Is laughter the best medicine?

Laughter really may be the best medicine, according to research presented to the American College of Cardiology. Laughing appears to boost your blood flow and researchers say it may reduce your risk of developing heart disease.[1]

But the benefits of laughing don't stop with your heart: laughing has previously been found to help fight infections, relieve hay fever, ease pain and help control diabetes.

What did this study find?

The researchers found that laughing increased blood flow by more than 20 percent - a similar effect to that of aerobic activity.[1] The positive effect of laughing lasted for 30-45 minutes.

In contrast, stress decreased the flow by about 35 percent.[1]

Almost everyone seems to benefit from having a good laugh:[1]

- 95 percent of the volunteers in the study (19 out of 20) had better blood flow after watching a comedy movie clip
- 70 percent (14 out of 20) had a worse blood flow after watching a stressful film sequence

What do these findings mean for me?

According to the researchers, regular laughter in your life could help to reduce your risk of developing heart disease. They recommend 15 minutes of laughter a day as well as regular exercise to reduce your risk of cardiovascular disease.

What is cardiovascular disease?

Cardiovascular disease is a condition in which blood vessels become damaged and narrowed by fatty deposits. This can reduce or stop the blood supply to heart muscles (causing heart disease), the brain (causing stroke) or arms and legs (causing peripheral arterial disease).

Why is laughing good for your heart?

The benefits of laughing lie in its effect on the inner lining (endothelium) of the walls of your arteries. The endothelium plays a vital role in maintaining blood flow by regulating the diameter of the blood vessels.[1]

Damage to the endothelium is one of the factors involved in cardiovascular disease.[1]

Laughing seems to make the endothelium expand; stress seems to narrow it.[1] So laughing helps keep your artery walls fit and well, helping to maintain good blood flow.

Why is blood flow important?

A fast blood flow shows that the arteries are wide and open, so the heart and the rest of the body is well supplied with blood. In contrast, a slow blood flow shows that the arteries have become narrowed and the chances of a blockage forming are increased.

Why does laughter expand blood vessels?

The researchers are not sure exactly how laughter expands the blood vessels. One theory is that the effect is a result of the movement of the diaphragm muscles as you chuckle or guffaw. Another idea is that it's caused by chemicals called endorphins being released when we laugh.[1]

How does stress make our blood flow slower?

While no-one understands how laughter makes our blood flow faster, the study's researchers may be able to explain how stress slows the flow down.

A chemical called nitric oxide helps the endothelium to expand. The researchers suggest that mental stress leads to a breakdown in nitric oxide or reduces its production, resulting in narrowing.[1]

How was the study carried out?

The study looked at how 10 healthy men and 10 healthy women responded to watching 15-minute long film clips. Their average age was 33 years, they didn't smoke and had normal blood pressure, cholesterol and blood glucose levels.[1]

They watched either a film clip that would make them laugh (such as the comedy "King Pin") or a clip that would cause stress (such as the opening of "Saving Private Ryan"). Then, more than 48 hours later, they watched a film that produced the opposite response.[1]

To stop other factors affecting the results, the volunteers ate nothing the night before viewing the films and watched them in a temperature-controlled room while lying down.[1]

Before watching the film clips, the volunteers had their arteries tested using a test called flow-mediated vasodilation. This test uses an ultrasound machine to measure how well the arteries respond to a sudden increase in blood flow.[1] This test was then repeated at regular intervals after the film had finished.

Is this the first study to suggest that laughing is good for your heart?

No. The same research team published a study in 2001 that appeared to link reduced heart disease risk with having a strong sense of humour.[2]

The researchers looked at 150 men and women who had heart disease and compared their reactions to difficult and embarrassing situations with 150 men and women who had no heart problems. They found that people with heart disease were more likely to react to stressful situations with anger or hostility and less likely to use humour to

overcome their embarrassment. They were also less likely to laugh in positive situations and reported a reduced ability to laugh in general.[1,2,3]

These findings led the researchers to believe that laughing may protect the heart. Many commentators suggested that a willingness to laugh at life's woes could help to reduce a person's risk of heart disease.[3]

However, the design of the study meant that it was not possible to say whether laughing less increased the risk of heart disease or whether people with heart problems laughed less because of their illness.[3] Because of this, the researchers carried out this new study to investigate the effects of laughter and stress on healthy people.

What are the other benefits of having a good laugh?

Various studies have suggested that a positive outlook on life and having a good laugh is associated with much more than just keeping your heart healthy.

- Laughing is thought to help you to fight off illnesses by boosting your immune system. It increases the amount of immunoglobulins, natural killer cells and T cells in the body, which fight infection and tumours.[4,5,6,7]
- Laughing reduces pain. Children watching comedy films relax more and tolerate pain more easily.[8,9] In fact, humorous videos are being used in anaesthetic rooms at Manchester Children's Hospital.[10] And an American nurse has found that telling jokes to her patients before she administers a painful treatment reduces their discomfort.[11]
- Laughing reduces allergic responses, including hay fever symptoms.[12,13,14]
- Laughing lifts your mood - even if you have to force yourself to laugh.[15]
- Laughing reduces the effect of stress by lowering stress hormone levels.[16]
- Laughing helps keeps diabetes under control. It may help to control spikes in blood sugar levels after a meal, reducing the chances of diabetic complications. In one study, people who watched a funny video during dinner had lower blood sugar levels after the meal compared to the people who watched a lecture video.[17]

Make time to laugh

The researchers suggest that we should try to laugh more. In the same way that we try to eat five portions of fruit and vegetables a day and climb the stairs instead of taking the lift, perhaps we need to make time to have a good laugh.

"We could perhaps read something humorous or watch a funny video and try to find ways to take ourselves less seriously," lead researcher Dr. Miller says. "The recommendation for a healthy heart may one day be - exercise, eat right and laugh a few times a day."[1]

Further information

American Association for Applied and Therapeutic Humour http://aath.org/

International Society for Humour Studies www.hnu.edu/ishs/

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