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The Combined Oral Contraceptive (COC) Pill

The pill contains two hormones - an oestrogen and a progestogen. If taken correctly, it is a very effective form of contraception.

The combined oral contraceptive (COC) pill is often just called 'the pill'. It contains two hormones - an oestrogen and a progestogen. If taken correctly, it is a very effective form of contraception.

How does the pill work?

It works in three ways:

- The pill changes the body's hormone balance so that your ovaries do not produce an egg (ovulate).
- It also causes the mucus made by the neck of the womb (cervix) to thicken. This makes it difficult for sperm to get through to the womb (uterus) to fertilise an egg.
- The pill also makes the lining of the womb thinner. This makes it less likely that a fertilised egg will be able to attach to the womb.

There are different types and strengths of oestrogens and progestogens.

How effective is the pill?

About 3 women in 1,000 using the pill correctly will become pregnant each year. Correct use means not missing any pills, re-starting the pill on time after the pill-free week and taking extra contraceptive precautions when necessary - see below. Closer to 90 women per 1,000 will become pregnant with normal (not perfect) usage.

For comparison, when no contraception is used, more than 800 in 1,000 sexually active women become pregnant within one year.

Why would I choose the pill?

- It is very effective.
- It does not interfere with sex.
- Periods are regular and may be less painful and lighter.
- It relieves premenstrual tension for some women.
- It improves acne in some women.
- It reduces the risk of developing cancers of the ovary, colon and womb (uterus). The protection against cancer of the ovary is quite marked and seems to continue for many years after stopping the pill. It may also reduce the risk of developing certain types of cyst in the ovary.
- It may also reduce the risk of pelvic infection (as the thicker mucus prevents germs (bacteria), as well as sperm, from getting into the womb).
- It may help to protect against some non-cancerous (benign) breast disease.

Are there any side-effects when taking the pill?

Most women who take the pill do not develop any side-effects. However, a small number of women feel sick, have headaches or find their breasts are sore when they take the pill. These usually go away within days or weeks of starting the pill. If they continue (persist) there are many different brands of pill you can try, which may suit you better.

Other side-effects are uncommon and include tiredness, change in sex drive, skin changes and mood changes. These are unusual and you should tell your doctor or practice nurse if you have any lasting side-effects. Many people believe that taking the pill makes you put on weight; however, this has never been proven in studies.

The pill sometimes causes a rise in blood pressure, so people taking it should have their blood pressure checked every six months. The pill may need to be stopped if your blood pressure becomes too high.

It is common to have some light bleeding between periods when you start the pill. This is nothing to worry about. It usually settles by the end of the third packet. If it does not, you should tell your doctor.

Are there any risks in taking the pill?

The pill can have some serious side-effects; however, these are very uncommon. For most women the benefits of the pill outweigh the possible risks. All risks and benefits of you taking the pill should be discussed with your doctor or nurse.

People taking the pill have a small increased risk of developing a blood clot (thrombosis). Blood clots can cause blockages in veins (causing **deep vein thrombosis** or **pulmonary embolism**) or in arteries (which can cause **heart attacks** or **strokes**). This is more so in the first year of taking the pill. This is why people with a higher risk of blood clots cannot take the pill. The things that might mean you are at a higher risk are listed in the section 'Who cannot take the pill?', below. The risk of a blood clot from taking the pill is considerably smaller than the risk of a blood clot if you were pregnant.

You must see a doctor straightaway if you have any of the following:

- A bad headache, or migraines.
- Painful swelling of your leg.
- Weakness or numbness of an arm or leg.
- Sudden problems with your speech or sight.
- Difficulty breathing.
- Coughing up blood.
- Pains in your chest, especially if it hurts to breathe in.
- A bad pain in your tummy (abdomen).
- A faint or collapse.

These symptoms could be due to a blood clot.

Taking the pill can increase the risk of some types of cancer but also protect against other types. Research into the risk of breast cancer in people taking the pill is complicated and the results are not straightforward. Some studies suggest a possible link between the pill and a slightly increased risk of cancer of the neck of the womb (cervix) if the pill is taken for more than eight years. Some research suggests a link between using the pill and developing a rare liver cancer.

However, there is a reduced risk of developing cancer of the ovary, womb (uterus) and colon in people taking the pill. When all cancers are grouped together, the overall risk of developing a cancer is reduced if you take the pill. Further research is ongoing.

Note: if you need to go into hospital for an operation, or you have an accident which affects the movement of your legs, you should tell the doctor that you are taking the pill. The doctor may decide that you need to stop taking the pill for a period of time to reduce your risk of unwanted blood clots whilst you recover.

Who cannot take the pill?

Most women can take the pill. If you are healthy, not overweight, do not smoke and have no medical reasons for you not to take the pill, you can take it until your menopause. Women using the pill will need to change to another method of contraception at the age of 50 years. Your doctor or family planning nurse will discuss any current and past diseases that you have had. Some diseases cause an increased risk or other problems with taking the pill. Therefore, the pill will not be prescribed to some women with certain diseases - for example, hepatitis or breast cancer, or if you are taking certain medicines.

These are some of the conditions which *may* mean you should not take the pill:

- If you are over 50 years old.
- If your BMI is 35 kg/m² or more.
- If you smoke and are aged 35 years or more. (Also if you are aged over 35 years and have smoked within the previous year.)
- If you have **migraine** with aura.
- If you have had a baby up to six weeks ago and are breast-feeding.
- If you had a baby up to three weeks ago and are not breast-feeding and have no other risk factors for a blood clot in your veins - a thrombosis. If you have other risk factors you should not take it before six weeks.
- If you have more than one risk factor for **heart disease** (such as smoking, high blood pressure, obesity, diabetes, older age).
- If you have **high blood pressure** (higher readings mean your risks are higher).
- If you have problems with your circulation (vascular disease).
- If you have a history of **venous thrombosis** or have one currently.
- If you have a family history of thrombosis in a first-degree relative (father/mother/sister/brother) under the age of 45 years.
- If you cannot move around for a time because of major surgery or disability.
- If you have a history of **coronary heart disease** or **stroke**.
- If you have **diabetes** that has affected your kidneys, eyes, nerves or blood vessels.
- If you have **problems with your heart valves** or have congenital heart disease with complications. Also **cardiomyopathy** with impaired cardiac function.
- If you have an irregular heartbeat - **atrial fibrillation**.
- If you have **breast cancer**.
- If you have primary **liver cancer** or severe **cirrhosis**.
- If you have **gallbladder disease** or **cholestasis**.
- If you have **systemic lupus erythematosus (SLE)** with positive antiphospholipid antibodies.
- If you are known to have mutations that make your blood more likely to clot, such as factor V Leiden deficiency.
- If you are taking liver enzyme-inducing medication which interacts. This includes some antiretroviral therapy, certain antibiotics (rifampicin, rifabutin), St John's wort and some anticonvulsants.

Not all these conditions mean you definitely shouldn't have the pill. Your doctor or nurse will be able to work out whether it is safe for you individually. There are very clear guidelines about who should or shouldn't take it, which they can refer to.

How do I take the pill?

There are different brands of pill which contain varying amounts and types of oestrogen and progestogen. There is usually a leaflet inside the packet of pills. Read the leaflet carefully. Make sure you understand how to take the pill and what to do in special situations, such as:

- If you miss a pill.
- If you have been being sick (vomiting).

The following gives a general guide.

Brands with 21-day pills

Most brands of pill come in packs of 21. To start, it is best to take the first pill on the first day of your next period. You will be protected against pregnancy from then on. If you start the pill on any other day, you need an additional contraceptive method (such as condoms) for the first seven days. You should take your pill at about the same time each day for the 21 days.

You then have a break of seven days before starting your next pack. You will usually have some bleeding in the seven-day break, although it may happen later. This is called a withdrawal bleed and is like a period, although strictly speaking it is not a menstrual period. You will be protected from pregnancy during the seven-day break, provided you have taken your pills correctly *and* you start the next pack on time. Start the next pack after the seven-day break whether you are still bleeding or not. If you take the pill correctly, you will start the first pill of each pack on the same day of the week. (It is only when you start the pill for the first time that you take the first pill on the first day of your period. After this, you should ignore your period and start each packet on the same day of the week as the month before. Write down the day of the week you start your first pack, and start all your packets after that on that day.)

Most 21-day pills have the same amount of oestrogen and progestogen in each pill. Some brands, called phasic pills, vary the dose in two or three steps throughout the 21 days. The pills in these packets have to be taken in the correct order as directed on the packet. One type of pill called Qlaira® has a changing dose throughout the cycle and it also needs to be taken in the correct order.

Brands with pills for every day

Most of these contain 21 active and seven dummy pills. There are 28 pills in a packet. Instead of a seven-day break, you carry on taking the dummy pills. As soon as you finish one packet, you go on to the next. The idea is that you don't have to remember to restart the pill after a seven-day break and you develop a routine of taking a pill every day. The pills have to be taken in the correct order. Read the instructions carefully, particularly on when to start, which pill to start with and how long it takes for the contraceptive effect to begin. The newer pills Qlaira® and Zoely® are slightly different. In these pills there are 28 pills in the packet. Qlaira® has two dummy pills, as well as changing doses throughout the cycle. Zoely® has four dummy pills, and all the other pills in the packet are the same dose. These pills are also taken without a seven-day break.

Clinical Editor's comments (October 2017)

Dr Hayley Willacy has recently read a speech given by family planning expert, Professor John Guillebaud. He now advises women to take the pill every day, although this is an 'off-licence' use. This is backed up by a large amount of evidence and is supported by medical authorities in the UK and at the World Health Organization. Continuous use makes the pill more effective as a contraceptive, and reduces problems such as period pain, premenstrual syndrome and migraine. Continuous pill-taking also removes the inconvenience of the monthly withdrawal bleeding, which Professor Guillebaud said has "no known health benefits".

What if I miss or forget to take one or more pills?

Read the leaflet that comes with your brand of pill for advice on what to do. Your ovaries could produce an egg (ovulate), and therefore you could become pregnant, if you miss pills. This is particularly a risk if the missed pills are at the end or beginning of the packet. The advice depends on how many pills you have missed, and when they were missed in the cycle. If you are 24 hours late, or more, taking your pill, it counts as a missed pill.

If one pill is missed, anywhere in the pack, take the missed pill now. This may mean taking two pills in one day. You should take the rest of the pack as usual. No extra contraception is needed. You should have the seven-day break as normal.

If two or more pills are missed anywhere in the pack, take the last missed pill now. This may mean taking two pills in one day. Any earlier missed pills should not be taken. You should take the rest of the pack as usual. You should also use extra precautions (ie use a condom or don't have sex) for the following seven days.

You may need emergency contraception (the morning after pill or similar) if you have had unprotected sex in the previous seven days and have missed two or more pills in the first week of a pack. This also applies if you start your pack two or more days late.

You should start the next pack of pills without a break, if there are fewer than seven pills left in the pack (after the missed pill).

If you are unsure what to do, or are unsure whether you have taken the pill correctly, use other forms of contraception (such as condoms) and seek advice from a doctor or nurse.

Note: if you are on the pills called Qlaira® or Zoely® this advice may not apply. The information that comes with the packet should tell you what to do if you miss pills. If you are still not sure, ask your doctor or nurse.

Do other medicines interfere with the pill?

Yes, some do but most do not. Therefore, before you take any other medicines, including those available to buy without a prescription, as well as herbal and complementary medicines, ask your doctor or pharmacist if they stop the pill from working properly. He or she will advise you on what to do.

For example, some medicines that are used to treat epilepsy and tuberculosis (TB) can stop the pill from working properly. St John's wort is an example of a commonly used herbal remedy that can affect the pill.

Antibiotic medicines

Antibiotics (other than one called **rifampicin**) do not interfere with the effectiveness of the pill. In the past it was recommended that if you were taking antibiotics and were also taking the pill, you should use additional contraception. This is **no** longer the current recommendation after more recent evidence was reviewed. You should continue taking your pill as normal if you also need to take any antibiotics.

What if I vomit or have diarrhoea?

If you are sick (vomit) within 2-3 hours of taking a pill, the pill will not have been absorbed. If you are well enough, take another pill as soon as possible. Provided that you do not vomit this second pill and it is taken on the same day, you will remain protected from pregnancy. If you continue to vomit, the advice is the same as for missing pills (see above). Mild diarrhoea does not affect the absorption of the pill. Severe diarrhoea may affect it and if you have severe diarrhoea, consider this as the same as missing pills (see above).

What happens if I don't have a period (withdrawal bleed) between packs?

It is normal to have bleeding during the seven-day break between pill packs (or when taking the dummy pills in pills taken every day). However, it is quite common for there to be no bleeding between pill packs. You are not likely to be pregnant if you have taken the pill correctly and have not been sick (vomited) or taken any medicines that can interfere with the pill. Start the next pack after the usual seven-day break and continue to take your pill as usual. Do a pregnancy test or see your doctor or nurse if:

- You don't have any bleeding after the next pack (two packs in total); **or**
- You have not taken the pill correctly; **or**
- You have any reason to think that you may be pregnant.

A pregnancy test may be advised.

Bleeding whilst on the pill (breakthrough bleeding)

During the first few months, while your body is adjusting to the pill, you may have some vaginal bleeding in addition to the usual bleeding between packs. This is not serious but more of a nuisance. It may vary from spotting to a heavier loss like a light period. Do not stop taking your pill. This usually settles after the first 2-3 months. If it continues, see your doctor or nurse. Another brand of pill may be more suitable for you.

Can I delay or skip a period (withdrawal bleed)?

There are times when it is useful not to have a period - for example, during exams or holidays. Check with your doctor or nurse about the best way to do this with your particular brand of pill. For the commonly used pill types (that is, not bi-phasic or tri-phasic or the pills that are taken every day with 28 pills in the packet), you can go straight into your next pack without a break. Have the usual seven-day break at the end of the second packet.

Further reading & references

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