

Nuts Over Meat: A Scientific Symphony of Substitution for Cardiometabolic Wellness and Lower All-Cause Mortality Risk



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A shift in diet from high consumption of animal-based foods, especially red and processed meat, to plant-based foods (e.g., nuts, legumes and whole grains) is associated with a lower risk of all-cause mortality, cardiovascular diseases and type 2 diabetes.

In a world grappling with environmental challenges and escalating health concerns, our dietary habits and choices have taken center stage.^{1,2} The ecological impact of mass animal product consumption is undeniable —deforestation, greenhouse gas emissions, resource depletion and loss of biodiversity.^{1,2} Furthermore, rising instances of non-communicable diseases such as cardiovascular diseases (CVD) and type 2 diabetes (T2D) are closely linked to dietary habits, especially the consumption of red and processed meats.^{3,4} This catastrophic symphony compels us to scrutinize the impact of the food system and our dietary choices on both planetary and human health. Thus, opting for plant-based foods, such as nuts, legumes and whole grains, emerges as a sustainable choice, aligning personal health with environmental responsibility.

The Practical Impact of Substitution With Nuts in the Spotlight

Delving into the science of substitution, compelling evidence supports replacing animal-based food with plant-based alternatives, highlighting the efficacy of this dietary shift with emphasis on nut consumption in significantly reducing the risk of CVD, T2D and all-cause mortality.^{3,4}

Specifically, recent systematic reviews and meta-analyses demonstrated that substituting red and processed meat with nuts, legumes and whole grains is associated with a noteworthy reduction in the risk of total CVD, coronary heart disease (CHD), T2D and all-cause mortality, backed by moderate certainty of evidence.^{3,4} Similarly, replacing eggs with nuts is associated with a lower incidence of total CVD and all-cause mortality.⁴ Substitution of butter with olive oil exhibited



a moderate certainty of evidence in reducing the incidence of total CVD, CVD mortality, total T2D (incidence and mortality combined) and all-cause mortality.⁴ Furthermore, the replacement of dairy products with nuts and legumes was linked to a lower risk of all-cause mortality.⁴ While some associations showed low certainty of evidence, findings suggested an inverse relationship between poultry substitution with nuts or legumes and T2D incidence.⁴ Another systematic review and meta-analysis underscored the risk reduction associated with replacing red meat, particularly processed red meat, with alternative protein sources (e.g., fish/seafood, poultry, dairy, eggs, nuts, legumes).³ Nuts consistently emerged as a favorable replacement, demonstrating lower risks of CHD and all-cause mortality compared to other protein sources.³ The evidence suggests that not only the quantity but also the type of foods replaced matters.

These insights collectively advocate for a dietary shift towards plant-based food choices, particularly emphasizing nuts as a potential strategic substitution move for enhanced cardiometabolic health and lower all-cause mortality risk.

Mechanisms of Harmony

Beyond the shift itself, understanding the nutritional dynamics at play is crucial. Red and processed meat are characterized by high contents of saturated fats (such as stearic and palmitic acid), heme iron, and compounds like sodium, nitrates and nitrites. These components contribute to oxidative stress, chronic inflammation and insulin resistance, which might be associated with increased health risks linked to CVD, T2D and mortality.^{3,4} In contrast, plant-based foods such as nuts, legumes, whole grains and olive oil offer a contrasting profile. They contain significantly less saturated fats and more monounsaturated and polyunsaturated fats compared to red and processed meat. They are also characterized by high amounts of antioxidant and anti-inflammatory compounds, including fiber, phytochemicals, vitamins and minerals, and polyphenols, fostering cardiovascular health and mitigating risks associated with obesity.^{1,2,5,6} Thus, substituting animal-based foods, especially red and processed meat, with plant-based foods simultaneously reduces risk factors and contributes to observed beneficial associations regarding cardiometabolic health. Notably, replacing red meat with a high-quality plant protein source, such as nuts, leads to favorable changes in lipid profiles without adverse effects on body weight,⁷ blood pressure⁸ and glycemic control.⁹

In summary, the evidence suggests that adopting a dietary pattern characterized by reduced consumption of animal-based food, especially red and processed meat, accompanied by the increased consumption of plant-based foods such as nuts, legumes and whole grains, is associated with a diminished risk of all-cause mortality, CVD, CHD and T2D, therefore reducing the personal and healthcare costs for society. This dietary shift not only holds promise for individual health but also aligns with the broader goal of promoting planetary health for future generations. Nevertheless, further research is essential to reinforce existing evidence, explore potential replacement products, and advance our understanding of the intricate interplay between dietary habits and health outcomes, paving the way for refined dietary recommendations that cater to both individual well-being and planetary sustainability. 🟩

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