

Protein absorption and satiety in older individuals

S. Soenen, University of Adelaide, Level 5 Adelaide Health and Medical Sciences Building, North Tce, Adelaide, SA 5005, Australia.

Our society is ageing and many older people are malnourished, which leads to frailty, reductions in quality of life, and substantial increases in health care utilisation. Older people have higher ideal body weights (as determined by association with maximum life expectancy) and substantially more fat and less muscle tissue than younger adults. Skeletal muscle plays a number of important metabolic roles, for example in the regulation of glycaemia, and therefore the loss of muscle is associated with adverse effects on long-term metabolic health. The age-related loss of skeletal muscle mass is facilitated by a sedentary lifestyle and a less than optimal diet. As such a growing awareness of the prevalence and adverse effects muscle loss that occurs during ageing has led to the development of nutritional strategies designed specifically to preserve and/or restore skeletal muscle, including protein supplementation. However, despite the well-recognised major adverse impact of loss of skeletal mass on the health of the elderly, few studies of such supplements have involved older people, arguably those most at risk. Older people are less hungry and eat substantially less than younger adults, and have reduced responses to influences that suppress or stimulate appetite compared to younger people. We have recently undertaken several acute studies in older compared to younger adults to determine the comparative effects of whey protein, administered orally and intraduodenally (bypassing 'orosensory' and 'intra-gastric' factors) on perceptions of appetite energy intake and underlying gastrointestinal mechanisms, including gastric emptying, gut hormones and motility. These studies have produced clear-cut and exciting results - whey protein ingestion is significantly less suppressive of feeding behaviour in older than younger adults. The finding of an age-related reduction in the satiating effects of protein is important, as it may be possible to give enough protein to older people to preserve or increase muscle mass and function without suppressing energy intake.