

Football for untrained 70-year-old men

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It is never too late to start playing football. Football boosts physical capacity and heart health, and minimizes the risk of falls and fractures in elderly men, who have never played football before or have not played for decades. Photo: Mikal Schlosser.

Research carried out by the Copenhagen Centre for Team Sport and Health in Denmark shows that untrained elderly men get markedly fitter and healthier as a result of playing football (soccer). After only 4 months of twice-weekly 1-hour training sessions, the men achieved marked improvements in maximum oxygen uptake, muscle function and bone mineralization.

Later today, three [scientific articles](#) will be published in the *Scandinavian Journal of Medicine & Science in Sports* describing the fitness and health effects of [football](#) training for 63-75-year-old untrained men. The Copenhagen researchers, led by Professor Peter Krstrup of the Copenhagen Centre for Team Sport and Health, University of Copenhagen, have a compelling case. Football is a fun, social and effective form of high-intensity interval training that is open to all.

Untrained elderly men can also play

"Our previous studies have shown that 70-year-old

men with lifelong participation in football possess a postural balance and rapid muscle force that is comparable to that of 30-year-old untrained men," says Krstrup. "This time we have gone one step further by evaluating the intensity of football training as well as the health and fitness effects of football for untrained elderly men with little experience of football."

"The study revealed that inactive elderly men improved their maximum oxygen uptake by 15% and their performance during interval exercise by as much as 50% by playing football for 1 hour two times per week over 4 months. Moreover, [muscle function](#) was improved by 30% and bone mineralization in the femoral neck increased by 2%," says Krstrup.

"The results provide strong evidence that football is an intense, versatile and effective form of training, including for untrained elderly men. It is definitely never too late to start playing football. Football boosts physical capacity and heart health, and minimizes the risk of falls and fractures, including in elderly men who have never played football before or have not played for decades," says Krstrup.

Sky-high intensity

"The players had heart rates that were sky high and corresponded to the values obtained during elite football games," says Associate Professor Eva Wulff Helge of the Department of Nutrition, Exercise and Sports, University of Copenhagen.

"GPS measurements and video analyses also showed that there are many fast runs, stops, turns, dribbles, passes and shots, providing strong stimuli for muscle and bone adaptations. The fast runs, intense actions and unorthodox movements may well be the cause of a large increase in [bone mineralization](#) in the femur bone and femoral neck after only 4 months and of the further 3% improvement from 4 to 12 months of training," says Helge.

An active everyday life and better health

"Our study shows that intense training such as football can change the lives of [elderly men](#)," says Krstrup.

"The remarkable improvements in aerobic fitness and muscle strength make it easier for the players to live an active life and overcome the physical challenges of everyday life such as climbing stairs, shopping, cycling and gardening. This benefits not only the players themselves, but also their families and friends," says Krstrup.

The scientific study

The researchers at the Copenhagen Centre for Team Sport and Health have conducted numerous randomized controlled training studies involving football and other team sports.

In the present study, a total of 27 untrained men aged 63 to 75 were recruited, tested and randomized into a football group, a strength training group and an inactive control group. The two [training](#) groups exercised for 1 hour twice a week for a year. A comprehensive testing battery was used at baseline, after 4 months and after 12 months. The research team, comprising 20 researchers from the Copenhagen Centre for Team Sport and Health, the University of Southern Denmark, Gentofte University Hospital and the National Research Centre for the Working Environment, was led by Professor Peter Krstrup, who has studied fitness and [health](#) effects for more than 10 years and published 55 articles in the area over the last 5 years.

More information: More information about the three new publications Schmidt et al. 2014, Helge et al. 2014 and Andersen et al. 2014: www.holdspil.ku.dk/english/new...4/granddad-football/

Provided by University of Copenhagen

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