

Whey Protein Isolate May Favorable Alter Cardiovascular Function in Older Adults

Based on research into the various paths the Covid-19 disease can track in the human body, it's apparent that the entire body – from the inflammation in the brain to swelling (redness) in the toes – can be affected.

It's also recognized that people over the age of 65 – especially those with comorbidities, such as hypertension, diabetes, cardiovascular, liver, and kidney disease, are at greater risk to complications, if the disease gains a foothold in the lungs.

With advanced age, there is also an inherent risk, without early lifestyle intervention, to vascular dysfunction – specifically arterial stiffness. In essence, the arteries become stiffer, which involves structural and functional changes - leading to cardiovascular and cerebrovascular disease.

Stiff arteries can lead to buffering changes in large, central arteries and increases in blood pressure, and blood flow pulsatility, comment researchers from the Human Performance Laboratory at Syracuse University in New York, who published - Effects of Whey Protein Supplementation on Aortic Stiffness, Cerebral Blood Flow, and Cognitive Function in Community-Dwelling Older Adults: Findings from the Anchors A-Whey Clinical Trial - in the April issue of the journal *Nutrients*.

“Arterial stiffness and subsequent increases in central hemodynamic pulsatility,” say the study authors, “are associated with several pathologies of aging including hypertension, left ventricular hypertrophy and heart failure, renal dysfunction, and retinal damage. Moreover, increased arterial stiffness and central hemodynamic pulsatility are independent predictors of cardiovascular and cerebrovascular events and mortality.”

Sciencedirect.com says, “the arterial pulse consists of three components: pressure, vessel diameter, and blood velocity waves. As the pulse wave travels downstream in the vascular tree, the pressure wave moves faster than the blood velocity and diameter pulse. The stiffer the vessel, the faster the pressure wave travels.”

These researchers point out that life extension is an important health goal. Independent living and functioning are of equal importance. That requires interventions – like functional fitness and eating strategies – to improve cognition with age.

“The brain is a high flow target organ that is particularly sensitive to excessive hemodynamic pulsatility, with central hemodynamic pulsatility potentially infiltrating and damaging the delicate cerebral microvasculature”.

According to the Syracuse researchers, numerous studies note relationships between central artery stiffness, pulsatile hemodynamics, cerebrovascular pulsatility, and cognitive function. “Arterial stiffness and cerebral pulsatility also predict cognitive decline with advancing age and incident dementia.”

The Syracuse study involved a 12-week, randomized controlled trial designed to examine the effect of whey protein on large artery stiffness, cerebrovascular responses to cognitive activity and cognitive function in older adults.

Ninety-nine older adults between 61-73 years of age were recruited, of which 45% were female. Participants were randomly assigned to consume 50 grams per day of whey protein isolate (WPI) - 25 grams twice daily - or a iso-carbohydrate control.

Prior to the study, there was an initial screening of the participants: a health history questionnaire, visual acuity and color-blindness tests, height, weight, and waist circumference, depressive symptoms and global cognitive function assessment, urinalysis, fasting glucose and lipid levels, physical activity assessment, blood pressure and aortic stiffness assessment, carotid blood flow and stiffness – along with an assessment of cerebral blood flow velocity. These measurements were also completed following the 12-week intervention.

It was determined that, “compared to 12 weeks of CHO supplementation, WPI supplementation resulted in modest reductions in aortic stiffness and central hemodynamic load (assessed as the product of aortic systolic pressure and heart rate). WPI had no effect on carotid vascular properties, cerebrovascular response to cognitive activity, and limited effects on cognitive function.”

In essence, “compared to CHO supplementation, WPI may favorably alter cardiovascular function in older adults, but does not have a substantial impact on cerebrovascular or neurocognitive function.”