

Football training reduces the risk of disease in elderly men

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Improvements in health from football training contribute significantly to reducing the risk of developing cardiovascular diseases and diabetes, say the researchers. Credit: Mikal Schlosser.

A new scientific study shows that long-term recreational football training produces a number of marked improvements in health profile for 63-75 year old untrained men—including a reduced risk of developing cardiovascular diseases and diabetes. The research project was carried out at the Copenhagen Centre for Team Sport and Health at Copenhagen

University, and the findings have just been published in the international journal *PLOS ONE*.

The study shows that regular participation in recreational football improved the health, physical fitness and [muscle function](#) of the 63-75 year old men in the study, and significantly reduced body weight.

Both short-term and long-term effects

As the study went on over a full year, the researchers were able to examine both the immediate effects and the long-term benefits of the [training](#).

"Even after 4 months' football training, the cardiovascular fitness scores improved by 15%, interval work capacity increased by 43% and functional capacity by 30%. And after a year we also saw a 3% reduction in BMI purely from the loss of fat mass, with an increased ability to control blood sugar and an improved capacity to handle harmful oxygen radicals, which could otherwise cause increased oxidative stress in the body and have a harmful effect on many vital cell functions".

So says Thomas Rostgaard Andersen, who conducted the study as part of his recently completed PhD project at the Copenhagen Centre for Team Sport and Health at Copenhagen University's Department of Nutrition, Exercise and Sports.

"The improvements contribute significantly to reducing the risk of developing cardiovascular diseases and diabetes", he concludes.

Football preserves muscle mass

The training also had a positive effect on muscle mass.

"As we get older, we lose muscle mass, and that reduces our ability to maintain a physically active lifestyle. That is why it is important to preserve muscle mass into our later years, if we are to manage by ourselves for longer when we are old. In this study we saw how the participants reduced their body weight without losing muscle mass. This is very important for our ability to do ordinary day-to-day things, such as walking upstairs, tidying the garden and doing the shopping", explains Professor Jens Bangsbo, who was responsible for the project and heads the Copenhagen Centre for Team Sport and Health.

"Similar changes are typically observed after periods of strength training, and this underlines the fact that recreational football is an effective alternative to the training that is normally carried out to preserve [muscle mass](#) in [older people](#). And football training is also sociable and fun, which motivate and keep inactive people exercising," he says.

Everyone completed the training period, and many are still playing football today

This is best illustrated by the fact that all the test subjects completed the full 52 weeks of training. This is not often seen in this type of study. And most of the participants are still playing football together twice a week—two years after the research period finished.

"We asked some men to go out on a pitch. Then we gave them a ball—and they started playing! And the fitter they got, the better and more intensively they trained. And they are sticking at it. It is self-regulating and easily accessible. It is for everyone. And that is completely unique among team games", says Thomas Rostgaard Andersen.

"The project has important societal aspects. More accessible facilities

and recruiting older people to recreational football could help to reduce the challenges many older people face on the health and social front", concludes Jens Bangsbo.

Provided by University of Copenhagen

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