

Soccer is as effective as blood pressure drugs

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Regular soccer training improves cardiac function, increases exercise capacity and lowers blood pressure in men with type 2 diabetes, new study shows.

Soccer is more than just a fun ball game. It's also a very effective form of exercise.

A new study shows that soccer practice twice a week can lower the blood pressure in type 2 diabetes patients as much as blood pressure drugs can.

Soccer practice improved the functioning of the study's participants' hearts relatively quickly, says one of the two researchers behind the new study, project leader and PhD student Jakob Friis Schmidt, of Copenhagen University's Department of Nutrition, Exercise and Sports.

Many type 2 diabetes patients have a heart muscle that has become less flexible due to factors such as high blood sugar, and this is one of the earliest signs that type 2 diabetes affects heart function. This increases the risk of later developing heart disease in the form of heart failure.

"We discovered that soccer training significantly improved the flexibility of the heart and also that the cardiac muscle tissue was able to work 29 percent faster. This means that after three months of training, the heart had become 10 years 'younger'."

But it was not only the heart's flexibility that improved.

The participants also saw quick improvements in their general fitness, and they all maintained their interest in soccer training after the study had been completed.

The researchers believe that soccer training has a great potential for helping not only diabetes patients but also for improving public health.

Stamina and fitness improved after 12 weeks

The study is based on a project in which 21 men aged 37-61 participated, all of whom had type 2 diabetes.

Twelve of the 21 men were asked to play soccer twice a week, while the other nine made up the control group.

None of the 21 men made any changes to their dietary habits or the physical activities they normally engaged in. The only difference was that one of the groups had started playing soccer.

After only 12 weeks the researchers found that the training had a positive effect on the treatment group.

The effects were as follows:

- The fitness score increased by 12 percent.
- Stamina increased by 42 percent.
- Advanced ultrasound scanning of the heart also demonstrated that the heart's contraction phase was improved and that the capacity of the heart to shorten was improved by 23 percent – a research result that had not been reported with other types of physical activity.
- Sixty percent of the participants had high blood pressure before the start of the experiment and took medication to lower it. The soccer training reduced the blood pressure by 8 mmHg. This is equivalent to the effect of a hypotensive pill. Such a large difference has not previously been demonstrated in studies of physical activity.

“An improved physical fitness reduces the risk of complications in type 2 diabetes and makes it easier to cope with daily chores and maintain a physically active life,” says Schmidt’s co-author Thomas Rostgaard, a PhD student at Copenhagen University’s Department of Nutrition, Exercise and Sports.

The results came from tests such as endurance tests, measurements of oxygen uptake while exercising on a bike, blood glucose tests, blood pressure measurements and ultrasound scans of the heart.

Schmidt says that previous studies have shown that soccer differs from running and other forms of exercise not only because it’s good for the body in every conceivable way, but also due to the unique social aspects involved.

“If you want to improve your fitness rating, you should do interval training. But soccer is just as good for that purpose. If you want to burn fat, it’s a good idea to do long runs. But again soccer is just as good for that. If you want strong muscles and bones, then weight training is the way to go. But soccer is just as good there too,” he says.

“There is a great deal of intensity in soccer, but you’re playing with other people and you’re highly focused on the game. For these reasons, the participants felt that playing soccer was less hard than doing interval training.”

Soccer promotes a physically active lifestyle

According to Schmidt, soccer is a great way of getting people to maintain their motivation to lead a physically active life. For instance, the participants in the study continued their soccer training after the completion of the project, on their own initiative.

“This motivational element is what promotes public health. It’s important that people continue to be physically active throughout their lives, and soccer is great for building up social capital and motivation, which has resulted in all our participants wanting to continue with their training because it’s social and it’s fun.”

The study is published in the journal *Medicine & Science in Sports & Exercise* [10].

[Read the Danish version of this article at videnskab.dk](#) [11]

 [Soccer is not only healthy. It's also fun, which is important if we want to motivate ourselves to maintain a physically active lifestyle. \(Photo: Colourbox\)](#)

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Fact box

The participants in the study played soccer twice a week over a 24-week period, but the positive effects on heart function already appeared halfway through the period.

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Jakob Friis Schmidt

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['Soccer Training Improves Cardiac Function in Men with Type 2 Diabetes,' Medicine & Science in Sports & Exercise. DOI: doi: 10.1249/MSS.0b013e31829ab43c](#) [10]

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Dann Vinther

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