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## Contraception: Do the pill or other hormonal contraceptives cause weight gain?



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Combined hormonal contraceptives include the oral contraceptive pill (also called OCP or simply “the pill”), the contraceptive patch and the contraceptive vaginal ring. They are called combined contraceptives because they include two forms of hormones: an estrogen and a progestin. There are also pills with only one hormone in them (often called “mini pill”). For many women, hormonal contraceptives are the most convenient form of birth control, because they do not have to think about it before or during sex and the contraception is under the woman’s control. You can read about how hormonal contraceptives work [here](http://www.informedhealthonline.org/index.454.en.html) (URL: <http://www.informedhealthonline.org/index.454.en.html>).

Find more information on this topic in our feature (URL: <http://www.informedhealthonline.org/index.551.56.en.html>). The pill is the most widely used form of birth control in many countries. One of the more common reasons women report for stopping using the pill is that they believe it has been causing them to gain weight. Clinical trials on this are contradictory: Some women report that they have put on weight, while others report that they have lost weight. This is why both weight gain and weight loss are listed as possible adverse effects on the product information of hormonal contraceptives. However, the issue of whether or not contraceptives can truly cause weight gain or loss is the subject of debate.

## **The controversy on whether hormonal contraceptives influence weight**

The suspicion that hormonal contraception causes women to gain weight has largely been based on theory. If people put on weight it is usually due to one of the following changes:

- Fluid retention or bloating
- Increased muscle (because muscle is heavier than other tissue)
- Deposits of fat

Theoretically, hormonal contraceptives could contribute to weight gain if they led to fluid retention and increased body fat. Combined contraceptives are also sometimes

suspected to affect women’s appetites, which might make them eat more.

It is not easy to prove or disprove this suspicion. The difficulty is that women who do not use hormonal contraceptives also put on weight over the years. So the best way to give a valid answer to the question whether the pill influences body weight would be trials studying two groups: one group with women who use hormonal contraceptives over a longer period of time, and one group with women who do not use hormonal contraceptives. Then the two groups would be compared with respect to their changes in weight.

## **Three decades of trial results**

Researchers from the Cochrane Collaboration looked for this kind of conclusive trials on hormonal contraceptives that measured weight.

The Cochrane researchers were only able to find four trials with around 1,400 women that compared combined hormonal contraceptives with dummy medications (placebos) and measured the impact on weight. One of these trials was done 30 years ago. Hormones were used at a higher dose than they are in medications today. None of the trials found a clear link between hormonal contraception and weight gain. But these trials were not big enough to be able to provide a definite answer.

It is not surprising that there are only few of these trials. Because hormonal contraceptives are a reliable method of contraception, women are reluctant to take part in a comparison with other possibly less reliable contraceptive products or even dummy medications. In addition, most of the trials did not routinely monitor participants' weight. At most, only the number of women reporting to have stopped taking the pill because of weight gain was recorded. It cannot be said with any certainty, however, whether total weight went up more in one of the groups.

## **Strong impact of the pill on weight would be noticeable**

This is why the researchers also looked for trials where different contraceptives were compared with one another and weight was carefully recorded. They did find 45 trials, but because many different kinds of hormonal contraceptives were compared these trials are not enough to draw conclusions on the effects of individual contraceptives. The researchers concluded that these trials did not provide sufficient evidence that hormonal

contraceptives lead to weight gain either.

What is more, no link was found between hormone dosage and weight gain. If hormones really did influence weight gain, then you would expect higher doses to lead to more weight gain. Such a link was not established.

On the whole, the researchers concluded that it seems very unlikely that hormonal contraceptives cause major weight gain. If there was a strong influence, this would have been noticed in the trials. This does not rule out the possibility that individual women might experience weight gain, however.

If you have put on weight after starting to use a hormonal contraceptive and you suspect the contraceptive might have caused it, you can talk with your doctor about whether there is another option for you. There are many brands and combinations, including low dose options. Non-hormonal contraceptives might also be an option.

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**Next planned update:** January 2015. You can find out more about how our health information is updated here (URL: [http://www.informedhealthonline.org/our-methods.643.en.html?bab\[subpage\\_id\]=0-8](http://www.informedhealthonline.org/our-methods.643.en.html?bab[subpage_id]=0-8))

## 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.

### evidence

Evidence is what we call scientific proof from well-conducted, good-quality scientific trials that have been carefully designed to answer specific questions. Depending on the types of questions, different scientific research methods (types of study) are most appropriate to find reliable answers to these questions. Randomized controlled trials (RCTs), for example, are the best way to get reliable evidence on the effectiveness of medical treatments (interventions). This type of study, however, is not the best form of evidence for all possible questions, and does not provide the best answers to all kinds of questions, either. Epidemiological studies, for example, are very suitable for establishing well-founded proof for the spreading of a disease in the population.

## **Sources**

IQWiG health information is based on research in the international literature. We identify the most scientifically reliable knowledge currently available, particularly what are known as “systematic reviews”. These summarize and analyze 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.informedhealthonline.org/index.61.en.html>) . We also have our health information reviewed to ensure medical and scientific accuracy.

Gallo MF, Lopez LM, Grimes DA, Schulz KF, Helmerhorst FM. Combination contraceptives: effects on weight. Cochrane Database of Syst Rev 2011; (9). CD003987. [Summary (URL: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD003987.pub4/abstract>) ]

## **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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