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Fatty acids as novel biomarkers for cardiovascular health

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A wide range of fatty acids, including saturated fatty acids, trans fats and n-3 fatty acids, have been linked to the risk of cardiovascular disease. However, the relationship between various fatty acids and the risk cardiovascular disease varied much according to different types of fatty acids. Even more, even specific saturated fats, including even, odd and long-chain, have been shown various effects. Our previous studies have shown the plasma n-3 fatty acids have a good correlation with dietary survey from a semi-quantitative food frequency questionnaire. In addition, we demonstrated the association between plasma fatty acid profiles and the status of metabolic syndrome among participants who received health checkup. Moreover, our cohort study clearly showed fatty acids were important predictors for the development of cardiovascular events and all-cause deaths among the participants in on community. We found that a mutually adjusted two-marker model indicated that saturated fats and trans fats were significant predictors of all-cause death and cardiovascular events and the trans fats presented the greatest improvement in net reclassification for all-cause death and saturated fats presented the greatest improvement in net reclassification for events. Recently, we are studying the specific roles of even, odd, and long-chain saturated fatty acids and delta-5 and delta-6 desaturases, the crucial enzymes in polyunsaturated fatty acid-related pathways, for the risk of cardiovascular events. We believe the contributions our serial studies are important for understanding the role of various fatty acids for the risk of cardiovascular health.

Biography

Kuo-Liong Chien has been trained as a cardiologist and he received the PhD degree in Institute of Epidemiology, College of Public Health, National Taiwan University, majored in genetic epidemiology and cardiovascular epidemiology. Now as the Professor and Director in the Institute of Epidemiology and Preventive Medicine, NTU, he has conducted a prospective cohort study in a community, focused on cardiovascular disease risk factor prevention. In addition, he applied epidemiological and statistical methods in resolving important cardiovascular disease problems. He has published over 200 scientific papers in English on preventive cardiology, and his contribution to public health is on non-communicable disease (NCD) management and prevention in Taiwan.

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