

# 26<sup>th</sup> World Nutrition Congress

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## 15<sup>th</sup> Euro Obesity and Endocrinology Congress

June 17-18, 2019 London, UK

### FADS gene polymorphisms modulate the association between dietary n-3 LCPUFAs and DHA proportion in breast milk

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DHA is important for the development of brain and retina in newborns. Considering that exclusive breast feeding for at least 4-6 months are globally recommended, plus it is well known that nutrient requirement is determined by both genetic and environmental (including diet) factors, this clinical study was sought to investigate how the DHA levels in maternal milk is modulated by genetic variants and dietary n-3 LCPUFA intake. To recruit subjects (n=193), the inclusion criteria are Han Chinese women just having delivered full-term baby, 20-40 years old, healthy and willing to breast feed their baby for at least two months. Written informed consent will be obtained from participants. Personal information (or covariates) such as height, weight (before getting pregnancy and delivery, respectively), age, parity, education, smoking, alcohol drinking, gender of baby etc., and DNA from oral swab will be collected. Breast milk and dietary data will be collected at the end of the 1<sup>st</sup> and 2<sup>nd</sup> month of postpartum period. Considering Han Chinese women usually have special postpartum diets and care during puerperium. Therefore, collection of breast milk and dietary information will be repeated at the 2<sup>nd</sup> month. The fatty acid composition in milk will be analyzed by gas chromatography. Using food frequency questionnaire, intake of n-3 LCPUFA from foods and fish oil supplements will be calculated. We foresee that results of this study might contribute to public health care as nutritionists/dietitians will be able to target the vulnerable subjects, who are dietary dependent for DHA, for dedications in nutrition consults or customized dietary guidance. Moreover, this information is valuable in making policy regarding dietary recommendation in Taiwan.

#### Biography

Wen-Chieh Wu is a PhD student of Nutrition at China Medical University since 2013. His work focuses specifically on precision nutrition of pregnant and postpartum women. In addition, he has collaborated with company to develop genetic testing products and personalized meal services.

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