



Nutrition and Muscle Health in Elderly Persons with Type 2 Diabetes

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EDITORIAL

The increasing ageing of the population and the growth in human life expectancy at birth are major socioeconomic phenomena of our day. These improvements will have a huge impact on public health. It is vital to design lifestyle interventions in order to promote healthy ageing and enhance the number of years spent without disability. Over the last few years, a considerable body of evidence has accumulated demonstrating the critical importance of nutrition in skeletal muscle health. In reality, malnutrition is linked to a number of negative outcomes in older people, including the burden of chronic disease, frailty, and mortality. Insulin insufficiency causes a large increase in catabolism, particularly in skeletal muscle, which appears to be one of the repercussions of type 1 diabetes on protein metabolism. The impact of type 2 diabetes in protein metabolism, on the other hand, is less clear, as previous research findings have been inconsistent. Only a few researches have looked at how type 2 diabetes affects people's skeletal muscle mass.

Endurance exercise training has been demonstrated to be useful for diabetes prevention and treatment in epidemiological and intervention trials. On the other hand, little research has been done on the effects of resistance exercise on diabetes treatment. A resistance training strategy based on moderate-intensity and high-volume exercises was used in some of these studies. This type of exercise might contain a lot of aerobic exertion, which can be difficult for sedentary older people to manage. High-intensity, low-volume resistance training, on the other hand, may be a more tolerable workout that promotes muscle growth while also increasing glucose uptake. As a result, the purpose of this study was to explore if high-intensity, low-volume progressive resistance training (PRT) can improve glycemic control and other metabolic abnormalities in a group of Latino older people who had poor glycemic control and had never exercised before.

Weak muscle strength, but not muscle mass, is linked to poor physical function in older persons. Up to 25 years later, muscle strength testing in middle-aged or older persons is significantly predictive of functional limitations and disability. On the other hand, the effects of diabetes on muscle strength and quality have never been investigated in a population-based study. Because most people with diabetes are obese, have more muscle mass, and have

a higher total body fat mass, comparing their muscle strength to those who do not have diabetes may be misleading. Thanks to the development of body composition analysis, it is now possible to precisely quantify regional muscle mass and quantitatively assess in vivo skeletal muscle quality, defined as maximal voluntary contractile force or torque per unit regional muscle mass of the given body compartment [1-5].

Fiber intake appeared to be advantageous among older men and women who were part of the NU-AGE research, a multi-centre study that looked at the drivers of healthy ageing in five European countries. Indeed, the management of protein and fibre consumption may help to form a gut microbiota profile that influences sarcopenia and obesity metabolic pathways. In Korean men and women, a dietary pattern focused on white rice, fish, and seaweeds was linked to a reduced prevalence of low muscle mass, whereas a larger consumption of condiments, vegetables, and meats was linked to a higher prevalence of low muscle mass in men. Similarly, a complex of leucine-enriched protein, calcium, and vitamin D increased muscle mass in a group of Korean healthy people aged 50 to 64. The vitamin D pathway and the vitamin D receptor gene, in particular, appeared to be responsible with varying degrees of fragility, particularly in women in an Italian cohort of elderly people.

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