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How hormonal contraceptives like the pill work

Pregnancy is impossible if there is no egg cell (ovum) that can be fertilized by a man's sperm. Baby girls are born with many unripened eggs in their ovaries. But a woman cannot get pregnant unless one of these eggs has ripened and left the ovary. That process is called ovulation, and once a woman starts having periods (menstruation), it generally happens once a month.

During ovulation, a ripened egg is released from the ovary, and travels down the fallopian tubes to the womb (uterus). As soon as a woman has ovulated, she can get pregnant. You can read more about the ovaries, the fallopian tubes, and what happens during ovulation here (URL: <http://www.informedhealthonline.org/index.562.en.html>).

Hormones are produced in the body, and they act like chemical messengers. They regulate body functions like the monthly menstrual cycle and also influence body temperature. Hormones trigger ovulation too. The hormones in contraceptives are designed to stop a woman ovulating.

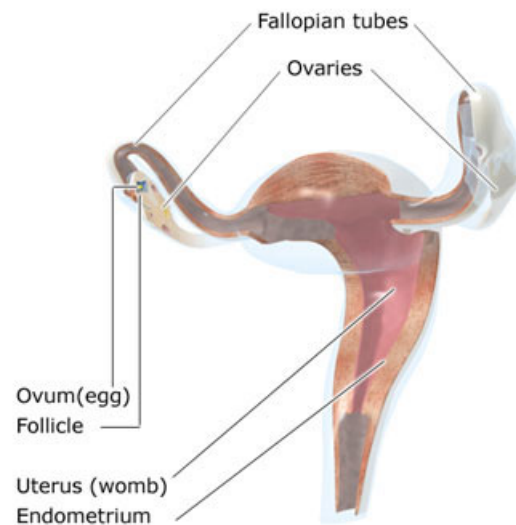
For hormonal contraceptives to work and prevent ovulation throughout every single month, the woman needs to use the contraceptives regularly. Even a few days missing a low-dose pill could mean the woman will ovulate. Contraceptive patches and rings have to be used regularly as well. You can read more about these two contraceptives here (URL: <http://www.informedhealthonline.org/index.455.en.html>).

Using any of these hormonal contraceptives can also affect the body in other ways than just stopping ovulation. For example, the oral contraceptive pill has been shown to relieve menstrual pain. Periods often become less heavy and symptoms like pain and fluid retention can be reduced as well. The pill also thickens vaginal fluid.

The hormones can also cause some adverse effects, like headaches or nausea. There is also a small risk of more serious adverse effects such as development of blood clots (thromboses); these are more of a risk for women who smoke, are very overweight, or have a higher risk of vascular disease in their family. Both German and European regulatory bodies recommend taking these risk factors seriously. It is particularly important not to smoke, because smoking increases the risk of adverse effects. Hormonal contraceptives are not an option for some women who have these risk factors or other health problems. You can talk to your doctor about whether these types of contraceptives are suitable for you.

What happens during ovulation

When a baby girl is born, all of the egg cells that she will ever have in her life are already inside her ovaries. These eggs are enclosed in small sacs called follicles. During puberty, hormones activate the first of these follicles to ripen and release an egg. The release of an egg is known as ovulation. This is the beginning of the fertile phase of a woman's monthly cycle. From this time onwards the hormones make a new follicle ripen each month, and the follicle produces hormones itself.



During the monthly hormonal cycle the membranes lining the uterus (known as the endometrium) change in preparation for a fertilized egg to implant itself. If the egg is not fertilized, it dies. Then, at the end of the cycle, it is shed from the body through the vagina, together with the membranes. This is what a period (menstruation) is. If a woman is not pregnant and is not using hormonal contraceptives, her period is usually a sign that her last cycle has finished and a new one has started.

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Glossary

hormones

“Hormones” is the collective term for different types of messenger substances in the body. They are produced in different organs or tissues and released into the blood or the lymphatic system to be distributed throughout the body. Hormones only have an effect on those parts of the organism that have a corresponding docking site. This is how hormones can have such specific effects. Insulin, estrogens, vasopressin and thyroxine are some well-known hormones. Many medical ingredients imitate the effect of hormones.

Sources

Bundesinstitut für Arzneimittel und Medizinprodukte (BfArM). *Risikobewertung: Hormonale Kontrazeptiva und venöse Thrombosen*. BfArM 2009. Accessed October 23, 2009: [Full text - in German (URL: <http://www.bfarm.de/DE/Pharmakovigilanz/risikoinfo/2009/kok-vte.html>)]

The German Institute for Quality and Efficiency in Health Care (IQWiG)

The German Institute for Quality and Efficiency in Health Care (IQWiG) was established by legislation to provide evaluations of the effectiveness, quality and efficiency of healthcare services. This includes the assessment of medicines as well as the publication of health information for consumers and patients.

Evidence basis of our health information

Our information is based primarily on systematic reviews of the effects of health care. Systematic reviews are necessary to gain an objective picture of health care. In order to do this, a clear question is formulated. Researchers then find all the relevant studies that could answer this question. They then evaluate those studies.

You can find a list of the evidence and other scientific literature on which this information is based at [**www.informedhealthonline.org**](http://www.informedhealthonline.org)

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