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Role of Grapefruit in Weight Management and Metabolic Health

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Abstract

Grapefruit (Citrus × paradisi) is a low-calorie, nutrient-rich citrus fruit with potential benefits for weight management and metabolic health. It contains vitamin C, dietary fiber, potassium, and bioactive compounds such as naringin, carotenoids, and phenolic compounds, which provide antioxidant and anti-inflammatory effects. Grapefruit may help in controlling body weight by promoting satiety, reducing appetite, and supporting lipid metabolism. It may also improve blood glucose regulation, insulin sensitivity, and cholesterol levels, thereby contributing to better metabolic health. However, its benefits are most effective when combined with a balanced diet and healthy lifestyle. Overall, grapefruit can be considered a valuable functional food for supporting weight and metabolic wellness.

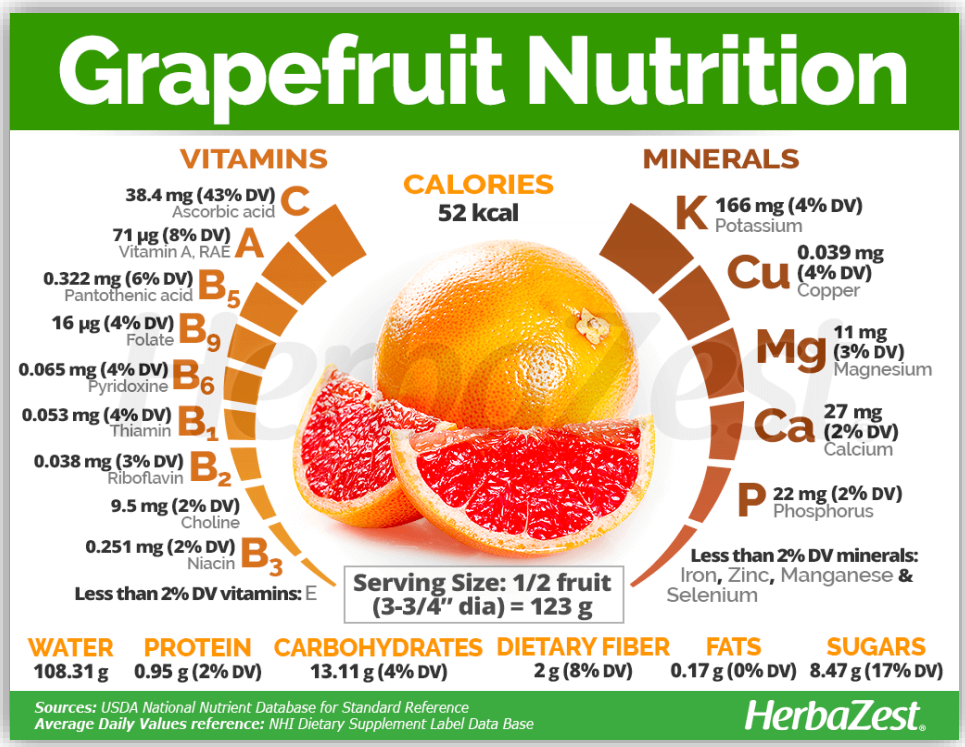
keyword- Grapefruit *Citrus* × *paradisi*, Weight management, Metabolic health, Obesity, Insulin sensitivity, Dietary fiber, Vitamin C, Antioxidants

Introduction

Grapefruit (*Citrus* × *paradisi*) is a widely consumed citrus fruit known for its refreshing taste and high nutritional value. In recent years, there has been growing interest in the role of grapefruit in weight management and metabolic health due to the rising prevalence of obesity, diabetes, and metabolic syndrome. Functional foods such as grapefruit may help improve metabolic functions and support healthy body weight when included in a balanced diet (**Onakpoya *et al.*, 2017**).

Nutritional Composition of Grapefruit

Grapefruit is low in calories and contains a high proportion of water, making it suitable for calorie-controlled diets. It is rich in vitamin C, dietary fiber, potassium, and bioactive compounds such as flavonoids (naringin), carotenoids, and phenolic compounds. These nutrients and phytochemicals contribute to its antioxidant, anti-inflammatory, and metabolic regulatory properties **(Murugesan *et al.*,** 2020**).**



Role of Grapefruit in Weight Management

The low energy density of grapefruit helps promote satiety, which may reduce overall food intake. Dietary fiber present in grapefruit slows gastric emptying and enhances the feeling of fullness, thereby assisting in appetite control. Some studies have reported that regular grapefruit consumption may contribute to modest weight loss and reduction in waist circumference when combined with a calorie-restricted diet. The presence of bioactive compounds may also support lipid metabolism and fat oxidation (**Wang *et al.*, 2023**).

Role of Grapefruit in Metabolic Health

Grapefruit has shown beneficial effects on various aspects of metabolic health. The flavonoid naringin has been reported to improve insulin sensitivity and help regulate blood glucose levels. Grapefruit consumption may also positively influence lipid profiles by reducing total cholesterol and triglyceride levels. Additionally, its antioxidant properties help

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reduce oxidative stress and inflammation, which are key contributors to metabolic disorders such as type 2 diabetes and cardiovascular disease (**Okesina *et al.*, 2024**)

Scientific Evidence

Several clinical and experimental studies suggest that grapefruit intake is associated with improved metabolic parameters, including body weight, glucose metabolism, and lipid levels. However, the magnitude of these effects varies among individuals and depends on overall diet and lifestyle factors **(Dow *et al.*, (2012)**

Limitations and Precautions

Despite its health benefits, grapefruit should be consumed with caution by individuals taking certain medications, as it can interfere with drug metabolism by inhibiting cytochrome P450 enzymes. Moreover, grapefruit alone cannot ensure weight loss or metabolic health and should be part of a holistic dietary and lifestyle approach (**Siwek *et al.*, 2024**)

Conclusion

Grapefruit is a functional fruit with potential benefits for weight management and metabolic health due to its low-calorie content, high fiber, and rich phytochemical profile. Regular inclusion of grapefruit in a balanced diet, along with physical activity and healthy lifestyle practices, may support improved metabolic outcomes and overall health.

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