

OT7-02

The Association between Micronutrient Deficiencies and Body Adiposity: An Underlying Risk Factor for Increasing Obesity in Countries Passing through the Nutrition Transition?

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Background: Countries passing through the nutrition and epidemiological transition undergo rapid dietary and lifestyle changes that produce a 'double burden' of malnutrition and obesity, and related chronic diseases. The deficiency of some micronutrients may be an underlying factor associated with increased body fat deposition that contributes to the increased prevalence of obesity in these countries. The aim of this review is to investigate the association between micronutrient deficiencies, body adiposity, fat deposition and obesity.

Method: This review focuses on the current understanding of the association between micronutrient deficiencies and its relationship with fat deposition and obesity amongst overweight and obese individuals. Insight into the direction of causality will be provided by examining the physiological mechanisms that may underlie this association.

Result: Deficiencies of some micronutrients may be associated with increased fat deposition in the body, which may in turn, be a determinant for obesity. Overweight and obese individuals have lower blood concentrations of vitamins and minerals compared to non-overweight and non-obese individuals. It remains unclear, whether this association represents a causal relationship and, if so, the direction of causality. Childhood nutritional stunting resulting from micronutrient deficiencies is positively associated with increased adult adiposity, a risk factor for obesity. Concentrations of different micronutrients have also been found to be correlated with serum leptin concentration which is associated with differences in body adiposity. These associations suggest that micronutrient deficiencies may be important in determining body adiposity and so be a causal factor underlying the increasing prevalence of obesity in transition countries.

OT7-03

A Modified Mini Nutritional Assessment without BMI Predicts Nutritional Status of Community-Living Elderly in Taiwan

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Background: Malnutrition is common in older adults and nutritional monitoring is important for detecting emerging malnutrition.

Objective: The study determined whether modified MNA (Mini Nutritional Assessment) versions could

maintain the predictive ability of the tool in older Taiwanese.

Methods: The study purposely sampled 301 (138 male and 163 female) ≥ 65 -year-old community-free living outpatients who participated in free annual health examination at an area hospital in central Taiwan. A structured questionnaire elicited personal data, lifestyle information and answers to the MNA. Laboratory results from health checkup provided needed biochemical data. Each subject's nutritional status was assessed with the original, MNA-T1 (adopted population-specific cut-points), and MNA-T2 (further eliminated the BMI item and redistributed its score to MAC and CC items). **Results:** The three versions identified the same 0.7% elderly malnourished and 16.6, 12.0 and 10% at risk of malnutrition according to the original, MNA-T1 and MNA-T2, respectively. Friedman Test and post hoc analysis indicated that the pattern predicted with the original MNA was different from that predicted with the two modified versions whereas the patterns predicted with the two modified versions were not different from each other.

Conclusion: Adoption of population-specific anthropometric cut-points improves the predictive ability of the MNA in Taiwanese elderly, and the improvement is maintained in a version without BMI (but with adjusted MAC and CC scores). MNA without BMI has greater applicability and can save time for the professional healthcare workers in monitoring nutritional risk of elderly patients.

OT7-04

Iron Deficiency Anemia in Early Infants in An Okinawan Village

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Objective: Infancy is a vulnerable age group for iron deficiency anemia (IDA) throughout the world. It is suspected that main risk factors of early infant for IDA are preterm and low birth weight. In order to confirm this we investigated the results of infant screening test for anemia in an Okinawan village.

Subjects and Method: The subjects were 414 infants aged 4-5 months who received anemia screening test when they had regular municipal health check at in 2006-2007. The regular health check has been provided at community health and welfare center by the municipal governments. Capillary blood hemoglobin concentration was determined by the Cyanmethohemoglobin method. Hb concentration of less than 10.5g/dl was arbitrary defined as anemia in the study. Multivariate logistic regression analysis was carried out as dependent variable of Anemia and the independent variables were gestational age, birth weight, birth order, feeding methods (breast/partially breast/formula-fed).