

### ***3B-104: The role of pork in improving muscle mass, body strength and cognitive function in older people***

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#### **Aims and Objectives**

This study aimed to investigate whether a diet in which pork is provided as the main protein source in meals four times a week for 12 weeks resulted in improved muscle mass, body strength and cognitive function in community-living older adults. Cross sectional analyses were also conducted at baseline to investigate the association between dietary intake specifically protein and thiamin, with cognitive functioning and to assess associations between age, body composition, upper (hand grip strength) and lower body strength (sit-to-stand test, get up and go test), functional exercise performance (6-minute walk test) and nutritional status. Three focus groups were conducted with 18 older adults in order to gather information on factors affecting dietary habits and particularly inclusion of pork in their diets.

#### **Key Findings**

No significant association was found between protein or thiamin and the tested domains of cognition. Associations were found between vitamin D intake and the Letter Fluency Test and Rey-Auditory Verbal Learning Test (RAVLT), and between both carbohydrate and iron intake and the Geriatric Depression scale. Weight was inversely associated with performance in the sit-to-stand test and body mass index was inversely associated with performance in the 6 minute walk test. Left hand grip strength declined with age in both males and females. Energy intake was positively associated with both right and left hand grip strength. No differences were found between pork and chicken groups for any of the outcome variables, although participants in the chicken group had significantly improved measures on the RAVLT test (verbal learning and memory) at 6 weeks.

Focus groups indicated that quality and price were important considerations for food choices and a preference for Australian sourced foods. Participants expressed a strong desire to remain independent and undertook strategies to positively influence their health status, including making healthy dietary choices.

In a sample of generally healthy, well-nourished older adults, no association was shown in a cross sectional analysis between protein or thiamin intake and the tested components of cognition. A slight increase in thiamin intake was achieved in participants by the provision of four pork meals a week, but this did not result in improvements in cognitive function, nor measures of strength or physical function. Merely changing the type of dietary protein provided by meat did not affect measures of physical and cognitive function.

#### **Application to Industry**

The findings of this pilot research provide evidence regarding the positioning of pork and pork products in food-based dietary advice to support healthy ageing. Regulatory agencies require scientific evidence of the health benefits of foods to underpin commercial marketing. This information may add a new marketing opportunity for the pork industry that will address consumer demands for foods that target health and wellbeing over the lifespan. Pork has largely been overlooked in favour of other protein sources, such as red meat and poultry, in nutritional interventions that assess the role of foods in the prevention of loss of muscle mass and maintenance of cognitive function in older adults.

The inclusion of pork as a primary source of protein provides novel information on the benefits of regular inclusion in the diets of older people, an increasingly large sector of the population of Australia. The project methodology has been refined and could be applied to a longer study. Qualitative data has provided insights for the pork industry into consumer food-related behaviour in older adults who represent a key market for expansion of pork meat sales given the shifting demographic.