed completely in the uterus through the cervix with the IUD strings protruding from the cervical opening.

The very first design was ring-shaped made of silkworm gut in 1909 by Dr. Richard Richter. This was modified in 1920 by Dr. Earnest Graefenberg when he added metal coils made of an alloy containing copper, zinc, and nickel for stability. It was still considered experimental because studies were still ongoing but in 1959 Dr. Alan Guttmacher condemned the product in a research paper and it lost much of its popularity. It made its return a decade later when Howard Tatum reinvented the design making it T-shaped and Jaime Zipper altering the hazardous alloy to only copper for its inhibitive but safe quality.

The copper IUD is most popularly made by Paragard. It was approved by the UFDA in 1984 and it works by mechanically preventing the sperm from meeting the egg and potentially killing the sperm. The copper coil also makes the uterus inhospitable for an egg enabling it to attach to the uterine lining. This type of IUD can last 10 to 12 years.

Similarly, the hormonal IUD made by Mirena approved by the UFDA in 2000 prevents pregnancy by interfering with fertilization. Mirena is mechanically blocks the sperm with its T-shape but it also releases the hormone levonorgestrel, synthetic progestin, which prevents ovulation and causes the secretion of thick cervical mucus. Mirena should last 5 to 7 years.

The procedure is very fast taking 30 minutes on average without major complications. The IUD is inserted while the patient is on her menstrual cycle when the cervical muscles are already contracting. First, a catheter containing the IUD with the "arms" of the T folded up so that it fits the tube is inserted into the uterus for measurement. Once the catheter is marked, the IUD is adjusted to the correct size and then the catheter is inserted again and removed leaving the IUD in place. The strings protruding from the hole are trimmed and are to be checked monthly.

In the first months, there is cramping and bleeding but is later reduced in the hormonal IUD. The copper IUD tends to cause heavy bleeding during scattered periods. These IUDs cause a higher risk of infection, uterine perforation, and ectopic pregnancies.

Health insurance companies usually cover the devices, price varying around \$500. Other companies are developing lower dosed devices.

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