



## 5th Gabriele Possanner Lecture at the Center for Public Health

# Precision Nutrition for Obesity Prevention and Improving Metabolic Health: Is It Ready for Prime Time?

**Prof. Frank B. Hu, MD, MPH, PhD**



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**Venue:** Zentrum für Public Health, Seminarraum 3 (Hofgebäude), Kinderspitalgasse 15, 1090 Vienna

**Date & Time:** Thursday, April 18, 2024, 12:00 pm – 1:00 pm,

**Host:** Eva Schernhammer

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## Frank Hu

Frank Hu, MD, MPH, PhD, is the Fredrick J. Stare Professor of Nutrition and Epidemiology and Chair of the Department of Nutrition at the Harvard T.H. Chan School of Public Health. He is also Professor of Medicine at Harvard Medical School and Brigham and Women's Hospital. His major research interests include epidemiology and prevention of cardiometabolic diseases through diet and lifestyle; GxE interactions and risk of obesity and type 2 diabetes; nutritional metabolomics in type 2 diabetes and cardiovascular disease; and nutrition transition, metabolic phenotypes, and cardiovascular disease in low and middle-income countries. Dr. Hu serves as Director of Dietary Biomarker Development Center and Co-director of Obesity Epidemiology and Prevention Program at Harvard. He served on the 2015 Dietary Guidelines Advisory Committee at the US Department of Agriculture and US Department of Health & Human Services. He is a member of the National Academy of Medicine.

## Abstract

Advancements in genomics, metabolomics, and gut microbiome tools present both opportunities and challenges for precision nutrition in addressing obesity and metabolic diseases. Integrating these technologies into 'systems epidemiology' enhances our understanding of the biological mechanisms linking diet and health. Nutritional genomics identifies genetic variants affecting nutrient intake and metabolism, predicting individual responses to dietary interventions. Metabolomics unveils food-related metabolomic fingerprints and reveals diet-modifiable metabolic pathways. Dietary interventions impact gut microbiota, influencing food metabolism and glycemic control. Precision nutrition, combining these tools with big data analytics, holds promise for personalized guidance in obesity and diabetes prevention. However, challenges persist in applying personalized nutrition in clinical and public health, necessitating a balance between precision and public health nutrition investments.