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Contraception: How do the contraceptive patch and ring compare to the pill?

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The contraceptive pill (often simply called "the pill") is the most commonly used form of contraception in many countries. Newer hormone-based methods like the skin patch and vaginal ring are less well known and not used as much. In Germany, only 2% of people who use birth control use one of these two options.

All three methods work in similar ways. They differ in the way that the hormones are delivered. Like the pill, the skin patch and vaginal ring both contain hormones that suppress the woman's ovulation. Ovulation is when a mature egg (ovum) is released by the ovary. If this does not happen, pregnancy is not possible. You can read more about how hormonal contraceptives work here (URL: http://www.gesundheitsinformation.de/how-hormonal-contraceptives-like-the-pill-work.55.de.html).

One of the theoretical benefits of the vaginal ring and skin patch is that they are meant to deliver the hormones more steadily over longer periods of time. Women who take the pill often forget to take it on one or more days, and this reduces the protection against getting pregnant. Whereas the pill has to be taken every day, the ring and skin patch only have to be changed once or three times a month.

It is important to be aware that, unlike condoms, none of these hormone-based contraceptives provides protection against sexually transmitted diseases.

The contraceptive skin patch

The contraceptive skin patch is a very thin patch. It is just under 5cm by 5cm in size and can be placed on the woman's behind, belly, the outside of her upper arm or anywhere on her upper body, with the exception of her breasts. It should not be worn anywhere where her clothes will rub against it. Activities like having a shower, a bath or swimming usually do not make it come off. The patch is changed once a week in the first three weeks of the menstrual cycle. No patch is worn during the fourth week.

Like most birth control pills, the patch contains a combination of the hormones oestrogen and progestin. Whereas the hormones in the pill enter the bloodstream through the stomach and bowel, the skin patch avoids the digestive system. Instead, the hormones are absorbed by the skin and enter the bloodstream in that way. Because the body processes oestrogen differently through the skin than through the gut, women who use the skin patch get more oestrogen than those who are on the pill.

The vaginal ring

The vaginal ring is about 5cm in diameter and is made of flexible lightweight plastic. It also contains a combination of the hormones oestrogen and progestin. The woman inserts the ring into her vagina and leaves it there for exactly three weeks, after which she removes it. During the seven days that follow she has a period, and after exactly seven days she inserts a new ring. The hormones in the ring enter the bloodstream through the wall of the vagina, and work in the same way as the pill and the skin patch.

The ring should be inserted and removed at the same time of day every time. For example, if a woman inserts the ring at 10pm on a Wednesday, she should remove it again at 10pm on the Wednesday 3 weeks later, and insert a new ring on the Wednesday after that.

The vaginal ring should be inserted far enough and the woman should not be able to feel it. If it falls out, it is important to either insert a new ring, or wash the old ring and reinsert it, as soon as possible.

The three forms of contraception are similarly effective in preventing pregnancy

Researchers from the Cochrane Collaboration looked for randomised controlled trials that compared the two newer methods of contraception with the pill, to see how effective they were. You can read about how trials like this are done and why they provide the most reliable research results here (URL: http://www.gesundheitsinformation.de/evidence-based-medicine.). The Cochrane Collaboration is an international network of researchers who systematically review trials that test the benefits of health care interventions. The Cochrane researchers only looked at pills that are based on a

combination of oestrogen and progestin. The less commonly used "mini pill", which only contains progestin, was not included. They found 15 trials involving more than 6,800 women. Of these, 5 trials compared the skin patch with the pill, and 10 compared the vaginal ring with the pill.

The three forms of contraception were shown to be similarly effective. Despite using one of the contraceptives, about 1 in 1,000 women became pregnant per cycle. The pregnancy rate could be different in long-term everyday use, because some women may be more careful when they are using contraception in research conditions. If a woman stops using her skin patch, ring or pill for several hours or days other than during the week of her period, she could become pregnant.

The patch vs. the pill

Women who were using the skin patch were more likely to stop using it because of adverse effects than those who were on the pill. The number of women who removed the patch before the end of the trial also depended on the dose of the drug in the patch. Overall, patch users had more breast discomfort, painful periods and nausea.

On the other hand, the women who used the skin patch for a long time were more likely to use their contraceptive method consistently. It was more common for women to forget to take their pill on one or more days, whereas the skin patches were used with fewer interruptions.

In 2007 and 2008, the drug regulatory agencies in Europe and the USA, the European Medicines Agency (EMA) and the Food and Drug Administration (FDA), required additional safety information to be added to the product information for the Ortho Evra contraceptive patch. This was to notify the potential for increased adverse effects related to oestrogen in the patch, especially blood clots in the leg veins (venous thromboembolism).

The vaginal ring vs. the pill

Ring users had more vaginal infections (vaginitis) than women using the pill – but fewer other adverse effects in total, including problems like nausea, irritability and depression. Women were a little more likely to stop using the pill than the ring because of adverse effects, but there was not a major difference.

Weighing up the pros and cons

If used consistently, all three forms of hormonal contraception appear to offer similar protection against pregnancy. The choice a woman makes may depend on how well she would tolerate the different methods, and how she feels about the potential adverse effects. Another factor is how comfortable a woman is about using the method. Does she mind swallowing a pill every day? Would wearing a patch on her body for several weeks bother her? Can she or her partner feel the vaginal ring during sex? These are just a few questions – every woman has to find out her own preferences.

All three methods also have other adverse effects which are similar: sometimes, for example, there is a bit of breakthrough spotting or bleeding between periods. There is also a small risk of more serious outcomes, such as a blood clot (thrombosis), especially in women who smoke, are obese or are at high risk of developing a blood clot because of their family history.

Hormonal contraception is one of many effective birth control methods. You can get more information about contraceptive options from your doctor or women's health centre.

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Created at: 10/29/2008 | Last update: 04/01/2010

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.

Cochrane Collaboration

The Cochrane Collaboration is an international network of thousands of researchers and others. They work together in teams called Cochrane Review Groups to answer questions about health care by doing systematic reviews of evidence. To achieve this, the members of the Collaboration have developed systems and methods for systematically finding and analysing the results of trials of health care interventions. The goal of the Cochrane Collaboration is to help patients, health care practitioners and others make more informed decisions about health care. You can read more about the Cochrane Collaboration at their website.

depression

Depression is one of the most common mental illnesses, and it can be mild, moderate or serious. There are several different types of depression that can be recognised by different signs. Which symptoms of depression occur and how strong and frequent they are vary from person to person. People in any social or age group can be affected, both women and men. If someone has had at least two of the following symptoms for longer than two weeks, it might mean that they are depressed: deep sadness; listlessness; loss of interest in the things they usually care about.

Created at: 10/29/2008 | Last update: 04/01/2010

Sources

IQWiG health information is based on research in the international literature. We identify the most scientifically reliable knowledge currently available, particularly so-called "systematic reviews". These summarise and analyse the results of scientific research on the benefits and harms of treatments and other health care interventions. This helps medical professionals and people who are affected by the medical condition to weigh up the pros and cons. You can read more about systematic reviews and why these can provide the most trustworthy evidence about the state of knowledge here (URL: http://www.gesundheitsinformation.de/evidence-based-medicine.61.en.html) . The authors of the major systematic reviews on which our information is based are always approached to help us ensure the medical and scientific accuracy of our products.

Food and Drug Administration (FDA). FDA approves update to label on birth control patch. *FDA News*. 18 January 2008. [Full text (URL: http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/2008/ucm116842.htm)]

German Federal Institute for Drugs and Medical Devices (BfArM). *Risikobewertung: Hormonale Kontrazeptiva und venöse Thrombosen*. BfArM 2009. Accessed on 30.03.2010: [Full text (URL: http://www.bfarm.de/cln_028/nn_1339704/DE/Pharmakovigilanz/risikoinfo/2009/kok-vte.html__nnn=true) – in German]

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Created at: 10/29/2008 | Last update: 04/01/2010

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**

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Created at: 10/29/2008 | Last update: 04/01/2010