Contraceptives, Hormonal
How They Work

Hormonal contraceptives use either:

- A combination of very strong estrogen and progesterone (*progestin*) in the form of a(n):
  - Pill, taken for 21 days and then not taken for 7 days.
  - Patch, placed on the lower abdomen every week for 3 weeks, and not on the fourth week.
  - Vaginal Ring, placed in the vagina and left there for 3 weeks, and removed for 1 week.
  - Injection, the hormone is injected once every 28 to 30 days.
- Progestin alone in the form of a:
  - Pill, that is taken every day.
  - Intrauterine Device (IUD), inserted during a menstrual period and removed or replaced every five years.
  - Implant, plastic rods placed under the skin of the upper arm and replaced or removed every five years.
  - Injection, given once every 90 days.

These "female sex hormones" are used in many forms for birth control. These two hormones make up most hormonal contraceptives.

1. **Estrogen** is the major female hormone. It is responsible for female characteristics. The estrogen compound used in most oral contraceptives (OC) is estradiol. Estrogen is always used with a progestin. When used throughout a menstrual cycle with progesterone, estrogen:

- Stops the actions of other reproductive hormones.
- Stops the giving off an egg (*ovulation*).
- Changes the lining of the uterus. This change makes it more difficult for an egg to implant.

2. **Progesterone** works to prevent pregnancy by:

- Blocking ovulation.
- Preventing the entry of sperm into the uterus, by keeping the cervical mucus thick and sticky.
- Slowing the action of fallopian tubes, to slow sperm transport.
- Changing the lining of the uterus to make it more difficult for the fertilized egg to implant.

Progesterone is the hormone that prepares the uterus for the fertilized egg (*embryo*). Certain kinds of progesterone are used in other kinds of contraceptives. Including:

- Levonorgestrel in the IUD.
- The Norplant system, which are plastic rods put in the upper arm.
- Depo-medroxyprogesterone acetate in the injected Depo-Provera.

Side effects from estrogen occur more often in the first 2 or 3 months, and include:

- Nausea and vomiting (can often be controlled by taking the pill during a meal or at bedtime).
- Dizziness.
- Breast tenderness and enlargement.
- Headaches (migraines may get worse).
- Estrogen has widespread effects on many other bodily functions, including increasing bone density.
- It has mixed effects on the heart.
- It appears to improve cholesterol and other lipid levels.
- It also increases blood clotting and may increase the risk for stroke in certain women.
- May cause swelling of the extremities.
- New oral contraceptive (OC) methods with lower dose estrogen (20 mcg and below) may reduce side effects and improve effects on heart and circulation. Such methods may also increase spotting and break-through bleeding (*bleeding between periods*), depending on the progestin used.

Side effects of progestin occur in both the combination oral contraceptives and in any contraceptive that only uses progestin. Side effects may be less or more severe, depending on the form and dosage of the contraceptive. Side effects may include:

- Stomach pain or cramps.
- Diarrhea.
- Fatigue, unusual tiredness, weakness.
- Hot flashes.
- Decreased sex drive.
- Nausea.
- Trouble sleeping.
- Swelling in the face, ankles, or feet.
- Headache.
- Weight gain.
- Unexpected flow of breast milk.
- Acne or skin rash (especially with the patch).*
- Depression, irritability, or other mood changes.
- Changes in uterine bleeding. (If you have higher amounts during periods, spotting and bleeding between periods, or absence of periods, check with your caregiver.)
- Breast tenderness.
- Hair growth of the face and chest.
- Delay or difficulty in getting pregnant afterward.

*Low dose oral contraceptives actually improve acne. Only Ortho Tri-Cyclen is approved for this by the Federal Drug Administration.

In women with heavy menstrual periods, the progesterone IUD may be helpful in slowing down the bleeding. Be aware that pregnancy can occur with any of these contraceptive methods. If there is any suspicion of pregnancy, you should consult your caregiver.

Newer, lower dose combination pills may decrease or not have as many side effects. Some progestins used in non-oral contraceptives may not pose a high risk for these side effects. If side effects persist or are severe, you should talk to your caregiver.

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