PRESS RELEASE

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Plant-forward and low-insulinemic diets may help reduce weight gain and obesity risk during menopause, long-term study finds

Singapore, 28 May, 2026 — A large long-term study of nearly 40,000 women has found that women who eat more plant-based, low-insulinemic foods may gain less weight and have a much lower risk of developing obesity during the years around menopause. A low-insulinemic diet refers to a diet that is less likely to cause repeated spikes in insulin, a hormone that helps regulate blood sugar and fat storage.

Menopause is a major life stage marked by hormonal and metabolic changes. During this period, many women are more likely to experience weight gain and face a higher risk of obesity, type 2 diabetes, and cardiovascular disease. While healthy eating is known to support weight management, there has been limited evidence on which specific diets may work best for women during this transition.

To address this gap, researchers from the NUS–Harvard Women's Health Initiative (NUSHINE) conducted one of the first long-term studies to comprehensively compare 11 dietary patterns in women going through menopause. The study was co-led by Chair Professor Zhang Cuilin, Department of Obstetrics and Gynaecology, and Director of the Global Centre for Asian Women's Health (GloW) at the NUS Yong Loo Lin School of Medicine (NUS Medicine), together with Harvard T.H. Chan School of Public Health's Professor Frank B. Hu, Chair of the Department of Nutrition, and Dr Xia Tong, postdoctoral fellow , and other collaborators.

Published in *JAMA Network Open*, the study analysed data from 38,283 women enrolled in the Nurses' Health Study II from 1989 to 2019, focusing on approximately 12 years around menopause. In the study, 90 per cent of the participants are Caucasian, with future studies focusing on more diverse populations, including Asians. Participants' diets were assessed once every four years using validated food frequency questionnaires, and their body weight was tracked across six two-year intervals. This allowed the researchers to study how different eating habits were linked to weight changes during the menopausal transition. In total, the study compared 11 dietary patterns, along with ultra-processed food intake, within the same group of women.

Over the follow-up period, women gained an average of 0.80kg per year, while 5,214 developed obesity, based on over 340,000 combined years of follow-up across all participants. Among all the diets studied, the Planetary Health Diet Index, which focuses on plant-based foods such as nuts, legumes, whole grains, fruits, and vegetables, was most strongly linked

to a lower risk of obesity. Women who followed this diet most closely had a 54 per cent lower risk of developing obesity compared with those who followed it the least.

Another dietary pattern, known as the reverse Empirical Dietary Index for Hyperinsulinemia, was linked to the greatest reduction in yearly weight gain. This diet is considered to have lower insulinemic potential, meaning it is less likely to place repeated high insulin demands on the body. Women who followed this pattern gained 0.28kg less per year than those whose diets had higher insulinemic potential. This pattern was marked by lower intakes of red and processed meats, French fries, potatoes, and sodium.

In contrast, diets higher in ultra-processed foods, red and processed meats, sodium, potatoes, and French fries were linked to greater weight gain and a higher risk of obesity. A diet high in red and processed meats, fries, and sodium was associated with nearly double the risk of obesity. Overall, the findings point to a practical message: eating more nuts, legumes, fruits, vegetables, and whole grains, while cutting back on red and processed meats, salty foods, and fried potatoes, may help women manage their weight more healthily during menopause.

“These findings send a hopeful and practical message to women navigating one of the most challenging metabolic transitions in their lives. Adopting a plant-forward, low-insulinemic diet does not require drastic changes — it can be as simple as eating more whole grains, nuts, legumes, and vegetables, and reducing reliance on processed and high-sodium foods. If incorporated into routine midlife care, this dietary guidance could meaningfully reduce the long-term burden of obesity and cardiometabolic disease in women,” said Prof Zhang.

“Our findings are especially timely as obesity and cardiometabolic diseases continue to rise among midlife women worldwide,” added Prof Hu. “Incorporating evidence-based dietary counselling into routine midlife healthcare may help women protect their long-term health and reduce the risk of obesity-related chronic diseases.”

Future studies should examine these associations in more diverse populations, including Asian women, and explore whether targeted dietary interventions during menopause can improve cardiometabolic health. The NUS–Harvard collaboration through NUSHINE is well-positioned to address these questions and generate evidence that could inform dietary guidelines and clinical practice for women in midlife.

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