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Physical Activity as the formula for longevity and healthy ageing in Indian population: A short review

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Abstract

Ageing is a pathophysiological process that brings along a whole host of health conditions like cardiovascular disease, diabetes etc. With an increase in the population over 60, India is at a risk of having a large population with age related health issues. Different types of physical activity and exercise programs have been shown to benefit older adults in lowering the risk of chronic disorders and improve their quality of life. Both aerobic and strength training interventions have their own individual positive effects on the health outcomes, and combining both the approaches can be the key to developing optimum training regimen for elderly population for best possible outcomes.

Keywords: Ageing; Physical Activity; Resistance Training; Aerobic Training

1. Introduction

Non-communicable diseases and lifestyle diseases have become a major cause of mortality among the populations of various developed and developing countries. With advancements in technology for food processing and growth, and ease of accessibility from the comfort of their homes, people are becoming highly susceptible to such diseases. These advancements in technology have improved the life expectancy, thus leading to increase in the proportion of elderly population in developing countries like India. Statistics suggest that India has the second largest older population in the world, aged 60 or above [1]. Ageing is an irreversible pathophysiological process that leads to decrease in tissue functions and heightened risk of cardiometabolic and musculoskeletal disorders [2]. Most common risk factors for cardiovascular and metabolic diseases include high blood pressure, obesity, smoking, uncontrolled eating habits and most importantly physical inactivity [3].

Consistent physical activity has been shown to reduce the risk of many of these conditions, and also help improve conditions like type 2 Diabetes, Dyslipidemia, obesity and coronary artery disease [4]. Some recent studies have also shown positive effects of exercise and physical activity in reducing the risk of certain types of cancer [5]. Risk of mortality also reduces significantly in individuals who are physically active and fit in comparison to physically inactive and unfit individuals [6]. World Health Organization guidelines recommend at least 75 minutes if high intensity exercise or 150 minutes of moderate intensity exercise per week for older adults above 65 years of age [7].

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2. Benefits of Regular Physical Activity

2.1. Strength Training

One of the most well-known benefits of regular physical activity, more specifically regular resistance training, is improved muscle mass. Progressive loss of muscle mass, known as Sarcopenia is one of the most prevalent conditions with ageing [8]. In a healthy adult, skeletal muscle constitutes approximately 40% of total body mass [9]. Muscle has multiple functions, including maintaining posture, locomotion and breathing. It also acts as a storage for nutrients [10]. Strength training is a type of physical exercise that is performed by contracting skeletal muscle fibers to generate work against a given weight or external force [11]. Different forms of resistance training have been suggested as effective methods for enhancing body composition, muscle strength, power, and overall physical function in older adults [12]. With regards to regulating metabolic health, often cardiovascular exercise training is considered as the optimum intervention for improving glucose tolerance; however, evidence supports the role of resistance training in improving metabolic conditioning [13].

2.2. Aerobic Training

Current guidelines for exercise training in older adults recommend both resistance training and aerobic training. Research supports the positive effect of aerobic training in improving cardiovascular health in both healthy older adults as well as individuals suffering from chronic conditions [14]. It has been shown that endurance exercise can reduce the loss of strength, mobility and endurance induced due to inactivity, and can be essential for preserving the ability to perform day-to-day activities without difficulty [15]. A study by Murias et al. found that high-intensity endurance training improved maximal aerobic capacity in older men and women [16].

2.3. Combination Training

While both aerobic exercises and resistance training both have been shown to have important health benefits for older adults. A mixed training comprising both the modalities can provide with beneficial effects of both types of exercises. A study by Lima et al. shows that a combination exercise program helped improve hypertension, body mass index and waist circumference in older adults with high blood pressure [17]. Older adults with obesity have been shown to benefit more from exercise program comprising both aerobic and strength training in comparison to any of these modes being done alone [18]. Evidence from multiple studies demonstrates that a mixed training protocol of resistance-aerobic training twice a week is effective in maintaining body composition in older adults [19].

3. Conclusion

In summary, research and current evidence re-iterates the emphasis on regular physical activity to improve quality of life and disease prevention in older populations. While both aerobic training and resistance exercise have their own established positive effects, an amalgamation of both has also been equally effective. Thus, in order to improve the health of older adults, it is imperative to introduce them to regular physical activity in a planned manner.

Compliance with ethical standards

Disclosure of conflict of interest

The Author declares no conflict of interest.

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