Recreational football is effective in the treatment of non-communicable diseases

Peter Krustrup,1,2 Jens Bangsbo1

A decade ago, it was established that physical activity is a cornerstone in the non-pharmacological prevention and treatment of non-communicable diseases,1 and there is increasing evidence that sports participation has the potential to improve the health of nations.2 In recent years, more than 60 scientific articles have shown that recreational football training conducted as small-sided games (3v3 to 7v7) has substantial fitness and health benefits for untrained individuals.3–8 Such easy-to-do training has resulted in reduced blood pressure and resting heart rate, reduced fat mass and lipid profile, and favoursly changed cardiac function and size, muscle mass, bone mineralisation and functional capacity. This applied for participants across the lifespan irrespective of gender, social status and prior football experience.

BEST EVIDENCE FOR FOOTBALL AND RUNNING

Among healthy individuals, the effects of recreational football training are more broad-spectred (more systems benefitted) and more pronounced than training modalities such as cycling, swimming, jogging, walking and strength training, suggesting that football may be a more powerful stimulus for health.3–7 A very recent systematic review on the health benefits of different sport disciplines for adults, published last month in BJSM, led Oja et al9 to conclude that: “Best evidence was found for football and running. These can especially improve cardiovascular and metabolic health”.9

THE POWER OF FOOTBALL FOR PATIENTS WITH NON-COMMUNICABLE DISEASES (NCDs)

It is both important and remarkable that for patients with non-communicable diseases (NCDs), such as hypertension and type 2 diabetes mellitus (T2DM), the benefits of football are even greater on key clinical measures than they are in the healthier cohort. Thus, twice-weekly football sessions over 24 weeks for men with hypertension led to a 151-to-139 mm Hg drop in systolic blood pressure and a 92-to-84 mm Hg decrease in diastolic blood pressure4 with three-quarters of the football group participants no longer hypertensive after the study. Likewise, just 12–15 weeks of football training lowered blood pressure by 12/6 and 8/7 mm Hg, respectively, for hypertensive women and men with type 2 diabetes.5 Such blood pressure reductions are more pronounced than those reported for other exercise interventions with hypertensive and patients with T2DM, and similar to or greater than the effects of medication.1

Along with marked improvements in cardiac function and cardiorespiratory fitness, the blood pressure reductions are likely to reduce patients’ high risk of cardiovascular diseases. In T2DM men, total and android fat mass was lowered by 1.7 kg and 13%, respectively, after 24 weeks of football training, and men and women aged 48–68 years with TDM2 lost 3.4 kg of fat, and achieved concomitant reductions in plasma low-density lipoprotein cholesterol and triglycerides by combining 12 weeks of football with a calorie-reduced diet.6 Moreover, the hypertensive and patients with T2DM experienced improved functional capacity, had 10–12% increases in maximum oxygen uptake and marked effects on body composition after 12–24 weeks of football training.6–8 Another prominent example of the power of football for patients is that elderly men with prostate cancer in androgen deprivation therapy had elevated muscle strength (15%), sit-to-stand performance (8%) and muscle mass (0.7 kg) after 12 weeks of training.5

INTRINSIC MOTIVATION, SOCIAL INTERACTION AND LOW PERCEIVED EXERTION

People with NCDs are often not very active and are recommended to increase

None declared.

The authors thank the team at the Copenhagen Centre for Team Sport and Health, University of Copenhagen, supported by Nordea-fonden, Denmark, as well as close collaborators in 12 countries.

Competing interests None declared.
REFERENCES

1. Pedersen BK, Saltin B. Evidence for prescribing exercise as therapy in chronic disease. *Scand J Med Sci Sports* 2006;16(Suppl 1):3–63.

2. Khan KM, Thompson AM, Blair SN, et al. Sport and exercise as contributors to the health of nations. *Lancet* 2012;380:59–64.

3. Krustrup P, Aagaard P, Nybo L, et al. Recreational football as a health promoting activity: a topical review. *Scand J Med Sci Sports* 2010;20(Suppl 1):1–13.

4. Krustrup P, Randers MB, Andersen LJ, et al. Soccer improves fitness and attenuates cardiovascular risk factors in hypertensive men. *Med Sci Sports Exerc* 2013;45:553–60.

5. Bangsbo J, Junge A, Dvorak J, et al. Executive summary: football for health—prevention and treatment of non-communicable diseases across the lifespan through football. *Scand J Med Sci Sports* 2014;24(Suppl 1):147–50.

6. Bangsbo J, Hansen PR, Dvorak J, et al. Recreational football for disease prevention and treatment in untrained men: a narrative review examining cardiovascular health, lipid profile, body composition, muscle strength and functional capacity. *Br J Sports Med* 2015;49:568–76.

7. Oja P, Titze S, Kokko S, et al. Health benefits of different sport disciplines for adults: systematic review of observational and intervention studies with meta-analysis. *Br J Sports Med* 2015;49:434–40.

8. Blatter JS, Dvorak J. Football for health—science proves that playing football on a regular basis contributes to the improvement of public health. *Scand J Med Sci Sports* 2014;24(Suppl 1):2–3.