

Hormonal Contraception: Injections, Implants, Rings, and Patches

In addition to oral contraceptives (birth control pills), there are several other forms of hormonal birth control—injections, implants, rings, and patches. These methods are safe and effective for most women. Although there are some risks, the health benefits outweigh most concerns. This pamphlet explains:

- How these methods work
- Benefits
- Side effects and risks

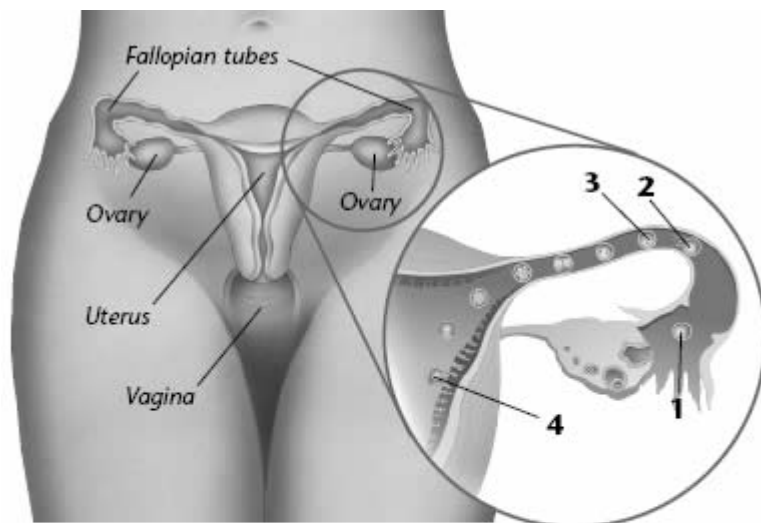
Hormonal methods of birth control, such as injections, implants, rings, and patches are effective ways to prevent pregnancy.

The Reproductive Process

To understand how these hormonal methods work, it helps to know what normally happens during reproduction. A woman has two ovaries, one on each side of the uterus. Each month, one of the ovaries releases an egg into a fallopian tube. This is called ovulation. It typically occurs about 12–14 days before the start of the menstrual period.

A woman can get pregnant if she has sexual intercourse around the time of ovulation. During sex, the man ejaculates sperm into the vagina. The sperm travel up through the cervix and the uterus and into the fallopian tubes.

If a sperm meets an egg in the fallopian tube, fertilization—union of egg and sperm—can occur. The fertilized egg moves down the fallopian tube to the uterus where it attaches and grows into a *fetus*.



Each month during ovulation an egg is released (1) and moves into the fallopian tubes (2). If a woman has sex around this time, an egg may meet a sperm in the fallopian tube, and the two will join (3). This is called fertilization. The fertilized egg then moves through the fallopian tube into the uterus and becomes attached there to grow during pregnancy (4).

Types of Hormonal Methods

With most types of hormonal birth control, a woman takes *hormones* that prevent ovulation. When there is no egg to be fertilized, pregnancy cannot occur. The hormones also cause other changes in the cervical mucus and uterus that help prevent pregnancy.

Hormonal methods of birth control must be prescribed by a doctor. They do not protect against sexually transmitted diseases (STDs). A condom should be used with each act of sex for that protection.

How quickly pregnancy occurs after hormonal birth control is stopped depends on the method that was used. Women who are thinking about having children should ask their doctors about this issue.

There is no method of hormonal birth control that is right for all women. Your doctor will help you decide what type will work best for you.

Injections

An injection of hormonal birth control, called depot medroxyprogesterone acetate (DMPA) provides protection against pregnancy for 3 months. This means a woman needs only four injections each year. During the time that the injection is effective, nothing else needs to be done to prevent pregnancy.

This method of birth control contains progestin, a *progesterone*-like hormone, which is produced by the ovaries and affects the menstrual cycle and fertility. During a normal menstrual cycle, if a woman does not become pregnant, the level of progesterone decreases, the lining of the uterus is shed, and menstruation occurs. During pregnancy, a sharp increase in these hormones keeps a woman from ovulating and having her menstrual period.

Getting hormonal injections also prevents a woman from ovulating. It also causes the cervical mucus to thicken, which makes it hard for the sperm to penetrate the cervix. Injections may decrease the thickness of the endometrium (lining of the uterus), which can affect implantation (when the egg attaches to the uterus).

Injections may be good for women who find daily birth control methods inconvenient. Many women like the fact that this method does not need to be taken daily or put in place before having sex. It offers privacy to the user (there is no physical evidence of birth control). Injections also may be good for women who cannot use birth control pills or an *intrauterine device (IUD)*.

When given correctly and every 3 months, injections are very effective. However, if a woman becomes pregnant while using them, injections do not affect the pregnancy or the health of the baby.

A doctor or nurse must give the injection. The first shot usually is given within the first 5 days of menstrual bleeding. This is to ensure that the woman is not already pregnant and to prevent ovulation during the first month of use. If it is given after that time, the woman should use a backup method of birth control, such as condoms, for the next 7 days.

Benefits. There are many benefits of hormonal injections. They offer:

- Reduced risk of cancer of the uterus if used long term
- Possible protection against pelvic inflammatory disease
- Reduced pelvic pain caused by endometriosis
- The possibility of less painful periods
- Reduced risk of *ectopic pregnancy*

Injections also may relieve certain symptoms of *perimenopause*, sickle cell disease, anemia, and seizure disorders. They can be used by women who are breastfeeding.

Side Effects and Risks. DMPA injections tend to cause irregular bleeding. During the first months of use, irregular bleeding and spotting lasting 7 days or more are common. Over time, the number and length of these problems decrease. After a while, monthly bleeding may not occur at all. Of the women who use injections for a year, about one half no longer have any bleeding. When injections are used for longer than a year, about 75% of women do not have any bleeding.

Injections also may cause other side effects, including:

- Headaches
- Weight gain
- Anxiety
- Acne
- Unwanted hair growth
- Dizziness
- Delay in return to fertility

Many women and teenagers also have some *bone loss* while using hormonal injections. When the injections are stopped, bone density appears to return to normal levels for the woman's age group.

Implant

A contraceptive implant is a small plastic rod about the size of a matchstick that is inserted under the skin of the upper arm. The implant releases a progestin hormone that works in a way similar to other

Table 1. Failure Rates

Methods	Pregnancy Rates (%)*
Injections	3
Implant	.05
Vaginal Ring	8
Skin Patch	8

*Typical use: Based on how it is usually used, not on perfect use. If the method is always used as directed, the risk of pregnancy is lower.

hormonal methods of birth control—it prevents ovulation. Like injections, the implant causes changes in the lining of the uterus and the cervical mucus to help prevent pregnancy.

The implant protects against pregnancy for 3 years. During the time that it is effective, a woman does not have to do anything else to prevent pregnancy.

A doctor inserts the implant with a special applicator. No incision needs to be made, and the im-plant can be inserted or removed in a few minutes. A woman can become pregnant soon after the implant is removed.

Like injections, the implant may be a good option for women who find daily methods of birth control inconvenient. It is also a good choice for women who cannot use contraceptive methods that contain *estrogen*, such as those who are breastfeeding or have certain health problems.

Benefits. The implant may reduce the symptoms of painful periods in some women.

Side Effects and Risks. The implant is a very effective method of birth control. However, the effectiveness of the implant in women who are very overweight is unknown.

The most common side effect of using a contraceptive implant is irregular bleeding. This usually goes away in 6–9 months.

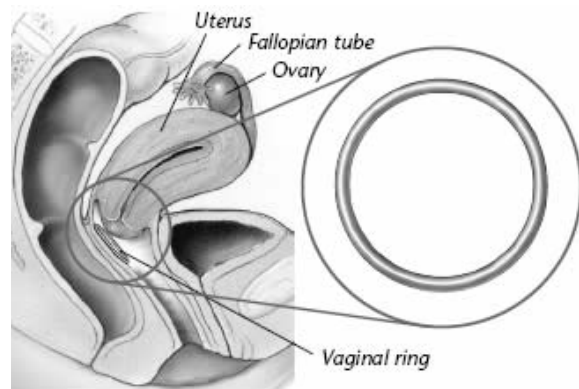
Some women stop bleeding altogether. Other side effects may include:

- Pain or irritation at the insertion site (this usually goes away within a few days)
- Headaches
- Vaginitis
- Breast tenderness
- Weight gain

Although rare, if pregnancy occurs while the implant is inserted, there is an increased risk of it being an ectopic pregnancy.

Vaginal Ring

The vaginal ring is a flexible, plastic ring that is placed in the upper vagina. Most women and their partners cannot feel the ring when it is in place. The ring releases both estrogen and progestin continuously to prevent pregnancy. The ring is worn for 21 days, removed for 7 days, and then a new ring is inserted. During the week it is out, bleeding like that of a menstrual period



The vaginal ring is a plastic ring that is placed in the upper vagina.

occurs. Although a woman does not need to visit her doctor to have the ring inserted or removed, a doctor must prescribe it.

The vaginal ring increases the amount of estrogen and progestin in the body. These changes affect ovulation and other reproductive functions, such as thickness of cervical mucus and endometrium.

Benefits. In addition to preventing pregnancy, the vaginal ring may offer other health benefits (see box).

Side Effects and Risks. Some women have side effects when using the vaginal ring. These may include:

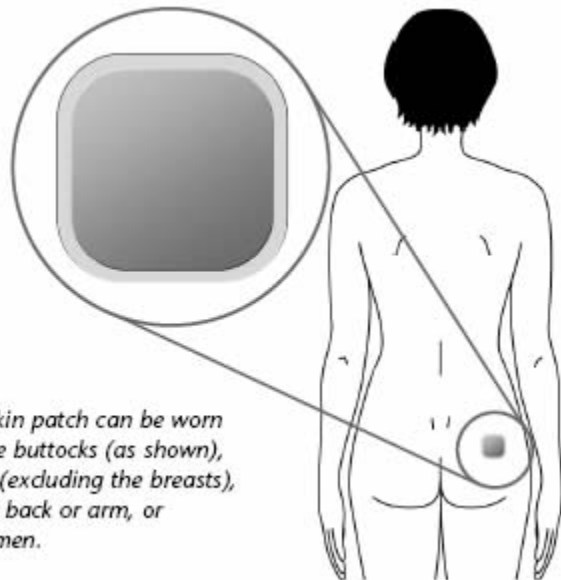
- Headache
- Nausea
- Vaginal infections and irritation
- Vaginal discharge
- Breast tenderness
- Irregular vaginal bleeding

After a few months of use, many side effects go away. Women older than 35 years should not use the vaginal ring if they smoke or are very overweight (obese).

Skin Patch

The contraceptive skin patch is a small (1.75 square inches) adhesive patch that is worn on the skin to prevent pregnancy. The skin patch is a weekly method of hormonal birth control. Once a woman obtains a prescription for the patch, she does not need to visit her doctor to apply or remove the patch. The patch can be worn on the buttocks, chest (except the breasts), upper back or arm, or abdomen.

The patch constantly releases estrogen and *progestin* through the skin and into the bloodstream. As with other methods of hormonal birth control, the patch prevents ovulation and changes the endometrium, which helps prevent the egg from attaching to the uterus. It also causes the cervical mucus to thicken which makes it hard for the sperm to get through the cervix to the uterus.



The skin patch can be worn on the buttocks (as shown), chest (excluding the breasts), upper back or arm, or abdomen.

The skin patch is used on a 4-week or 28-day cycle. A woman wears a patch for a week at a time for a total of 3 weeks in a row. During the fourth week, a patch is not worn and bleeding occurs. After week 4, a new patch is applied and the cycle begins again, no matter when bleeding begins or ends.

The patch is made to be worn for a week at a time. It should not come off during regular activities, such as bathing, exercising, or even swimming.

Benefits. The contraceptive skin patch may have the same health benefits as the vaginal ring (see box).

Benefits

The vaginal ring and the skin patch have benefits in addition to preventing pregnancy. For instance, women who use one of these methods may have:

- Decreased risk of cancer of the endometrium and ovary
- Decreased risk of pregnancy, including ectopic pregnancy
- Lighter, shorter, and more regular periods
- Reduced menstrual cramps
- Decreased risk of pelvic inflammatory disease

Side Effects and Risks. The skin patch is a very effective method of birth control. The patch may be less effective in women who weigh more than 198 pounds. Some women have side effects when using the skin patch. These may include:

- Skin irritation
- Breast tenderness
- Headache
- Nausea
- Menstrual cramps
- Abdominal pain

As with the vaginal ring, women older than age 35 years who smoke or are obese should not use the patch.

Finally...

Hormonal methods of birth control, such as injections, implants, rings, and patches are effective ways to prevent pregnancy. They are convenient, easy to use, and reversible. Your doctor will help you decide which method is best for your needs and lifestyle.

Glossary

Bone Loss: The gradual loss of calcium and protein from bone, making it brittle and more susceptible to fracture.

Ectopic Pregnancy: A pregnancy in which the fertilized egg begins to grow in a place other than inside the uterus, usually in the fallopian tubes.

Estrogen: A female hormone produced in the ovaries that stimulates the growth of the lining of the uterus.

Fetus: A baby growing in the woman's uterus.

Hormones: Substances produced by the body to control the functions of various organs.

Intrauterine Device (IUD): A small device that is inserted and left inside the uterus to prevent pregnancy.

Perimenopause: "Around menopause;" the years leading up to menopause.

Progesterone: A female hormone that is produced in the ovaries and makes the lining of the uterus grow. When the level of progesterone decreases, menstruation occurs.

Progestin: A synthetic form of progesterone that is similar to the hormone produced naturally by the body.