

9<sup>th</sup> International Congress on

# Nutrition & Health

February 20-21, 2017 Berlin, Germany

## Obesity, insulin resistance and gene variation in multi-ethnic Malaysian adults

Mitra S R<sup>1</sup>, Tan P Y<sup>1</sup> and Farahnaz Amini<sup>2</sup><sup>1</sup>University of Nottingham, Malaysia<sup>2</sup>UCSI University, Malaysia

In order to tackle obesity-related non-communicable diseases, we aimed to evaluate and explore interaction between anthropometric indices, blood biochemical parameters, dietary intake and selected gene polymorphisms in apparently healthy Malaysians of three ethnic groups. Malaysian adults (Malaysian Malays, Malaysian Chinese and Malaysian Indians) with BMI>23 from communities living in Selangor are our participants. Our results reveal, mean age ( $\pm$ SD) is 43.0y ( $\pm$ 10.1) for women (n=93) and 41.0y ( $\pm$ 13.5) for male (n=20) participants. Average BMI on the combined data is 29.7kg/m<sup>2</sup> ( $\pm$ 5.1), significantly higher (P=0.01) than 23 kg/m<sup>2</sup> which is the current cut off for categorization as 'overweight' for South East Asian individuals. Mean fat mass for females is 33.9 kg ( $\pm$ 1.1) and for the male is 31.3 kg ( $\pm$ 17.6). Mean body fat percentage is 42.7% ( $\pm$ 5.3) for females (normal range: 18~28) and 34.2% ( $\pm$ 7.8) for the male (normal range: 10~20). Mean waist circumference is 92.1 cm ( $\pm$ 12.2) for females (normal: 80) and 106.5 cm ( $\pm$ 14.9) for the male (normal: 90). Indians have significantly lower HDL cholesterol (p=0.001), higher fasting insulin (p=0.002) and HOMA-IR (p=0.001) (1.3 $\pm$ 0.3 mmol/L, 14.3 $\pm$ 13.3 uU/ml and 1.8 $\pm$ 1.5) compared to Malays (1.7 $\pm$ 0.5 mmol/L, 7.0 $\pm$ 5.20 uU/ml and 0.9 $\pm$ 0.6) and Chinese (1.6 $\pm$ 0.4 mmol/L, 7.9 $\pm$ 5.2 uU/ml and 1.0 $\pm$ 0.6), respectively. There is ethnicity difference on the effect of FTO gene variants as below. Indians carrying GG genotype of FTO rs9930501 were compromised when compared to GA and AA genotypes respectively, with respect to fasting glucose (6.4 $\pm$ 2.2 mmol/L against 4.7 $\pm$ 0.1mmol/L and 5.0 $\pm$ 0.6mmol/L, p=0.016) and HOMA-IR (2.3 $\pm$ 1.6 against 2.0 $\pm$ 1.7 and 10 $\pm$ 0.5, p=0.018), BMI (34.6 $\pm$ 13.1 kg/m<sup>2</sup> against 26.7 $\pm$ 3.6 kg/m<sup>2</sup> and 28.8 $\pm$ 4.3 kg/m<sup>2</sup>, p=0.052) and body weight (97.6 $\pm$ 52.6 kg against 66.6 $\pm$ 10.0 kg and 76.6 $\pm$ 15.2 kg/m<sup>2</sup>, p=0.034). Whereas the Chinese carrying GA genotype were compromised with respect to body weight (72.1 $\pm$ 4.3 kg against 109.1 kg), BMI (27.8 $\pm$ 10.8 kg/m<sup>2</sup> against 37.3 kg/m<sup>2</sup>), WC (82.9 $\pm$ 1.8 cm against 121.0 cm) and serum leptin level (7.0 $\pm$ 1.6 ng/ml against 17.8 ng/ml) when compared to AA genotype. A diet and exercise intervention is ongoing in the above population.

soma.mitra@nottingham.edu.my

## Dietary guidelines for Indians: Need for its revision and importance in public health

D Raghunatha Rao

National Institute of Nutrition (ICMR), India

Dietary guidelines (DGs) play a very important role in guiding the population to adopt healthy life style practices at the individual level. In India, National Institute of Nutrition (NIN) is the nodal agency for promoting these dietary guidelines at the community level. The first dietary guidelines were formulated in the year 1998 by NIN and translated in to different languages to promote at the population level. After a decade, a committee was constituted for the revision of these dietary guidelines taking into consideration of change in the dietary habits of the population, influence of western food chains in Indian market, lack of physical activity among the people and growing trends in non communicable diseases at the population level. Further, DGs emphasize promotion of community health and prevention of non communicable and other diseases. Special focus on the importance of nutrition was emphasized for vulnerable segment of the population such as infants, children and adolescents, pregnant and lactating women and the elderly. The presentation mainly focuses on the need for the revision of the dietary guidelines and key differences in the new guidelines with doable and practical solutions under the "points to ponder" mentioned in the revised dietary guidelines. Further, the presentation also provides insight into different communication strategies to be applied at the community level in order to encourage people to follow the dietary guidelines.

drr\_rao@yahoo.com