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DO TENNIS PLAYERS LIVE LONGER? THE POSITIVE IMPACT OF TENNIS ON HEALTH

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ABSTRACT

Introduction: It is well known that physical activity has a positive impact on health. It is important to note that the more time spent active, the lower the risk of all-cause mortality will be. Tennis is one of the world's most popular sports and has numerous health benefits, including the potential to increase lifespan. Its stand-out feature is its versatility of movement, with the potential to lead to longevity.
Objective: Our aim is to demonstrate the connection between the longevity of tennis players and the many health benefits of playing this sport, and to promote physical activity in general.
Material and methods: The study is founded on a multitude of analyses from 1980 to 2024, which were searched for on PubMed and Google Scholar. It is also supplemented with the most recent guidelines and the researchers' personal insights.
Results: Tennis players seem to have the longest life expectancy of all athletes. This dependence is complex and multifactorial, but playing tennis certainly helps to avoid cardiovascular risk factors and improve quality of life and life expectancy. It prevents obesity and other components of metabolic syndrome, as well as osteoporosis. It also improves mental health, helping players to cope with stress.
Conclusion: Tennis is definitely beneficial for physical and mental well-being. Playing this sport can help maintain good lifelong health and lead to longevity, so it is important to promote raquet sports.

KEYWORDS

Tennis, Raquet Sports, Longevity, Health

CITATION

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Introduction

Tennis is a very popular sport around the world, with the majority of players continuing to play throughout their lives. It stands out due to its versatility, the involvement of multiple muscle groups and the variety of movement patterns involved in this interval training.

According to data from the International Tennis Federation, it is the most universal sport, with more than 105 million players worldwide and this number is still growing.

It is well known that physical activity has a positive impact on health. According to the latest WHO recommendations, adults should engage in 150–300 minutes of moderate-intensity aerobic physical activity per week to achieve significant health benefits. Many people don't move enough, with alarming estimates suggesting that 31% of adults worldwide are categorised as physically inactive [1]. Regular physical activity helps to prevent many non-infectious diseases, such as type 2 diabetes, cardiovascular disease, obesity, osteoporosis and certain types of cancer. It also improves mental health, preventing cognitive impairment and reducing symptoms of depression and anxiety.

It is important to promote sport in general, and to encourage people to recognise that any physical activity is better than none. It has been documented that raquet sports such as tennis are conected with similar health benefits, but moreover a greater decline in mortality than other sports.

Aim of the work

The aim of this study is to expand on the health benefits of playing tennis, which prevent many diseases and lead to an increased lifespan.

Materials and methods

The analysis is based on numerous peer-reviewed studies from 1980 to 2024, and is enriched with the latest recommendations and the authors' own observations. Information was obtained from PubMed and Google Scholar using the search terms 'tennis benefits', 'tennis health' and 'tennis longevity', which returned 2,927 results.

Results

It is generally known and proven that physical activity improves quality of life and life expectancy [2, 3, 4]. An active lifestyle is correlated with health benefits, and the more time spent active, the lower the risk of all-cause mortality. Various studies are examining how participating in different sports can improve life expectancy.

The risk of all-cause mortality can be reduced by doing cardiorespiratory fitness [5].

Paffenbarger et al. analysed how changes in physical activity levels are connected to mortality rates among men. A study revealed that starting a moderately vigorous sports activity and avoiding obesity separately led to lower rates of death from all causes and from coronary heart disease among middle-aged and older men [6].

This shows that physical activity can increase lifespan by preventing cardiovascular risk factors.

It has been demonstrated that racket sports are associated with a greater longevity.

A study by Altulea et al. found that racquet sports such as tennis and badminton were consistently associated with a longer lifespan in both male and female athletes. The study showed that males had an increased lifespan of up to 5.7 years and females of up to 2.8 years [2].

A cohort study by Oja et al., analysing a group of more than 80,000 Scottish and British adults who played racket sports, showed a significant 47% reduction in all-cause mortality and a 59% reduction in cardiovascular disease (CVD) mortality [7].

A prospective population study of over 8,000 participants, who were observed for 25 years, found that tennis players had the longest life expectancy (9.7 years), followed by badminton players (6.2 years), compared to the sedentary control group [8].

Discussion

There are numerous 3ractici connections with tennis and longevity. Playing tennis leads to prevention of cardiovascular risk factors such as obesity, hyperlipidaemia, hypertension, diabetes mellitus. It is crucial because cardiovascular diseases are the leading cause of death in European countries.

The research by Lavie et al. claims that being unfit carries a greater risk than any other CVD risk factor [3]. The reduction in the risk of death from cardiovascular causes is achieved by tennis in two ways: through the prevention of risk factors and through the maintenance of physical fitness.

Schneider and Greenberg demonstrated that tennis players, as well as runners, joggers and fast walkers, were less likely to be obese, consume stimulants or drive without seatbelts than those 3racticing other sports [9].

Hyperlipidaemia and obesity

A notable difference in body composition was identified by Swank et al., who discovered that elite male veteran tennis players had considerably less fat than an age-matched active control group. On average, these players were 3% leaner than moderately active controls who did not play tennis [10].

The average body fat percentage for tennis players is also below average, as proven by Vodak et al., who found values of 16.3% and 20.3% for men and women, respectively [11].

Hyperlipidaemia is an important predictor of coronary heart disease. In a cross-sectional study, Vodak et al. found that 25 men and 25 women (mean age 42 and 39 years, respectively) who regularly played tennis had similar total cholesterol and LDL-cholesterol concentrations, as well as significantly lower triglyceride and VLDL-cholesterol concentrations, compared to a sedentary group matched for age, sex and education. The mean plasma high-density lipoprotein (HDL) cholesterol concentration was significantly higher in the tennis players than in the sedentary subjects [12].

Hypertension

Regular physical activity increases aerobic capacity and reduces resting heart rate and blood pressure responses. It has long been established that trained individuals have a slower resting heart rate than untrained people of the same age and sex. Vodak et al. demonstrated that the mean resting heart rate of tennis players is approximately 10 beats per minute slower than that of middle-aged people who do little or no regular strenuous exercise. None of the 50 tennis players had a resting systolic pressure above 140 mmHg or a resting diastolic pressure above 90 mmHg and resting blood pressures were average 117/75 for male players and 107/68 mmHg for the females players taking part in this study. It is a much lower pressure value than almost 1700 randomly selected adults from USA, but this cannot prove that regular tennis excercise lowers blood pressure [11]. Tennis helps to maintain normal blood pressure but cause of that is multifactorial taking into consideration that tennis players usually have lower body weight and balanced diet especially differences in dietary sodium intake. The response in blood pressure when playing tennis can be compared to that during an acute bout of moderate-intensity dynamic exercise, but longitudinal studies are still needed to investigate the long-term effects of tennis on blood pressure.

Diabetes

Regular physical activity is commonly used as a therapeutic intervention with type 2 diabetes and the metabolic syndrome. Tennis causes a lower glucose concentration during exercise, which helps the body cope with stress. Nessler conducted a longitudinal study of 12 patients with type 2 diabetes. The mean glucose concentration measured before and after the training session decreased from 188.0 mg/dL to 156.7 mg/dL [13].

Osteoporosis and muscoskeletal function

One of the risk factors for osteoporosis is having a lower than average peak bone mass. For this reason, it is especially important for underweight women of perimenopausal and postmenopausal age, who are most likely to develop the disease, to maintain regular activity in order to slow down degenerative changes in the musculoskeletal system and preserve joint mobility [14]. The American College of Sports Medicine (ACSM) recommends 30 to 60 minutes of weight-bearing endurance activities, such as tennis, at least three times a week to preserve bone health in adulthood [15].

Tennis helps to improve reaction speed, which can be useful in preventing dangerous falls and injuries. Osteoporosis, characterised by low bone mineral density, carries with it an elevated risk of fractures and a significant potential for morbidity.

It has been shown that the dominant (playing) arm of tennis players has a higher bone mineral content (BMC) and bone density (BMD) than the non-dominant arm. An analysis of twenty tennis players by Ducher et al. found that their dominant radius had a higher BMC and a slight improvement in volumetric BMD, which increases bone strength [16]. Another study by Calbet et al. demonstrates that tennis players have increased BMD in the lumbar spine and femoral neck [17]. Many studies have proven that playing tennis is beneficial for bone health, particularly in bones such as the humerus of the dominant arm, the lumbar spine and the femoral neck, for both sexes and across the age spectrum [18]. It is also important to note that, despite reduced training, the exercise-induced bone gain is maintained regardless of the starting age or amount of exercise - induced bone gain, especially if you start playing a sport at a young age, as demonstrated in the 5-year follow-up study by Kontulainen et al. [19].

Due to its nature, tennis combines aerobic and resistance exercise, helping to build musculoskeletal (MSK) strength. Jackson et al. analysed 43 tennis players and compared them with 47 healthy, active non-players of the same age. They found that the group of players displayed significantly enhanced MSK function [1]. Laforest et al. demonstrates not only that tennis players have greater strength, but also that their muscles are more resilient to fatigue than those of their inactive counterparts [20].

Psychosocial benefits

It is well known that physical activity can reduce stress, depressive symptoms and anxiety disorders [21, 3]. Tennis can benefit social health, personal development, mood regulation and intrinsic motivation as well as self-confidence. As it requires a partner, group sports provide more motivation to participate and help build relationships, unlike individual sports. Research proves improved mental health of tennis players across the lifespan compared to less active controls [22]. Tennis also develops hand-eye coordination and balance, and stimulates the brain, improving cognitive function and preventing cognitive decline [23].

Limitations

The limitation of analysing the health benefits of tennis is that tennis players generally have healthier lifestyles and often have a higher socioeconomic status. Therefore, it is difficult to determine whether the longevity of tennis players is a result of playing this discipline itself or the healthy habits of these active individuals.

The conclusions presented in this study are usually based on observational research rather than controlled experimental design. There is also a lack of long-term research involving large patient populations.

Despite these limitations, the positive impact of playing tennis on health is undeniable. It reduces cardiovascular morbidity and mortality, improves musculoskeletal function, and helps maintain a fit body and good mental health. Therefore, it is certainly worth exercising.

Conclusions and summary

Tennis may contribute to longevity thanks to its many positive health benefits. It requires complex movements that help to achieve a more favourable lipid profile, avoid obesity, hypertension and diabetes, and reduce these cardiovascular risk factors. It also enhances musculoskeletal strength, preventing osteoporosis, and improves general fitness levels. As well as these physical benefits, tennis can help to cope with symptoms of stress, anxiety or depression, thereby improving the mental health of players. It is hard to find another sport with such a wide range of health benefits, so it is definitely worth playing to improve and extend the quality of life.

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