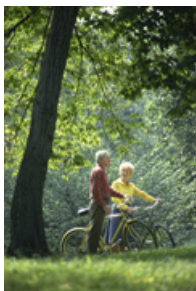


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## Heart failure: Do exercise programs help people stay fit?



Many people with heart failure avoid strenuous activities. For some people, though, the opposite makes sense: special targeted exercise programs can help to increase their physical fitness and quality of life.

**Many people with heart failure avoid strenuous activities. For some people, though, the opposite makes sense: special targeted exercise programs can help to increase their physical fitness and quality of life.**

Heart failure is a name for a group of illnesses that reduce the pumping capacity of the heart. The medical term for heart failure is cardiac insufficiency. It is often caused by a heart attack, but it can also be caused by infections that weaken the muscles in the heart.

Heart failure means the body's organs do not get enough oxygen, because the heart is not pumping enough blood around the body. This affects the muscles in particular. In severe cases, people are no longer able to get out of bed or dress themselves. In mild to moderate cases, people only notice the reduced pumping capacity when they exert themselves and get out of breath quickly, for example when walking up stairs. As a result, people with heart failure may do less physical activity. But this further reduces their physical fitness. It starts a vicious circle that can greatly reduce their independence and quality of life. As many as 2 out of every 100 middle-aged Europeans are affected by this condition (up to 2%). The number increases to between 6 and 10 out of every 100 people in the age group 65 and older (6 to 10%).

People with heart failure have often been advised to avoid strenuous physical activity out of fear that it could put too much strain on their hearts. They have also been less likely to participate in rehabilitation programs for people with heart disease.

## Research on the effects of cardio exercise programs

Researchers from the Cochrane Collaboration wanted to find out whether exercise programs are worthwhile for people with heart failure. The Cochrane Collaboration is an international network of researchers who systematically review trials that test the benefits of health care interventions. So-called randomized controlled trials are the best type of study to answer this type of question. In this kind of trial, participants volunteer to be randomly divided into different groups. One of the groups receives the treatment being tested, and the other group or groups receive a dummy treatment (placebo), no treatment, or another treatment. This approach makes it possible to find out how the treatment affects the participants' health. You can read more about why this kind of research is important here (URL: <http://www.informedhealthonline.org/index.61.en.html>).

In a previous analysis, the researchers had found that exercise programs can have physical health benefits: people who participated in exercise programs became physically fitter. They were able to move about, walk, and work better than those who had not participated in the programs.

In a more recent analysis, the researchers focused on the question of how exercise programs affect life expectancy, symptoms, hospital stays and quality of life. They found 19 trials that tested exercise programs. In some of the programs the exercises were done in special centers (for example, in hospitals), and in other programs the exercises were done both at home and in such centers. Just one trial looked at exercise programs that were solely carried out at home. Altogether, more than 3,600 people took part in the trials. It is important to note that the people in these programs all had only mild to moderate heart failure, and most of them were men. They were roughly between 40 and 70 years old on average.

The content of the exercise programs varied greatly from trial to trial: the training sessions lasted between 15 and 120 minutes, there were 2 to 7 sessions per week, and the programs lasted between 5 and 12 months. The most common exercises were walking and using either a stationary exercise bike indoors, or riding a normal bike outdoors.

## Exercise programs improve quality of life

Overall, exercise programs were not found to have an effect on life expectancy. People who participated in exercise programs neither lived longer nor shorter than those who did not. Larger and longer trials may be needed to be more certain about the possible influence of exercise programs on life expectancy. There is, however, some evidence that the people who had been in exercise programs were less likely to have to stay in the hospital because of heart problems later on.

Some of the people were asked how the exercise training had affected their quality of life. Compared to those who did not participate in exercise programs, most of those who did reported a better quality of life. There was no evidence to suggest that the exercise training was dangerous. Problems like heart attacks were rare in these trials.

The authors of the Cochrane review point out that the trials cannot provide a full picture for all people with

heart failure, because the research has focused mostly on men with mild to moderate heart failure. More trials are needed to find out whether exercise programs also have a health benefit for women, older people and people who have unstable heart conditions or more severe heart failure.

## **More recent research confirms that many people with chronic heart failure can benefit from exercise**

After the Cochrane researchers had analyzed these trials, a new large US trial was published. The trial, which involved more than 2,300 people, largely confirmed the conclusions of the Cochrane review: exercise can improve the quality of life and fitness of people who have chronic heart failure. Heart attacks, sudden chest pain (angina pectoris) or other heart problems were not more common in people who participated in exercise programs than they were in those who did not.

But one of the conclusions of the US trial was different: physical exercise was found to slightly increase the likelihood of a hospital stay. About 3% (3 out of 100) of the people who had participated in an exercise program had to go to the hospital, compared to 2% (2 out of 100) of those who had exercised on their own rather than participating in an exercise program.

Continuous support could be important to help people carry on doing their exercises regularly. If you have heart failure, you can talk to your doctor about which exercises and types of rehabilitation would be appropriate for you.

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**Glossary**

## 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 so-called “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.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.

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Flynn KE, Pina IL, Whellan DA, Lin L et al. Effects of exercise training on health status in patients with chronic heart failure: HF-ACTION randomized controlled trial. *JAMA* 2009; 310: 1451-1459. [Full text (URL: <http://jama.ama-assn.org/cgi/content/full/301/14/1451>) ]

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**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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