Hormonal Contraception: Not Just “The Pill”

OVERVIEW:

Oral contraceptives, also known as birth control pills, have been on the market in the U.S. since only 1960. Amazingly, one of the major delays for the development of “The Pill” was the drug industry’s assumption that there wouldn’t be a market for the product! Oral contraceptives quickly became one of the most widely used prescription drugs in the world, and due to their ongoing popularity and profitability, pharmaceutical companies continue to develop new formulations of these medications, as well as new ways for consumers to use them.

Women today have several options available when considering hormonal contraception. There are dozens of formulations of pills and minipills, plus an injection (shot), a patch, a vaginal ring, and an intrauterine device (though there are IUD’s without hormones). All hormonal contraceptives work essentially the same way: by blocking ovulation (no egg=nothing for sperm to fertilize), thickening cervical mucus (sperm have a hard time getting into the uterus), and thinning the uterine lining (to prevent implantation if the first two mechanisms don’t work). The method of delivery of the medication varies, as does the exact formulation of the hormones in each version. All require an exam and a prescription from a health care provider.

The various methods are about equally effective in preventing pregnancy if they are used exactly according to directions. But real life is more varied than a list of instructions. The more often the user has to take action to utilize the method, the more chances for error there are. For example, someone whose schedule is erratic or who is forgetful (or both!) might forget to take the Pill, so the Pill might be less effective for her. A shot or ring might be better because there’s just less to remember on a daily basis.

HOW THEY WORK:

Contraceptive hormones work because their chemical structures are similar to the estrogen and progesterone that women produce naturally. The artificial hormone molecules fit into the locations on cells that would ordinarily be occupied, during pregnancy, by natural estrogen and progesterone. In doing so, they “trick” the body into suppressing ovulation and building a thick, protective mucus in the cervix, both of which occur naturally during a real pregnancy.

Women taking hormones for birth control do not have a true menstrual period because they do not ovulate or build up much of a uterine lining. Most hormonal
methods include twenty-one days of medication, then seven days without medication (for example, a week of placebo pills). In that last week, the woman has breakthrough bleeding as her body withdraws from the effects of the artificial hormones. Since the uterine lining has not thickened, as it would have naturally, there is less blood and tissue being shed, so most women have lighter periods while using hormonal birth control.

“Combined” medications contain artificial versions of both estrogen and progesterone. They tend to mimic the natural menstrual cycle and regulate periods. For many women, they also reduce acne. “Progestin-only” medications, including minipills, contain no estrogen (“progestin” is an alternate spelling of “progesterone,” usually used to refer to the artificial kind). Compared to combined methods, progestin-only methods tend to produce fewer unwanted effects overall, but also tend to cause erratic though usually light bleeding.

Hormonal methods also vary in how often the user has to activate the method (take a pill, change a patch, etc.). Oral contraceptives, Ortho Evra® patch, and NuvaRing® use “three weeks on, one week off” pattern. Oral contraceptives are taken daily for three weeks, then not taken for one week. NuvaRing® is worn in the vagina for three weeks then removed, and a new ring is inserted one week later. With the patch, the user applies a new patch each week for three weeks, then takes a week off before starting the next cycle. Depo-Provera® is given as a shot every three months, and Mirena® intrauterine device lasts five years.

There are a few other hormonal methods, such as Norplant® and Jadelle® subdermal (under the skin) implants, that are approved by the Federal Drug Administration but are not sold in the U.S. There are also methods being researched, such as hormonal methods for men. This article deals only with hormonal methods that are available in the U.S. today.

**ADVANTAGES AND DISADVANTAGES:**

There are some appealing advantages of hormonal birth control. It is very effective in preventing pregnancy, due to triple action of suppressing ovulation, thickening cervical mucus, and thinning the uterine lining. It works 24/7, so there’s no interruption to lovemaking, nothing you have to DO, in the moment, to make it work. There are other reasons people like birth control hormones, beyond the contraceptive effects. Hormonal birth control can reduce risks of ovarian and endometrial cancers. They may reduce acne and premenstrual discomfort, and periods are lighter and more regular (with some hormonal methods). And it can be a big stress relief to know that unplanned pregnancy is very unlikely (as long as the medication is used correctly).

Now let’s consider some disadvantages. Hormonal methods of contraception do not prevent spread of any sexually transmitted infections. Some people get lulled into discontinuing condom use and other safer sex practices, leaving themselves
vulnerable to sexually transmitted infections. Hormones can also be expensive, depending on your insurance coverage; birth control pills can cost over $35 per pack without insurance (less if purchased at Emory University Student Health Services). The cost can add up! Hormonal contraceptives affect the body systemically, not just reproductively, unlike barrier methods, like the condom or diaphragm and spermicide, which affect just the penis and vagina. As a result, hormonal contraceptives can cause unwanted effects, although switching to another brand usually helps. Most significantly, contraceptive hormones increase the risk of potentially fatal circulatory and blood clotting disorders, especially for women who smoke cigarettes and are over the age of 35. Talk with your health care provider about these and other risks. Finally, some women feel uncomfortable with the idea of taking a medication every day to interrupt a normal, healthy process, especially if they have intercourse infrequently.

**TYPES AVAILABLE:**

OK. Suppose you thought through the plusses and minuses and decided that hormonal contraceptives are for you. The next question is, what kind? Pills and minipills are available in dozens of formulations that your clinician can choose from, based on your needs. Ortho Evra® (patch), NuvaRing® (vaginal ring), Depo-Provera® (shot) and Mirena® (intrauterine device) each come in one formulation.

- **The Pill: a Classic, Taken Every Day**

The queen of hormonal birth control is, of course, oral contraceptives (OC’s), a group of drugs so popular that the very word “pill” means The Pill to many people. OC’s are best for women who will remember to take a pill at the same time every single day. The more your pill-taking schedule varies, the more likely it is that you could ovulate, especially with today’s low-dose pills. Minipills are somewhat less effective than combined methods, especially if the user has difficulty taking the pill at the same time every day. There are dozens of different brands of Pill on the market, each with its own chemistry, so most women can take a Pill that fits with their needs. Emory University Student Health Services provides low-cost oral contraceptives for our patients.

- **Ortho Evra® Patch: A Weekly Solution**

Emory University Student Health Services does not write new prescriptions for Ortho Evra® (the patch). The patch is associated with increased risk of potentially fatal blood clots, stroke, or heart attack. Women who want to continue to use Ortho Evra® should talk with their health care provider about these and other risks.
“Doesn’t it wash off in the shower?” No, though admittedly Ortho Evra® patch does look a bit like a Band-Aid. Ortho Evra® is designed to adhere to skin for one week, releasing estrogen and progestin slowly. Writing on the patch or otherwise mistreating it can make it less effective. The user replaces the patch every seven days until she has used three patches, then she takes a break for one week and has her period. It comes in only one color, so it is less visible on light-skinned women. Ortho Evra® is perhaps the least discreet of the hormonal methods; it is easily covered with clothing but apparent when the user is. The patch is easy to use and comfortable.

- **NuvaRing®: One Vaginal Ring Every Twenty-Eight Days**

  NuvaRing® is a soft, flexible plastic ring that releases progestin and estrogen. It is about 2 inches in diameter. A woman wears it in her vagina continuously for three weeks, removes it, and inserts a new ring one week after removing the old one. She has her period during the “week off,” just as with oral contraceptives. It takes some practice to insert the ring, just like tampon and condom use take practice, but NuvaRing® is easy to insert and comfortable to wear. It stays in the vagina during intercourse; a few men say they can feel the ring slightly with their penis. NuvaRing® is circular like a bracelet, not disk-shaped like a plate, so vaginal secretions move naturally out of the vagina. A woman who is comfortable inserting her fingers into her vagina can use NuvaRing® successfully.

- **Depo-Provera®: Injected Every Three Months**

  The Federal Food and Drug Administration recommends that women, especially younger women, use Depo-Provera® for no more that two continuous years, due to an increased risk of osteoporosis, or thinning of the bones due to loss of calcium

  Depo-Provera®, or “Depo” for short, is a progestin-only method, given as a shot every three months. It is highly effective, since the user only has to deal with it every three months—there’s no pill or device to fiddle with on a day-to-day basis. Just be sure you can come back to clinic every three months for your next dose! Irregular bleeding is common for women using Depo, especially in the first year of use, so consider whether it would bother you to start bleeding or spotting “whenever.” After two years of continuous use, there is an increased risk of osteoporosis. Periods are usually lighter overall for women using Depo, which is great for those who have heavy or painful periods. Depo is also very discreet, with no package to hide from nosy people.

- **Mirena® Intrauterine Device: Five Years of Birth Control from One Device**
For women who are in a stable, mutually monogamous relationship that is expected to last for many years to come, there is an intrauterine device (IUD) that releases progestin over the course of five years. The device is made of flexible plastic in the shape of a T. It is inserted into the uterus through the cervix (the opening of the uterus, located inside the vagina) by a healthcare professional. Small threads remain in the cervix so the woman can feel for proper IUD placement, and to enable the healthcare provider to remove the device. In addition to thickening cervical mucus, thinning the uterine lining, and preventing ovulation, Mirena®’s presence in the uterus may prevent implantation or make it more difficult for sperm to move. Mirena® is not recommended for women who have a history of pelvic infection, those who are not in a long-term, mutually monogamous relationship, or those who have not yet had children. Because of these guidelines, undergraduates rarely use Mirena®, but it could be a good choice for some graduate students who fit the recommendations and appreciate long-term, reversible contraception. You may come in to the EUSHS for a family planning visit to discuss whether the IUD is a good option for you.

Although we do not do the insertion or removal of an IUD at student health, we can refer you to an Ob/Gyn who can do this for you. Most insurance plans, including the student health insurance, cover the insertion and removal of the IUD as well as the IUD itself.

**FINAL THOUGHTS AND LINKS:**

Whew. That’s a lot of contraception! Maybe it was easier when it was just the Pill, but now women have several ways to use hormones to reduce pregnancy risk. If you feel that hormones are your best bet, talk with your health care provider about what device fits your medical profile and lifestyle best. Whichever method you choose, be sure your partner wears a condom, and be sure to agree on a safer sex strategy to reduce the risk of spreading sexually transmitted infections. Hormonal methods aren’t that good—yet.

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Helpful Links:

www.accessdata.fda.gov/scripts/cder/drugsatfda/index.cfm (gives information on every legal drug and device in the U.S.)

www.arhp.org/hormonalcontraception (includes slide show about various methods)

Links to product websites:

NuvaRing®

Mirena®

Ortho Evra®

Depo-Provera®

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