

seen in inactive patients with the metabolic syndrome who were treated with the portfolio diet. This finding could simply be a matter of interindividual variability. It also raises the possibility that exercise training can amplify the cholesterol-lowering effects of the portfolio diet. This possibility should be tested in a larger trial that includes individuals with high levels of habitual physical activity who want to avoid statin use to lower their cholesterol.

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Basketball for Health:
Should We Hop and
Shoot for a Remedy?



To the Editor: Basketball remains among the most popular team games

worldwide. Usually considered to be the second most popular sport in the world behind soccer, basketball is played by approximately 450 million registered players around the globe. Moreover, a countless number of people enjoy basketball on street corners, in parks, and in the most remote areas of the planet, playing 5 against 5, 3 on 3, and just about any other format imaginable, requiring only a hoop and a ball. Although medical aspects of college and professional basketball attracted significant scientific attention in the past, recreational basketball and its possible health-enhancing context appear to be addressed rarely so far. This is rather unexpected, as we are facing a pandemic of sedentary behavior and its health implications, and any physical activity that might be suitable for many that requires minimal resources—such as recreational basketball—is perhaps of great interest as a means for improving health of the general community.¹

Approximately 40 years ago, Dr Howard Hartley, from Brigham and Women's Hospital in Boston, was arguably the first who enlisted basketball among helpful activities in the primary and secondary prevention of atherosclerotic coronary artery disease.² In his review paper published in *Cardiovascular Clinics*, he noted that regular engagement in basketball (or other strenuous sports that accumulate 2000 or more kcal per week) is associated with lowered risk of coronary disease in apparently normal populations. However, aside from this pioneering commentary, very few interventional studies actually evaluated beneficial effects of basketball exercise on general health. For instance, basketball exercise improved bone mineral density significantly (for 1.5% on average) in collegiate women who experienced 16 weeks of programmed exercise (along

with calcium supplementation), compared with other sports (including soccer and cross-country and indoor track).³ A recent paper that evaluated the impact of participation in sports on weight loss and symptoms of schizophrenia demonstrated a significant reduction in body mass index (0.7 kg/m²) and a reduction in the Positive and Negative Symptoms score (for 2.4 points) following 12 weeks of basketball.⁴ A basketball exercise program conducted 3 times per week (70 minutes per session) for 8 weeks decreased both systolic and diastolic blood pressure and significantly reduced waist circumference in young men.⁵ In the most comprehensive study so far, Randers and coworkers⁶ evaluated whether street basketball (3 on 3) could improve fitness and health profiles of untrained men after 3 months of supervised exercise. Among other results, basketball practice—3 times per week, 75 minutes per session—significantly increased bone mineral density (+0.021 g/cm²), and mean arterial pressure (−5.6 mm Hg) and body fat percentage (−1.6%) were lowered at 3-month follow-up. Although these studies were typically low powered and evaluated apparently healthy adults, it seems that basketball shows several favorable effects on general well being, including cardiometabolic and bone health.

Basketball-specific movements cause resting heart rates to rise to levels needed to improve cardiorespiratory fitness; higher values are strongly associated with reduced risk of mortality from cardiometabolic diseases.⁷ Also, repeated jumps during basketball appear to increase bone mineral density, perhaps advancing recreational basketball as a preferable exercise intervention for the prevention and treatment of osteoporosis. As a fundamentally

team sport, basketball provides an opportunity for social contact among participants that has been shown to motivate inactive people to get involved in regular exercise.⁸ Equipment and facility needs for basketball are minimal; it appears that better accessibility of sports facilities—that is, short distance from home to basketball court—has a positive effect on individual participation in physical activity.⁹ Finally, basketball may attract those for whom other types of physical activities do not appeal. However, recreational basketball may have several obstacles and hazards. Basketball is a fast-moving sport with frequent and forceful body contact, so injuries can occur. Although no epidemiological studies are available on risk of injury in recreational basketball *per se*, basketball was the most frequently mentioned sports and recreation-related activity when the injury episode occurred in the United States National Health Interview Survey,¹⁰ with a rate of approximately 4 injury events per 1000 population. Injuries in basketball are usually minor—mostly sprains and strains—and more severe traumata occur less frequently. This emphasizes an imperative need for proper prevention of injury in recreational basketball, from ensuring appropriate equipment and safe environment to maintaining optimal fitness and taking time to warmup. Another possible drawback of recreational basketball is a higher amount of static work, which may lead to less advantageous increase in cardiorespiratory fitness and consequent lack of advancement in health profiles compared with other types of activities such as running or cycling.⁹

To sum up, although usually perceived as a media-attractive game of top athletic stars, basketball as a recreational exercise seems to share many affirmative attributes

with typical health-enhancing physical activities. Boosting cardiometabolic health and strengthening bone structure might be among the most promising benefits of playing leisure-time basketball, while controlling for risk of injury. This rather unconventional aspect of basketball has been recently recognized by the US National Basketball Association and USA Basketball; both organizations have developed age-specific guidelines for basketball participation (<https://youthguidelines.nba.com>) intended to promote a healthy and positive basketball experience. Nevertheless, further studies are highly warranted to address many open questions on the basketball-for-health concept, including compliance with recreational basketball and the optimal dosage and duration of the intervention, along with long-term health outcomes, both beneficial and detrimental.

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Changes in Physical Activity Behavior and Risk of Falls Over 8 Years' Follow-Up: English Longitudinal Study of Aging



To the Editor: Data suggest that population levels of physical activity (PA) are low.¹ High levels of PA across the life span and in later life have been shown to be associated with greater life expectancy.²⁻⁴ A contributing component to greater life expectancy in the physically active may be due to a reduction in falls.

Falls are the major cause of injury-related fatalities in the elderly