

HUMAN NUTRITION

Title: Influence of fresh and lean pork consumption on diet quality and functional limitations among American older adults, 1999-2016 –
NPB #18-002

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Scientific Abstract:

Introduction: Pork consumption, in particular fresh/lean pork consumption, provides protein and other essential micronutrients that older adults need daily and may hold the potential to prevent functional limitations resulting from sub-optimal nutrition.

Objectives: The two objectives of the project are to (1) assess the influence of fresh and lean pork consumption on diet quality among U.S. adults 18 years and older and (2) functional limitations in U.S. older adults 65 years and above, using data from the National Health and Nutrition Examination Survey (NHANES) 2005–2016 waves.

Materials & Methods: Nationally-representative sample from the National Health and Nutrition Examination Survey (NHANES) 2005–2016 waves were analyzed. First-difference estimator addressed confounding bias from time-invariant unobservables (e.g., eating habits, taste preferences) by using within-individual variations in pork consumption between 2 nonconsecutive 24-hour dietary recalls. Nineteen validated questions assessed five functional limitation domains: activities of daily living (ADLs), instrumental activities of daily living (IADLs), leisure and social activities (LSAs), lower extremity mobility (LEM), and general physical activities (GPAs). Logistic regressions were performed to examine pork, fresh pork, and fresh lean pork intake in relation to functional limitations among NHANES older adults.

Results: Approximately 19.4%, 16.5%, and 16.1% of U.S. adults 18 years and older consumed pork, fresh pork, and fresh lean pork, respectively. Prevalence of pork, fresh pork, and fresh lean pork consumption differed by sex, race/ethnicity, and education level. Increased fresh and lean pork rather than total pork intake was related to

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marginally improved nutritional intakes (i.e., protein, magnesium, potassium, selenium, zinc, phosphorus, and vitamins B₁, B₂, B₃, and B₆) with lesser increases in daily total energy, saturated fat, and sodium intakes. Pork, fresh pork, and fresh lean pork consumption was not found to be associated with the Healthy Eating Index (HEI)-2015 score. Approximately 21%, 18%, and 16% of older adults 65 years and above consumed pork, fresh pork, and fresh lean pork, respectively. An increase in pork consumption by one ounce-equivalent/day was associated with a reduced odds of ADLs by 12%, IADLs by 10%, and any functional limitation by 7%. An increase in fresh pork consumption by one ounce-equivalent/day was associated with a reduced odds of ADLs by 13%, IADLs by 10%, GPAs by 8%, and any functional limitation by 8%. Similar effects were found for fresh lean pork consumption on ADLs, IADLs, GPAs, and any functional limitation.

Discussion: U.S. adult pork consumers may increase their share of fresh and fresh lean pork over total pork consumption in an effort to increase their daily intakes of beneficial nutrients while minimizing intakes of energy, saturated fat, and sodium. This study found some preliminary evidence linking fresh/lean pork consumption to a reduced risk of functional limitations. Future studies with longitudinal/experimental designs are warranted to examine the influence of fresh/lean pork consumption on functional limitations.