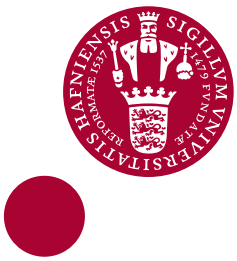

The "Football is Medicine" platform - scientific evidence, large-scale implementation of evidence-based concepts and future perspectives

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EDITORIAL

WILEY

The "Football is Medicine" platform—scientific evidence, large-scale implementation of evidence-based concepts and future perspectives

The idea that football can be used as therapy and as a high-intensity and literally breath-taking training regime goes back centuries. To take one prominent example, the French philosopher Voltaire describes in the *Book of Fate* (1747), how a patient is cured by playing with a sacred football: "… full-blown and carefully covered with the softest Leather. You must kick this Bladder, Sir, once a Day about your Hall for a whole Hour together, with all the Vigour and Activity you possibly can", "Ogul, upon making the first Experiment, was ready to expire for want of Breath", "In short, our Doctor in about 8 days Time, performed an absolute Cure. His Patient was as brisk, active and gay, as One in the Bloom of his Youth."[1] Today, Voltaire and his main character, philosopher Zadig, have been proved right: Football is indeed a breath-taking activity and it can be used as therapy. Albeit today's recommendations suggest a lower training frequency, longer training periods and encourage group-based training, and say that any football can be applied…

Today comprehensive research has shown that small-sided football is an intense, versatile combination of strength, endurance and aerobic high-intensity interval training and that twice-weekly 1-hour sessions can be utilized for the prevention, treatment or rehabilitation of non-communicable diseases, such as hypertension, type 2 diabetes, osteopenia and prostate cancer.[2-5] Likewise, various school and football club projects have shown that football has great potential to increase fitness, psycho-social well-being, motor skills, cognitive functioning, and learning.[6-8] During the last century, the scientific study of football focused almost entirely on elite football. However, as of the early 2000s investigations into the fitness and health effects of football were initiated.[2] The evidence regarding the application of football as a health-enhancing activity for the general population is currently expanding rapidly with more than 150 scientific articles published over the last 10 years in 35 peer-reviewed international journals, including three meta-analyses,[9-11] three narrative reviews,[3-5] three special issues on Football for Health[12-19] and one on football, basketball, team handball, and other team sports.[20]

The overall conclusions are summarized in the "Football is Medicine"-model, integrating sports science, sport training physiology, sports medicine, sports psychology and sports sociology results (Figure 1).[2] The three special issues on Football for Health have all been published in the *Scandinavian Journal of Medicine and Science in Sports* and they tell a unique story about the development of the research and the gradually increasing focus on football as therapy. The first was published in 2010 focusing on "Football as prevention",[12-14] the second in 2014 expanded on the work on "Football as prevention and treatment",[15-19] and the present special issue published in 2018 is entitled "Football is Medicine" and emphasizes the comprehensive results and the huge implications of using the world's most popular sport, with an estimated 500 million regular participants,[2] as a therapy.

Relying on this scientific base with contributions from more than 250 authors from 22 countries, the scientific "Football is Medicine" platform has now been established. The first organizational meeting took place in Odense, Denmark, in January 2017, with 25 international researchers present and the first "Football is Medicine" conference was held in Lisbon, Portugal, in January 2018, with 50 speakers and a total of 300 delegates, with the Portuguese FA (FPF) as the main organizers and the University of Southern Denmark (SDU), The Danish FA (DBU) and UEFA as partners. It is a pleasure to confirm that the second Football is Medicine Conference will be held on January 25-26, 2019 in Odense, Denmark, with symposia on training in the evidence-based football concepts Football Fitness, FIT FIRST and 11 for Health on January 21-24, 2019, organized by SDU with DBU, FPF, and UEFA as partners. The purposes and possibilities of the global Football is Medicine platform are multifaceted, with research quality and productivity, scientific collaboration and networking, research dissemination as well as the development of an education in evidence-based football programs as the most prominent.

The ongoing and future research into the effects of football training on human health is interesting and ambitious, with small-to-medium RCT projects on prevention and treatment of type 2 diabetes, cardiovascular disease, osteopenia, severe obesity and several types of cancer running or planned in Europe, South America, North America, Asia and Africa, and a large-scale multicentre project on Football Fitness in Europe. Pilot projects, feasibility studies, and small-scale RCT projects are also running for refugees and

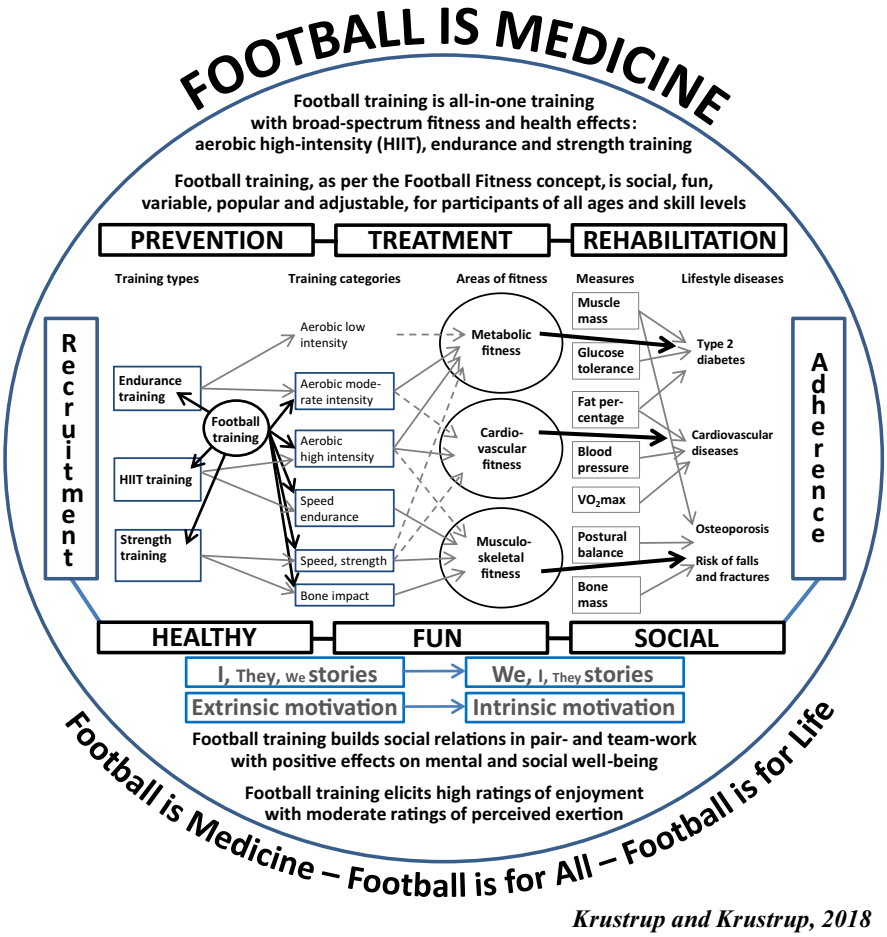

FIGURE 1 A holistic "Football is Medicine"-model, describing the training components of football training, the training-induced adaptations in fitness and health variables, the link between the training stimuli and cardiovascular, metabolic and musculo-skeletal fitness and the use of football training in the prevention, treatment and rehabilitation of non-communicable diseases, as well as the psycho-social elements of football training, organized as per the Football Fitness concept with 1-hour sessions with a proper warm-up, pair-based football exercises and 2v2-5v5 football drills with rules adapted to the participant group. This type of football training is organized so that it is for almost everybody, it is for life and results in few injuries compared to 11v11 match-play, and have positive long-term psycho-social training-induced effects and the possibility of creating adherence to an active lifestyle. Presented with permission, Krustrup and Krustrup, 2018, British Journal of Sports Medicine[2]

socially deprived groups as well as patient subsets with Parkinson's disease, dementia, psoriasis, asthma and anxiety, and it is being investigated whether Walking Football is a feasible and valid alternative to "running football" to achieve conspicuous health effects for patient groups.[21] Long-term training studies and implementation projects are also being conducted with football for men with prostate cancer and Football Fitness for young, middle-aged and elderly women.[19,22] In all of these projects it is encouraged to take a multidisciplinary or interdisciplinary perspective and to integrate expertise and research questions from sports science, sport training physiology, sports medicine, sports psychology and sports sociology.[2]

The plans for global research dissemination and implementation are equally ambitious. With regard to research dissemination, there will be a focus on research articles and special issues in high-quality peer-reviewed international journals, like the present issue, with audio-visual coverage of the main results, including these, and with evidence-based popular articles, booklets and books published for the general population as well as healthcare workers and authorities. With regard to implementation there will be emphasis on global dissemination of evidence-based concepts with football training for children (FIT FIRST[7,8] and 11 for Health[6,8]) and sedentary adults and patient groups (Football Fitness[2-5,9-22]), but also evidence-based programmes using, for example, elite football clubs to promote healthy diet and everyday life physical activity for fans (FFIT[23]/EuroFIT[24]). For such large-scale implementation plans to succeed, a close collaboration is required between important stakeholders in the scientific community, the football governing bodies, the worldwide health organizations and national authorities. We look forward to contributing to this work. Fifteen years of research

have produced strong evidence to show that football is indeed breath-taking, high-intensity, multipurpose training and is effective as physical and psycho-social therapy. In fact, football is medicine, and we are ready to act on this knowledge!

Please click on this video link to hear more about the research behind the "Football is Medicine" platform.

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CONFLICT OF INTEREST

None declared.

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