Patient

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# Aspirin and other antiplatelet medicines

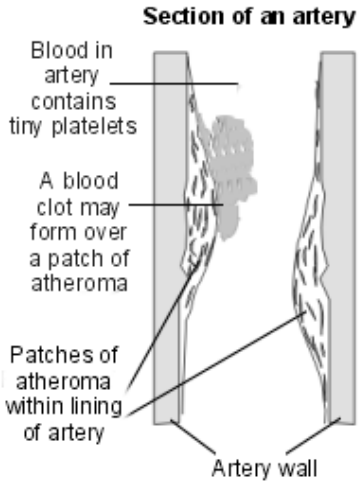
Most people who have a cardiovascular disease (for example, angina, peripheral arterial disease, or a previous heart attack, transient ischaemic attack (TIA) or stroke) take a low-dose aspirin (75 mg) each day or clopidogrel (75 mg) each day. This reduces the risk of having a heart attack by about a third. It reduces the risk of having a stroke by about a quarter. A daily low dose of aspirin also reduces the risk of developing a number of common cancers. Some doctors recommend that all people aged 45-50 should consider taking a daily low dose of aspirin until the age of about 75. But, **discuss the pros and cons and your own circumstances with your GP before taking regular aspirin or clopidogrel**. This is because in some people these can cause serious bleeding from the gut, which is sometimes fatal.

## ASPIRIN - TO PREVENT BLOOD CLOTS

## What does aspirin do?

Aspirin is a medicine that has been used for many years as a painkiller. However, it has another action to lower the risk of forming a blood clot in the arteries of the heart (coronary arteries) or brain. This lowers the risk of having a heart attack (myocardial infarction) or stroke.

# How does aspirin work?




Aspirin helps to prevent blood clots forming. A blood clot may form in a blood vessel (artery) if a lot of platelets stick on to some atheroma (see below). A clot in an artery may stop blood flowing to the tissues further down. If a blood clot forms in an artery in the heart or brain, it may cause a heart attack or stroke.

Atheroma **patches** are like fatty lumps that develop in the inside lining of some arteries. This mainly occurs in older people and is sometimes called hardening of the arteries.

**Platelets** are tiny particles in the blood, which help the blood to clot when a blood vessel is cut. Platelets sometimes stick on to atheroma inside an artery.

Low-dose aspirin reduces the stickiness of platelets. This helps to stop platelets sticking to a patch of atheroma and forming a blood clot.

# What is the dose of aspirin to prevent blood clots?

The usual dose to prevent blood clots is 75 mg each day. This is a lot less than the dose for pain relief. Taking more than the recommended dose does not make aspirin work any better to prevent blood clots but increases the risk of side-effects developing. Therefore, stick to the dose recommended by your doctor, which is usually 75 mg daily.

If you take low-dose aspirin to prevent blood clots and you need to take painkillers (for example, for headaches) it is best to take paracetamol rather than a higher dose of aspirin.

Who should take low-dose aspirin to prevent blood clots?

### People with known cardiovascular diseases

Cardiovascular diseases are diseases of the heart or blood vessels. However, in practice, when doctors use the term cardiovascular disease they usually mean diseases of the heart or blood vessels that are caused by atheroma. Patches of atheroma are like fatty lumps that develop in the inside lining of some blood vessels (arteries). These diseases include heart attack, angina, stroke, transient ischaemic attack (TIA) and peripheral arterial disease. If you have, or have had, any of these diseases, you will normally be advised to take low-dose aspirin to help to prevent further problems or complications.

Taking aspirin when you have a cardiovascular disease, to reduce the risk of future cardiovascular diseases, is known as secondary prevention. For people with cardiovascular diseases there is a lot of benefit from taking aspirin. Several studies involving thousands of people have proved that the risk of having a heart attack or stroke is much reduced in these people if they take aspirin. For example, the risk of having a non-fatal heart attack is reduced by about a third. The risk of having a non-fatal stroke is reduced by about a quarter. The risk of dying is reduced by about a sixth.

**Note**: taking aspirin is not a substitute for preventing atheroma from developing. If possible, you should also reduce any risk factors. For example, do not smoke, do some regular physical activity, eat a healthy diet and keep your weight in check.

## Why doesn't everyone take aspirin to prevent blood clots?

There is a small risk of developing serious side-effects with aspirin (see below). For people with a cardiovascular disease, studies have shown that the benefits of taking aspirin far outweigh the small risk of side-effects. But, for people who do not currently have a cardiovascular disease, on average, even the small risk of side-effects from aspirin is greater than the benefit relating to blood clots. (However, see below about protecting against cancer.)

## What about people with a high risk of developing a cardiovascular disease?

Everybody has some risk of developing atheroma that may cause one or more of the above cardiovascular diseases. Patches of atheroma are like fatty lumps that develop in the inside lining of some blood vessels. However, certain risk factors increase the risk. These include:

- High blood pressure.
- A high cholesterol level.
- Smoking.
- Lack of exercise.
- Obesity.
- An unhealthy diet.
- Excess alcohol.
- A strong family history of cardiovascular disease.
- Certain ethnic groups.
- Being male

See separate leaflet called Preventing Cardiovascular Diseases, which includes details about risk factors.

In the past, people at a high risk of developing a cardiovascular disease were recommended to take aspirin. This is called primary prevention. That is, aiming to prevent a disease occurring before it happens. However, there have been some recent studies which have not shown much benefit of taking aspirin in those people with an increased risk of cardiovascular disease (including those with diabetes or high blood pressure). In addition, aspirin treatment can cause serious side-effects in a small number of users. Therefore, to prevent heart attacks and strokes, the risks of taking aspirin outweigh any benefits for people who do not have a cardiovascular disease.

But, again, see below regarding preventing cancer.

# Are there any side-effects from low-dose aspirin?

Most people do not have any side-effects with low-dose aspirin.

The most serious possible side-effects that affect a small number of people include the following:

- Bleeding in the stomach or gut. This is more common if you have a stomach or duodenal ulcer. It is also more likely if you take a steroid medicine or an anti-inflammatory medicine (such as ibuprofen) as well. As a rule, it is best to avoid taking both aspirin and these other medicines. If you develop upper tummy (abdominal) pains, pass blood or black stools (faeces), or bring up (vomit) blood, stop taking the aspirin. Then see your doctor as soon as possible or go to the nearest casualty department.
- Rarely, some people are allergic to aspirin.
- Aspirin can occasionally make breathing symptoms worse if you have asthma.

If you have problems with taking aspirin to prevent blood clots, then possible options include:

- Taking an alternative antiplatelet medicine such as clopidogrel.
- If bleeding from the stomach or gut is a problem then another medicine may be prescribed to protect the lining of the stomach and gut.

### How to use the Yellow Card Scheme

If you think you have had a side-effect to one of your medicines you can report this on the Yellow Card Scheme. You can do this online at www.mhra.gov.uk/yellowcard.The Yellow Card Scheme is used to make pharmacists, doctors and nurses aware of any new side-effects that medicines or any other healthcare products may have caused. If you wish to report a side-effect, you will need to provide basic information about:

- The side-effect.
- The name of the medicine which you think caused it.
- The person who had the side-effect.
- Your contact details as the reporter of the side-effect.

It is helpful if you have your medication - and/or the leaflet that came with it - with you while you fill out the report.

## Other antiplatelet medicines used to prevent blood clots

As mentioned earlier, platelets are tiny particles in the blood, which help the blood to clot. There are other medicines which have a similar effect on reducing platelets from sticking together. They work in slightly different ways, acting on different chemicals but with the similar end result of preventing blood clots. They include clopidogrel, prasugrel, dipyridamole and ticagrelor.

As a rule, aspirin is usually the preferred medicine. Sometimes, one of these other medicines is used if there is a problem with using aspirin. Sometimes, aspirin plus another antiplatelet medicine are taken together. This is mainly advised when there is a particularly high risk of developing a blood clot. For example, for a certain period of time after having a heart attack, a stroke or a TIA, and during certain surgical procedures to the heart or coronary arteries.

## ASPIRIN - TO PREVENT CANCER

### A study published in 2010

In 2010 a large study by Rothwell and colleagues was published that had looked into the effect of aspirin on preventing cancer. The study looked at the rates of cancer in about 25,000 people. The study compared those who had taken aspirin against those who had not over a number of years. The results showed that a small daily dose of aspirin - 75 mg - reduced the risk of developing a number of common cancers. This includes cancers of the bowel, lung, prostate gland and gullet (oesophagus).

This study showed that the reduction in risk with taking aspirin varies for each type of cancer. However, overall, for a middle-aged person who takes aspirin for a number of years, the reduced rate of developing cancer seemed to be about 20-25%. However, you have to remember - this is a relative reduction in risk and not an absolute reduction. For example, if you have a 5 in 100 risk of developing a disease, that is an absolute risk. If a treatment reduces the risk of developing that disease by 20%, your risk goes down to a 4 in 100 risk (as 20% of 5 is 1).

The absolute risk of developing a particular cancer varies depending on the type of cancer, your age (the risk goes up the older you get), and if you have certain risk factors. For example, lung cancer is much more common in smokers.

One example: the rough overall risk of developing bowel cancer is about 4 in 100 (8 in 200). In this study, aspirin was found, on average, to reduce the risk of developing bowel cancer by about 40%. This would reduce the absolute risk to about 2.5 in 100 (5 in 200), as 40% of 4 is just over 1.5.

And, as mentioned above, aspirin causes side-effects in some people. For example, the overall risk of bleeding in the gut, caused by aspirin, is about 1 in 1,000 per year. Of these, about 1 in 20 are fatal bleeds. So, over a 20-year period, 1 in 1,000 people taking low-dose aspirin are likely to die from a fatal bleed. But, remember too, the risk of bleeding varies depending on things such as if you have a history of a peptic ulcer, are taking certain other medicines, etc (detailed earlier).

## Other research studies

A further study in 2012 published by Rothwell and colleagues was even more encouraging. It concluded that the benefits of aspirin to prevent cancer were even greater than their initial study suggested. Also, that the benefits kicked in within just a few years. Other studies have added weight to the evidence that taking a daily low dose of aspirin significantly reduces the risk of developing cancer. Some studies even suggest that aspirin may help to treat and prevent the spread of certain cancers once they have developed. Some of these studies are cited at the end of this article.

## How does aspirin prevent cancer?

It is not clear. Aspirin may have some effect on preventing the development of cancer cells.

## So, should I take aspirin?

If you have a cardiovascular disease - generally, yes (with exceptions and cautions as described earlier).

For others, some doctors now recommend that all people aged about 45-50 should consider taking a low daily dose of aspirin for about 20-25 years. This is because of the benefits in preventing cancer in addition to preventing blood clots. When all factors are taken into consideration, people aged about 45-50 who take aspirin for 20-25 years have, on average, an overall reduction in dying at any given age by about 10%. As the risk of bleeding due to aspirin increases greatly over the age of 75, the situation should be reviewed at age 70-75. For example, many people at this age will have developed cardiovascular disease. In this situation, it is usual to continue to take aspirin. But, if you do not have a cardiovascular disease, you may be advised to stop the aspirin, as the balance of benefit to risk may then have changed.

It is also useful to remember that the overall effect of taking aspirin is based on statistics of a community of people. It is impossible to say if you as an individual are likely to benefit - just that the odds of you developing cancer go down. A useful quote is from Dr Ike Iheanacho, the editor of the Drug and Therapeutics Bulletin (a respected medical journal). He said that the reduction in risk due to aspirin would be a 'sizeable benefit' from society's point of view. But he goes on to say:

" ... let's not forget that the drug can cause major internal bleeding and this can kill. If you're going to advise people to take aspirin, you have to factor in potential harms to give them a balanced view of the potential effects of treatment."

In short, in every case, the benefit has to be balanced against the risk. Aspirin is not a total preventer of blood clots or of cancer. It simply reduces the risk, and that risk varies from person to person.

**Therefore, before you start taking aspirin on a long-term basis, you should discuss the pros and cons with your GP, taking into account your own particular circumstances**.

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## Further reading


- Clopidogrel and modified-release dipyridamole for the prevention of occlusive vascular events; NICE Technology appraisal guidance, December 2010
- Rothwell PM, Fowkes FG, Belch JF, et al; Effect of daily aspirin on long-term risk of death due to cancer: analysis of Lancet. 2011 Jan 1;377(9759):31-41. Epub 2010 Dec 6.
- Rothwell PM, Price JF, Fowkes FG, et al; Short-term effects of daily aspirin on cancer incidence, mortality, and non-vascular death: analysis of the time course of risks and benefits in 51 randomised controlled trials. Lancet. 2012 Apr 28;379(9826):1602-12. Epub 2012 Mar 21.
- Li P, Wu H, Zhang H, et al; Aspirin use after diagnosis but not prediagnosis improves established colorectal cancer survival: a meta-analysis. Gut. 2015 Sep;64(9):1419-25. doi: 10.1136/gutjnl-2014-308260. Epub 2014 Sep 19.
- Patrignani P, Patrono C; Aspirin and Cancer. J Am Coll Cardiol. 2016 Aug 30;68(9):967-76. doi: 10.1016/j.jacc.2016.05.083.
- Prasugrel with percutaneous coronary intervention for treating acute coronary syndromes, NICE Technology Appraisal Guidance, July 2014

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