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

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Abstract

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 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 2 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 1st and 2nd 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 2nd 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 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, these information are valuable in making policy regarding dietary recommendation in Taiwan.

Recent Publications

1. Chien-Yi Chan, Tzu-Yuan Lin, Jim Jinn-Chyuan Sheu, **Wen-Chieh Wu**, Huang, Chun-Yin* · Matrix metalloproteinase-13 (MMP-13) is a target gene of HMG box-containing protein 1 (HBP1) in modulating oral cancer cell invasion · JOURNAL OF CELLULAR PHYSIOLOGY · 2019 Apr · 234(4):4375-4384 · SCI
2. Chien-Yi Chan, **Wen-Chieh Wu,** Tzu-Yuan Lin, Ming-Fen Lee, *Huang Chun-Yin, HMG box-containing protein 1 (HBP1) modulates matrix metalloproteinase-13 (MMP-13)-mediated cellular migration and invasion in oral cancer. EB (Experimental Biology) 2016 · San Diego, USA



Biography

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

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Notes/Comments