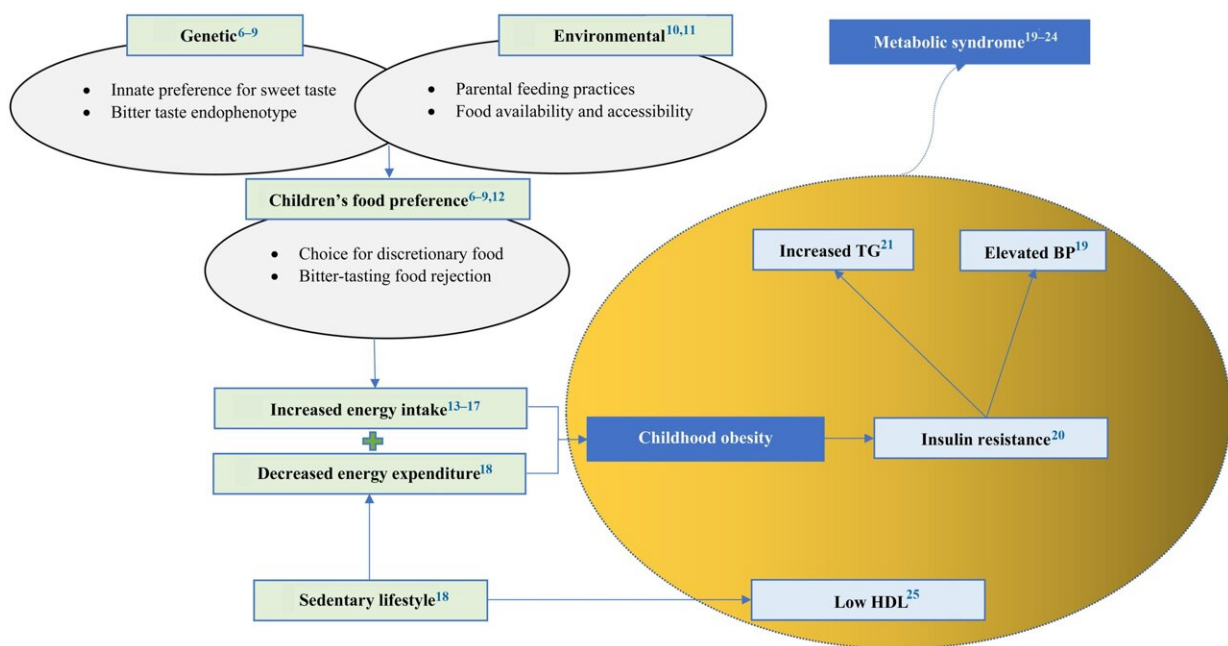


Bitter-taste vegetables in Asian diets may help reduce metabolic syndrome risk factors in children

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BP, Blood Pressure; HDL, High-Density Lipoprotein; TG, Triglycerides. Credit: Wai Yew Yang

Childhood obesity has become a significant health concern in Asian countries over recent decades, leading to a higher incidence of metabolic syndrome among children. Metabolic syndrome encompasses a cluster of conditions such as high blood pressure, high blood sugar, excess body fat

around the waist, and abnormal cholesterol levels. These conditions increase the risk of heart disease, stroke, and type 2 diabetes.

A review [published](#) in the journal *Exploratory Research and Hypothesis in Medicine* emphasizes the importance of bitter-taste vegetables, particularly those from the Brassicaceae family, which are rich in bioactive compounds known for their anti-inflammatory and antioxidant properties. These vegetables could potentially play a role in preventing metabolic syndrome.

Metabolic syndrome is a significant health problem characterized by a combination of risk factors, including central obesity, insulin resistance, hypertension, and dyslipidemia. The syndrome has been associated with increased risks of cardiovascular disease and type 2 diabetes.

In children, the prevalence of metabolic syndrome has been rising, mirroring trends seen in adult populations. This increase is largely attributed to poor dietary habits, lack of physical activity, and the rising prevalence of [childhood obesity](#). The review highlights that early intervention is crucial to mitigate these risks, and dietary modifications, including increased [vegetable intake](#), are a key strategy.

Despite the availability and cultural incorporation of bitter-taste vegetables in many Asian diets, the overall vegetable intake among children remains below the recommended levels. The review highlights the abundance of Brassica vegetables in Asian countries, which are often consumed in various traditional dishes. However, there is a noticeable gap in meeting daily vegetable intake recommendations, particularly among children, which may contribute to the rising rates of obesity and related metabolic disorders.

The review explores the interaction between [genetic factors](#), [taste preferences](#), and dietary habits. Children's food preferences, particularly

their inclination towards sweet-tasting foods over bitter or sour vegetables, are influenced by both genetic and environmental factors. This preference can lead to an increased intake of high-calorie, low-nutrient foods, contributing to obesity.

The review notes that children who are genetically predisposed to have a heightened sensitivity to bitter tastes may be less likely to consume bitter vegetables, opting instead for sweeter alternatives. This behavior can result in excessive caloric intake and reduced consumption of nutrient-rich vegetables, exacerbating the risk of obesity and metabolic syndrome.

The consumption of bitter-taste vegetables is posited to have potential health benefits in preventing metabolic syndrome. These vegetables are rich in glucosinolates, which are compounds that have been shown to have anti-inflammatory and antioxidant effects. Despite their [potential benefits](#), the review indicates that it remains inconclusive whether bitter-taste vegetables alone can significantly impact metabolic syndrome risk factors in children. The complexity of food preferences and genetic factors plays a crucial role in determining dietary habits and [health outcomes](#).

The potential health benefits of bitter-taste vegetables are attributed to several mechanisms. These vegetables contain [bioactive compounds](#) such as glucosinolates, polyphenols, and flavonoids, which have been shown to exhibit anti-inflammatory, antioxidant, and anti-carcinogenic properties.

These compounds may help modulate metabolic pathways, improve insulin sensitivity, and reduce oxidative stress, thereby lowering the risk factors associated with metabolic syndrome. The review suggests that these mechanisms, although promising, require further investigation to establish their efficacy and practical applications in dietary

interventions.

The review concludes that while bitter-taste vegetables have potential health benefits, there is a need for more [longitudinal studies](#) to fully understand their impact on metabolic syndrome in children. Future research should focus on investigating taste sensitivity, vegetable acceptance, and the long-term effects of consuming bitter-taste vegetables on metabolic health.

The review calls for more comprehensive dietary interventions and public health strategies to increase vegetable intake among children and address the growing concern of childhood obesity and metabolic syndrome.

To combat the rising prevalence of childhood obesity and metabolic syndrome, public health initiatives must emphasize the importance of balanced diets that include a variety of vegetables, particularly those with bitter tastes.

Policies should aim to improve access to fresh vegetables, provide education on the health benefits of these foods, and encourage culturally relevant dietary practices that incorporate traditional bitter-taste vegetables. Schools and community programs can play a pivotal role in promoting healthy eating habits and ensuring children develop a preference for nutritious foods from an early age.

This narrative review underscores the importance of promoting the consumption of bitter-taste vegetables in Asian cultures as part of a broader strategy to combat childhood obesity and [metabolic syndrome](#). While these vegetables offer promising health benefits, further research is needed to elucidate their role in mitigating metabolic risks in children.

More information: Wai Yew Yang et al, The Association between

Consumption of Bitter-taste Vegetables in Asian Culture and Metabolic Syndrome Risk Factors in Children: A Narrative Review, *Exploratory Research and Hypothesis in Medicine* (2023). [DOI: 10.14218/ERHM.2022.00129](https://doi.org/10.14218/ERHM.2022.00129)

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