

New meta-analysis: Recreational football is broad-spectrum medicine

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Football is medicine for men and women with lifestyle diseases. Credit: The Danish FA

It is now well-established that physical fitness and resting heart rate are a strong mortality predictors and that exercise training is a cornerstone in the non-pharmacological prevention and treatment of lifestyle diseases including, for example, hypertension, type 2 diabetes and osteoporosis.

It is also known that endurance running improves metabolic fitness, that high-intensity interval training (HIIT) improves cardiovascular fitness and that [strength training](#) improves musculoskeletal fitness. However, so far less information has been available about the role of sports as training for patients.

In 2015 two meta-analyses highlighted that the best evidence for health effects of sports was found for [football](#) and running. The new meta-analysis being published on Friday January 26 in *British Journal of Sports Medicine (BJSM)*, the highest ranked sports medicine journal, concludes that football training is an effective and multifaceted training type with a great potential for simultaneous broad-spectrum improvements in cardiovascular, metabolic and musculoskeletal

fitness.

"After 10 years of research, the evidence is now sufficiently strong to state that football is medicine", says Peter Krstrup, Professor and Head of the Sport and Health Sciences Research Unit, Department of Sports Science and Clinical Biomechanics at the University of Southern Denmark (SDU) and continues: "Football is broad-spectrum medicine for patients with hypertension, type 2 diabetes and other lifestyle diseases".



Ten years of football research will be presented at the first international 'Football is Medicine' conference on 25-26 Jan, 2018, in Lisbon. Most of the presenters met last year at the University of Southern Denmark. Credit: Jonas Havelund, SDU.

The new BJSM meta-analysis was conducted in collaboration between associate professor Zoran Milanovic and his team at the University of Nis, Serbia, and Peter Krstrup and his team at SDU in Denmark. The facts are that 3-6 months of 1 hour football training twice a week increases maximal oxygen uptake by 3.51 mL/min/kg and jump performance by 2.3 cm and lowers fat mass by 1.72 kg, LDL cholesterol by 0.21 mmol/L and

resting heart rate by 6.0 beats/min for untrained men and women aged 18-75 years, and lowers blood pressure by 11/7 mmHg for 30-70-year-old patients with mild-to-moderate hypertension.

"The results from our meta-analysis clearly emphasize that football training is an intense, effective and versatile type of training that combines HIIT-training, endurance training and strength training", Peter Krstrup explains.

"The most prominent results are that short-term football training is as effective as drugs against high blood pressure and as effective as HIIT-training in terms of increasing aerobic fitness. Together these effects lower the risk of cardiovascular diseases by more than 50% and may considerably lower the risk of death. In addition, there are multiple positive effects on body composition and lipid profile, making football a very attractive type of broad-spectrum non-pharmacological intervention against lifestyle diseases", professor Krstrup concludes.

The type of football used in the 31 scientific studies does not look like the type of football played on TV. Peter Krstrup and his team are recommending small-sided football training rather than competitive games, as the injury risk is only 1/5 to 1/12 during [training](#) compared to games. A concept like Football Fitness, which is an evidence-based Danish concept, comprises a thorough warm-up including strength, balance and dribbling exercises, followed by drills and small-sided games, for example 5v5 on small pitches. No competitive matches are played. This is a type of football that can be played by all, regardless of age, gender, level of football experience and physical fitness. Worldwide an estimated 500 million people play football on a regular basis, of which 300 million are registered football club members.

The results from 10 years of research into the [fitness](#) and health effects of football will be presented at the 1st international "Football is Medicine" conference in Lisbon 25-26 January, 2018. The 30 presentations include recent results on the use of recreational football for 70-85-year-old women, men with prostate cancer, women after breast cancer, 50-70-year-old women with osteopenia and men with Parkinson's disease. The

conference is organised by the Portuguese FA, with the University of Southern Denmark, the Danish FA and UEFA as [partners](#). The Vice President of the Danish FA, Bent Clausen, will present the Football Fitness concept which is currently offered in 325 Danish and Faroese football clubs.

Provided by University of Southern Denmark

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