

# Football scores a health hat-trick for 55-70-year-old women with prediabetes

August 19 2019

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Football (soccer) is indeed an effective and multifaceted type of training with a potential for simultaneous broad-spectrum improvements in cardiovascular, metabolic and musculoskeletal fitness. Credit: Bo Kousgaard, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark

Physical fitness is a strong mortality predictor and exercise training is

now considered a cornerstone in the non-pharmacological prevention and treatment of lifestyle diseases, including hypertension, type 2 diabetes and osteoporosis.

A new study from the University of Southern Denmark shows that [football](#) is a surprisingly efficient type of physical training for female prediabetes patients, with impressive effects on cardiovascular health after 16 weeks of training for 55-70-year old women with no prior football experience.

## **Broad-spectrum improvements in cardiovascular, metabolic and musculoskeletal fitness**

Considering that sporting activities are popular and that many of these imply intense training of variable forms, it is of great interest to study the effects of sports training in patients.

"More than 15 years of research on recreational football documents that it is indeed an effective and multifaceted type of training with a potential for simultaneous broad-spectrum improvements in cardiovascular, metabolic and musculoskeletal [fitness](#)," explains professor Peter Krstrup, head of the Sport and Health Sciences Research Unit, Department of Sports Science and Clinical Biomechanics at the University of Southern Denmark (SDU).

His conclusion is backed up by 3 recent meta-analyses, covering 31 scientific studies. However, only a few of these deal with the fitness and health effects of football for female patient groups.





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### **Recreational football combined with dietary guidance**

In a new study headed by professors Magni Mohr and Peter Krstrup, researchers investigated the short-term effects on cardiovascular health of football for 55-70-year-old women with prediabetes and compared the effects with age-matched men. The study was conducted on the Faroe Islands in close cooperation with the University of the Faroe Islands and included subjects recruited from a Faroese cohort from the

Department of Occupational and Public Health.

For both genders, dietary advice alone was compared to dietary advice and 1-hour football training twice a week for 16 weeks. The study results were published in *European Journal of Applied Physiology* earlier this week.

"Football is top training for cardiovascular health, and indeed also for women with prediabetes. The present results show impressive simultaneous improvements of football training and dietary advice in blood pressure, fat percentage, cholesterol and aerobic fitness for the women, providing clinically relevant enhancement of the [cardiovascular health](#) profile," says professor Peter Krstrup.

## **Fitness effect even greater for women than for men**

In general, the fitness and health effects are somewhat smaller for women participating in exercise programmes with fixed time, especially when it comes to [blood pressure](#) and fat loss. However, this was not the case in the present study.





Professor Peter Krstrup (left) and professor Magni Mohr (right) investigated the short-term effects on cardiovascular health of football for 55-70-year-old women with prediabetes and compared the effects with age-matched men. Credit: Jonas Havelund, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark

Professor Magni Mohr follows up:

"Interestingly, the exercise intensity as well as the training effects were similar in women and men, and for aerobic fitness the improvements were even greater in women. This clearly emphasizes that middle-aged and elderly women can benefit to the same degree as men, even so [women](#) with no prior experience with football."

## **Relevant exercise for people who suffer from diabetes**

This is especially relevant for patients with type 2 diabetes and individuals with prediabetes who normally suffer from multiple pathophysiological conditions.

"The results from our study confirm investigations of other patient groups and emphasize that football training is an intense, effective and versatile type of training. Football scores a true [health](#) hat-trick as [training](#) type for participants of both genders and across the lifespan," Magni Mohr concludes.

**More information:** Magni Mohr et al. Gender-dependent evaluation of football as medicine for prediabetes, *European Journal of Applied Physiology* (2019). [DOI: 10.1007/s00421-019-04188-5](https://doi.org/10.1007/s00421-019-04188-5)

Provided by University of Southern Denmark

Citation: Football scores a health hat-trick for 55-70-year-old women with prediabetes (2019, August 19) retrieved 26 April 2024 from <https://medicalxpress.com/news/2019-08-football-scores-health-hat-trick-year-old.html>

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