

Case Report

Integrating Vegan Principles with Paleolithic Nutrition in Diabesity and Endocrine Health

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Abstract

The increasing prevalence of diabesity, a combined state of obesity and type 2 diabetes mellitus, along with other endocrine disorders, has emerged as a major global health concern. These conditions are primarily driven by lifestyle factors, particularly dietary habits, physical inactivity, and metabolic imbalances. In recent years, there has been growing interest in alternative dietary patterns that may help improve metabolic health, including plant-based nutrition models and ancestral dietary frameworks.

Keyword: Veganism, Paleolithic Diet, Diabesity; Endocrinopathies, Insulin sensitivity, Plant-Based nutrition

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Introduction

The Paleolithic diet is based on the concept of consuming foods similar to those eaten by early human populations, emphasizing whole, unprocessed foods such as fruits, vegetables, nuts, seeds, and lean protein sources. In contrast, vegan nutrition eliminates all animal-derived products and focuses entirely on plant-based food sources. Although these two dietary approaches appear fundamentally different, both prioritize minimally processed foods and have been associated with improvements in metabolic health outcomes.

Concept of a vegan paleolithic approach

A combined vegan-Paleolithic dietary model attempts to integrate the principles of both approaches by focusing exclusively on plant-based foods while maintaining the structural simplicity of ancestral eating patterns. This includes the exclusion of refined grains, processed sugars, and ultra-processed foods, while emphasizing natural, whole plant foods.

Such a dietary pattern is increasingly being explored for its potential role in managing metabolic disorders, particularly obesity, insulin resistance, and endocrine dysfunctions.

Potential role in diabetes and metabolic disorders

Feature	Paleolithic diet	Vegan diet	Vegan-Paleolithic diet
Primary food source	Lean meats, fish, fruits, vegetables, nuts	Fruits, vegetables, legumes, grains, nuts, seeds	Fruits, vegetables, nuts, seeds, legumes*, mushrooms (*depending on adaptation)
Animal products	Included	Excluded	Excluded
Dairy products	Excluded	Excluded	Excluded
Whole grains	Generally excluded	Included	Generally excluded
Processed foods	Avoided	Limited	Avoided
Refined sugar	Excluded	Limited or excluded	Excluded
Dietary focus	Evolutionary eating pattern	Plant-based nutrition	Whole-food, plant-based ancestral eating

Table 1: Comparison of paleolithic, vegan, and vegan-paleolithic dietary approaches.

Both vegan and Paleolithic dietary patterns have independently demonstrated beneficial effects on body weight regulation, glycemic control, and insulin sensitivity. Diets rich in plant-based foods are typically high in dietary fiber, antioxidants, and phytonutrients, all of which contribute to improved metabolic regulation and reduced systemic inflammation.

Similarly, Paleolithic-style diets, when followed in a balanced manner, have been associated with improvements in lipid profiles, blood glucose control, and insulin response. These effects are particularly relevant in the management of diabetes, where insulin resistance plays a central role in disease progression.

A combined approach may therefore offer complementary benefits by enhancing nutrient density while minimizing exposure to processed foods that contribute to metabolic dysfunction [Table 1].

Implications for endocrine health

Emerging evidence suggests that plant-based dietary patterns may also have a positive influence on endocrine-related conditions such as polycystic ovary syndrome (PCOS), thyroid dysfunction, and metabolic syndrome. Improved insulin sensitivity and reduced adiposity are key mechanisms through which dietary interventions may influence hormonal balance.

However, careful dietary planning is necessary in vegan-based approaches to ensure adequate intake of essential nutrients such as vitamin B12, iron, omega-3 fatty acids, and high-quality protein sources.

Challenges and nutritional considerations

Health outcome	Proposed mechanism	Expected benefit
Weight reduction	Increased fiber intake and reduced energy density	Lower body weight and adiposity
Glycemic control	Reduced refined carbohydrate intake and improved insulin sensitivity	Better blood glucose regulation
Insulin resistance	Higher intake of antioxidant-rich plant foods	Improved insulin responsiveness
Lipid profile	Reduced saturated fat and increased unsaturated fats	Lower LDL cholesterol and triglycerides
Systemic inflammation	High intake of phytochemicals and antioxidants	Reduced inflammatory biomarkers
Satiety	High fiber and nutrient density	Reduced overeating and improved appetite control

Table 2: Potential benefits of a vegan-paleolithic dietary pattern in diabetes.

Despite potential benefits, a vegan-Paleolithic dietary model presents several nutritional challenges. The exclusion of animal products and processed food groups can increase the risk of micronutrient deficiencies if the diet is not properly balanced. Nutritional adequacy must therefore be ensured through a diverse intake of legumes, seeds, nuts, leafy vegetables, and fortified foods where necessary [Table 2].

Another challenge lies in maintaining long-term adherence, as restrictive dietary patterns may be difficult to sustain without proper guidance and meal planning strategies.

Conclusion

The integration of vegan and Paleolithic dietary principles represents a novel nutritional approach with potential applications in the management of diabetes and endocrine disorders. By emphasizing whole, plant-based foods and eliminating processed dietary components, this approach may support improved metabolic outcomes, including better glycemic control and weight regulation.

However, current evidence remains largely theoretical and observational in nature. More rigorous clinical studies and long-term trials are required to validate the effectiveness, safety, and sustainability of this combined dietary strategy across different populations.

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