

HUMAN NUTRITION

Title: Pork Consumption in Relation to Body Weight and Composition: A Systematic Review and Meta-analysis; **NPB #19-151** revised

(Note: The original project title was “Pork Consumption and Cognitive Function in Children and Adolescents: A Systematic Review”. Due to feasibility issue and upon approval by the NPB research review board, the topic has been formally replaced by the current one.)

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Institution: N/A as Ruopeng An, as an independent consultant, serves as the awardee.

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Scientific Abstract:

Objective: Pork is an essential food in the U.S. and many other countries worldwide. This study systematically identified and synthesized scientific evidence on pork consumption in relation to body weight and composition.

Design: Keyword search was performed in Cochrane Library, PubMed, Web of Science, CINAHL, and Google Scholar. Meta-analysis was performed to estimate the pooled effect size of pork consumption on body weight and composition.

Results: A total of 13 studies (i.e., five randomized controlled trials, two randomized crossover trials, four cross-sectional studies, and two longitudinal studies) met the pre-specified eligibility criteria and were included in the review. Among the experimental studies without daily total energy intake restrictions, pork intake was associated with a reduction in body weight by 0.86 (95% confidence interval=0.17–1.55) kg and body fat percentage by 0.77% (0.11%–1.43%), whereas pork intake was not associated with change in lean mass. Among the experimental studies with energy restrictions, pork intake was associated with a reduction in body weight by 5.56 (0.55–10.59) kg, lean mass by 1.50 (1.39–1.62) kg, and fat mass by 6.60 (6.42–6.79) kg. Among the observational studies, pork intake was not associated with overweight status. No publication bias was identified by Egger’s and Begg’s tests.

Conclusions: Findings on pork consumption in relation to body weight/composition differed by study design. Future experimental studies based on representative samples are warranted to examine the effect of fresh and lean pork consumption on body weight and composition among the general population and by subgroups.

These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project’s principal investigator. This report has not been peer-reviewed.

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