



... just the FACTS

Study summaries examining the latest science on beef's place in a healthy diet

BURDEN OF PROOF STUDY FINDS WEAK TO NO EVIDENCE OF ASSOCIATION BETWEEN UNPROCESSED RED MEAT AND HEART DISEASE, CANCER, TYPE 2 DIABETES, AND STROKE

STUDY DESIGN:

This meta-analysis applied rigorous new Burden of Proof risk function methodology to systematically evaluate all of the prospective epidemiological evidence on unprocessed red meat consumption and six key health outcomes.

OBJECTIVES:

This study examined and evaluated the strength of evidence of associations between unprocessed red meat and ischemic heart disease, colorectal cancer, breast cancer, type 2 diabetes, ischemic stroke, and hemorrhagic stroke.

DATA:

Using PRISMA guidelines for systematic reviews and meta-analyses this Burden of Proof study identified 55 reports, spanning four continents including North America, Europe, Asia, and Australia. The sample size for each health outcome evaluated ranged from 999,428 to 2,413,032 individual participants.

METHODS:

This systematic review and meta-analysis used the new Burden of Proof methodology to evaluate all the available prospective epidemiological evidence related to unprocessed red meat intakes and six health outcomes. The strength of the evidence was evaluated and assigned star ratings based on a scale that can be interpreted as indicating there is either 'no', 'weak', 'moderate', 'strong', or 'very strong' evidence of association.

RESULTS:

This Burden of Proof meta-analysis found:

- Weak evidence of associations between unprocessed red meat consumption and ischemic heart disease, colorectal cancer, breast cancer, and type 2 diabetes.
- No evidence of associations between unprocessed red meat consumption and ischemic stroke, and hemorrhagic stroke.
- No significant relationship between unprocessed red meat consumption and combined-cause incidence and mortality when all six health outcomes were analyzed in combination.

The authors note: A key finding of this meta-analysis is that there is a high degree of between-study heterogeneity and uncertainty on the health effects of red meat intake in the existing body of evidence.

CONCLUSIONS:

This rigorous Burden of Proof meta-analysis found weak to no evidence of associations between unprocessed red meat consumption and ischemic heart disease, colorectal cancer, breast cancer, type 2 diabetes, ischemic stroke, and hemorrhagic stroke. The authors conclude the evidence related to unprocessed red meat and the risk of disease is weak and insufficient to make stronger or more conclusive recommendations.

Lescinsky H et al. Health effects associated with consumption of unprocessed red meat: A Burden of Proof study. Nat Med 2022;28:2075–2082.