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Screening N-glycan biomarkers and exploring suboptimal health as preventive tools for metabolic diseases

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Suboptimal health status (SHS) is characterized by ambiguous health complaints, general weakness, and lack of vitality, and it has become a new public health challenge in China and worldwide. SHS is believed to be a subclinical, reversible stage of chronic disease. As studies of intervention and prognosis for SHS are expected to become increasingly important, a reliable and valid instrument for its assessment is essential. A questionnaire for measuring SHS in urban Chinese was developed based on focus group discussions and a literature review. Questionnaire validity and reliability were evaluated in a small pilot study and then in a cross-sectional study of 3000 individuals. The analyses included tests for reliability and internal consistency, exploratory and confirmatory factor analysis, and tests for discriminative ability and convergent validity. The final questionnaire incorporated 25 items on SHS (SHSQ-25), and encompassed 5 subscales: fatigue, cardiovascular system, digestive tract, immune system, and mental status. The SHSQ-25 has proved to be a reliable and valid instrument for measuring sub-health status in urban Chinese. The progress of a combined genomics and glycomics study for exploring the mechanism of SHS and an example of screening novel biomarkers for metabolic syndrome by profiling human plasma N-glycans will be presented.

Biography

Wei Wang, MD, Ph.D., FFPH, is a professor of School of Medical Sciences, Edith Cowan University, Australia. He is also the Director, Beijing Municipal Key Laboratory-Centre of Excellence on Clinical Epidemiology, Beijing Municipal Government. He holds the honorary positions as fellow of the Public Health Faculty, Royal College of Physicians, UK; Adjunct Professor of University at Buffalo, The State University of New York, USA, Northwestern University, Chicago, USA, Capital Medical University, Beijing and Chinese Academy of Sciences, Beijing, China. He has over 100 publications including "Nature Genetics", "Nature Reviews Cancer", "Nature Proceedings", "NEJM", "Lancet", "PLoS Genetics", "PLoS Medicine", "PLoS ONE", "JAMA", "Journal of Proteome Research" and "Human Genetics".

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