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A Literature Review on Red Meat Consumption Contribution as a Risk Factor for Type 2 Diabetes

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Meat Consumption: a Risk Factor for Type II Diabetes

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Introduction

Type II Diabetes (T2D) continues to be a strict health concern for public health officials because the incidence of diabetes within the past two decades has increased. Risk factors increase the probability of Type II Diabetes, literature review has shown that common risk factors are sedentary lifestyles and poor diet. A poor diet with high sugar, sodium, starchy carbohydrates, and red meat defines a traditional Western Diet. It is estimated that in 2030 cases of diabetes will rise to 439 million. [3]

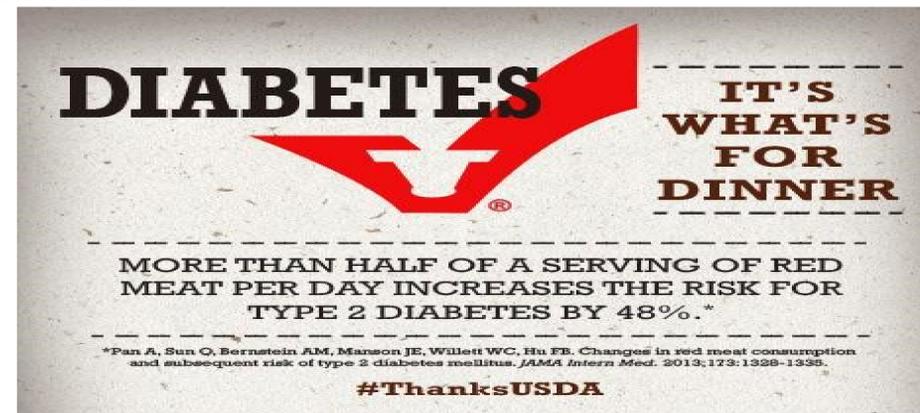**Risk of type 2 diabetes mellitus according to change in red meat intake over the past 4 years**
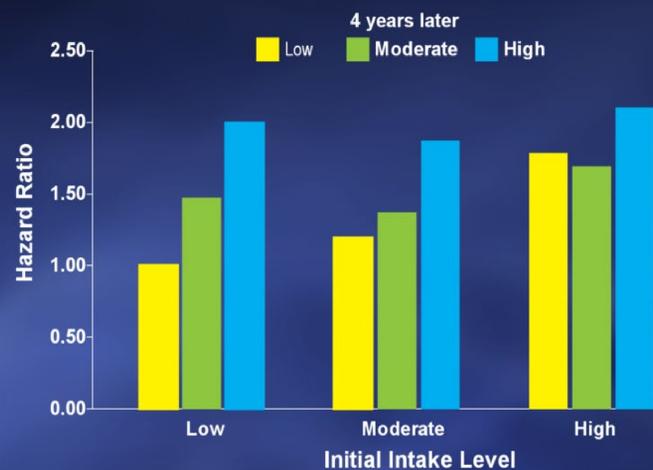
European Primary Care Cardiovascular Society

Pan *et al.,* JAMA Intern Med. 2013

Objective/Purpose

Reducing risk factors like a high red consumption diet can help improve the overall health and reduce the likelihood of developing type II diabetes. Public health officials should encourage an active lifestyle and introduce more whole grains, fruits, vegetables, and plant protein in daily diets. Cutting out meat for one meal a day could drastically reduce the amount of red meat consumed each week and can help reduce the risk of developing type II diabetes later in life.

DIABETES IT'S WHAT'S FOR DINNER

MORE THAN HALF OF A SERVING OF RED MEAT PER DAY INCREASES THE RISK FOR TYPE 2 DIABETES BY 48%.*

*Pan A, Sun Q, Bernstein AM, Manson JE, Willett WC, Hu FB. Changes in red meat consumption and subsequent risk of type 2 diabetes mellitus. *JAMA Intern Med.* 2013;173:1328-1335.

#ThanksUSDA

Research Methods

The research method to obtain the literature included a comprehensive search from the Old Dominion University Libraries database system. This system allowed us to narrow our search about diabetes to locate the more specific. Search terms such as "red meat" and "western diet" combined with "type 2 diabetes" were used collectively to narrow the search. Searches were redirected to only humans and adults in PubMed. Three cohort studies were depicted to link red meat and T2D together.

Results

All three cohort studies conducted assessments that show that high consumption of red meat increases the risk of T2D due to red meat being high in saturated fats. Saturated fats increase serum free fatty acids and increases insulin resistance. Heme iron, produced from red meat, increases fatty acid oxidation damaging the beta cells of the pancreas.[6] One cohort mortality study on California Adventist showed 24,673 white Adventists living in California, 40% and 80% higher prevalences of diabetes among women who consumed meat (prevalence ratio = 1.4, 95% CI, 1.2–1.8) and men (prevalence ratio = 1.8, 95% CI, 1.3–2.5), respectively, compared with vegetarians, after adjustment for age and body weight. Diabetes prevalence increased as the amount of meat consumption increased.[1] In North America, 63% and 74% of individuals consume red or processed meat, increasing their risk of T2D.[2] Health professionals recommend a Mediterranean diet characterized by high consumption of fruits, vegetables, saturated fats, and whole grains. Interventions could include dietary shifts to sustainable diets. Other interventions include Minimise disruption, which is producing affordable plant-based food. Maximizing awareness, which is marketing plant-based foods putting them at the top of menus. Lastly, an intervention shifting norms so that plant-based foods become chosen by choice than seen as fringe behavior.[5]

Type 2 Diabetes Prevalence
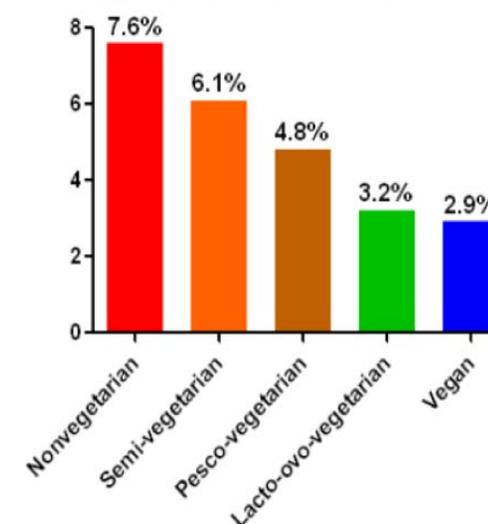
Odds Ratio* of Type 2 Diabetes
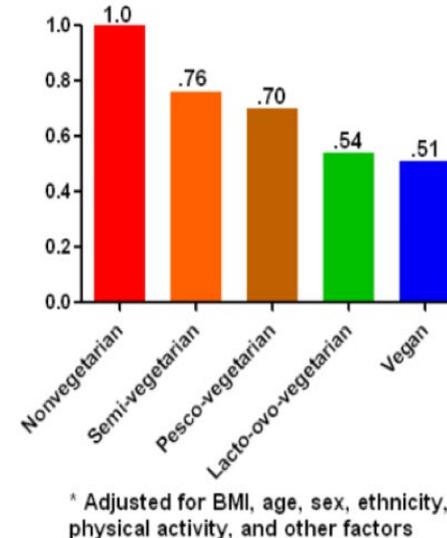
* Adjusted for BMI, age, sex, ethnicity, physical activity, and other factors

Conclusion

High consumption of unprocessed red meat is associated with T2D. Nuts, dairy products, and whole grains are associated with lower risk. Therefore from a public health standpoint, other healthy dietary components should be replaced with red meat to decrease the prevalence of T2D. However, we cannot completely rule out the possibility of confounding. [4]

References

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