

## Professor Gengsheng HE 何更生教授

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### Biography 講者介紹

Prof. He Gengsheng has long been engaged in dietary, nutrition and health research. Currently her research work mainly focuses on nutrition-related chronic diseases such as obesity, metabolic syndrome and type 2 diabetes. She has participated in several global health projects such as Sino-Swiss international cooperation project of the National Natural Science Foundation, CMB and China-UK Global Health Support Program. She has published over 100 peer reviewed manuscripts including *Journal of Hazardous Materials*, and *Science of the total environment et al.*

何更生教授，主要從事膳食、營養與健康的研究。現任復旦大學公共衛生學院副院長、公共衛生安全教育部重點實驗室副主任。目前主要開營養膳食與代謝性疾病如肥胖，糖尿病等基礎和人群研究。主持國家自然科學基金國際合作和面上項目，參與國家重點食品安全研發計劃項目等。國內外期刊發表論文100餘篇；主編和參編教材及參考書籍十餘本。

### Abstract 題目摘要

New strategies for prevention of life-style related diseases through alterations of diet and microbiota

基於「腸道菌群-代謝表型」新策略

研究膳食對生活方式相關疾病的預防作用機制

Cardiovascular disease is an important public health problem that causes premature death of adults worldwide. Dietary factors are one of the main changeable lifestyles. The quality of carbohydrate in the diet is the key to the prevention and treatment of cardiovascular diseases, but its mechanism of action as a regulator of intestinal microbiota is still unclear. A parallel dietary intervention was conducted. Among the people with obesity/normal body weight and low inflammation, it is clear that long-term intake of whole-grain rye can improve the metabolism of glucose and lipid and inflammatory state of the body, and change the abundance and species distribution of fecal intestinal flora; The pathway of whole-grain rye intervention regulating the metabolism of glucose and lipid and the level of inflammation through intestinal flora was revealed. The sensitive phenotype and marker metabolite group of whole grain - intestinal flora - glucose and lipid metabolism were found and verified in the high-risk population of metabolic chronic disease. Based on the new perspective of "metabolic phenotype", the results evaluated the effect of new diet and lifestyle on the metabolism of glucose and cholesterol in the body and the related mechanisms by drawing a network map of diet-enteromicrobiota-metabolic phenotype, providing theoretical and practical basis for precise prevention and personalized intervention of chronic metabolic diseases.

心血管疾病是引起全球成年人過早死亡的重要公共衛生問題。膳食因素是主要的可改變的生活方式之一。膳食結構中碳水化合物質量是心血管疾病防治的關鍵，但其作為腸道微生物群的調節劑，作用機制尚不清楚。基於我們已有中瑞合作項目在中國人群中開展了黑麥膳食干預研究。在肥胖/體重正常低度炎症人群中，明確了長期攝入全穀物黑麥可改善機體醣脂代謝及炎症狀態，並改變糞便腸道菌群的豐度與種類分佈；揭示了全穀物黑麥干預通過腸道菌群調節機體醣脂代謝及炎症水平的作用通路；發現了全穀物-腸道菌群-醣脂代謝的敏感表型及標誌性代謝物群組，並在代謝性慢病高危人群中驗證。基於「代謝表型」新視角，通過繪製膳食-腸道菌群-代謝表型的網絡圖譜，全面評估了新型膳食與生活方式對機體糖、膽固醇代謝的作用及相關機制，為慢性代謝性疾病的精準預防及個性化干預提供理論及實踐依據。