

## Oat Nutrition and Health

YiFang Chu

PepsiCo, Chicago, USA

### Abstract

The landmark approval of a health claim for oats in 1997 by the United States Food and Drug Administration (FDA) marked the first food specific health claim. The FDA had concluded that an intake of at least 3 g beta-glucan from oats as part of a diet low in saturated fats could help reduce the risk of heart disease. Of importance is that the oat health claim signifies for the first-time recognition by a public health agency that dietary intervention could be beneficial in disease prevention, and that certain foods or food components, when consumed as part of a healthy diet, may reduce the risk of certain diseases. Compared to other whole grains such as corn, wheat, and rice, oat nutrition profiles are uniquely “complete” across many constituents, ranging from nutrients to phytochemicals and bioactive compounds. Nutritionally, oats provide many essential nutrients. On a 100 g basis, oats are a significant source of dietary fiber, soluble fiber mostly as beta-glucan, thiamin, folate, iron, magnesium, copper, and zinc. Additionally, oats are an excellent source of potassium and are low in sodium, with a Na:K ratio less than one. Avenanthramides are phytonutrients in oats known to have anti-inflammatory and antioxidative activity, and may be involved in some of the health effects unique to oats. Lately, research has focused on the impact of oat intake on other health outcomes beyond the lipid lowering effect, such as blood pressure, body mass index and weight, glucose metabolism and type 2 diabetes, as well as caloric regulation and satiety. Finally, recent investigation linked oats’ beneficial cardiovascular impact to their prebiotic effect on gut microbiome. *Akkermansia muciniphila*, *Roseburia*, *Bifidobacterium*, and *Faecalibacterium prausnitzii*, and plasma SCFA correlated with reduction in plasma lipids, suggesting prebiotic activity of oats to modulate gut microbiome could contribute towards its cholesterol-lowering effect. In all, oats can contribute to public health through many positive health endpoints, many interlinked. Continued scientific research and clinical studies are needed to understand the intertwined mechanisms and uncover potential health levers.

### PRESENTER BIOGRAPHY: YIFANG CHU

Born and raised in Taiwan, Dr. YiFang Chu is currently Director of Nutrition at Life Sciences. YiFang is an elected fellow at American College of Nutrition and holds adjunct professorship at University of Manitoba. YiFang serves on the Advisory Board for USDA Center of Excellence for Nutrition, Wellness and Quality of Life to help to improve the health and well-being of underserved and minority populations. He is the editor of two books: *Oats Nutrition and Technology* and *Coffee: Emerging Health Effects and Disease Prevention*. YiFang received his PhD from Cornell University and MBA from the Kellogg School of Management at Northwestern University.