

# H9: Ethnic Differences in Body Composition among Primary School Children in Kuala Lumpur

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## ABSTRACT

**Introduction:** Ethnicity influence body fatness in both adults and children. However, most studies examined body composition using either anthropometry or bioimpedance techniques. This study aimed to identify ethnic differences in body composition among primary schoolchildren in Kuala Lumpur using deuterium dilution technique (D<sub>2</sub>O). **Methods:** A total of 243 children (78 Malays; 80 Chinese; 85 Indian) aged 7-10 years were recruited from ten schools in Kuala Lumpur. Body weight and height were measured and body mass index (BMI) was calculated. Each child was given a dose of D<sub>2</sub>O according to body weight (0.3g/kg). Percentage of body fat (%BF), total body water (TBW) and fat-free-mass (FFM) were assessed by D<sub>2</sub>O technique. **Results:** Subjects were on average aged 9.0 ± 1.1 years, mean weight 30.1 ± 9.5 kg, height 131.4 ± 9.0 cm with BMI 17.1 ± 3.7 kg/m<sup>2</sup>. Mean values for %BF was 32.0 ± 8.0, TBW was 15.3 ± 3.3 kg and FFM 19.9 ± 4.4 kg. Results showed that %BF are found to be significantly higher in Indian compared to Malay and Chinese children (p<0.05). Chinese children had significantly (p<0.05) lower FFM (18.9 ± 4.5 kg) compared to Malay (20.5 ± 5.0 kg) and Indian (21.8 ± 5.7 kg) children. **Conclusion:** This study showed that Indian children had higher body fat compared to the other two ethnicities. The differences in body composition among different ethnicities indicate the need to consider ethnic-specific strategies in order to improve nutritional status of primary schoolchildren in Kuala Lumpur.

## KEY WORDS:

*Ethnicity, body composition, deuterium dilution*

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# D1: fMRI Study of Emotion in a Patients with Moderate Traumatic Brain Injury: A Preliminary Study

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## ABSTRACT

**Introduction:** Traumatic brain injury (TBI) can lead to impairment in cognitive, physical and emotional functioning. In this preliminary study, we used functional magnetic resonance imaging to determine differences in brain responses to cognitive emotion between study participants with moderate TBI (mTBI) and healthy controls. **Method:** Seven right-handed Malay males (5 controls and 2mTBI) were recruited. fMRI images were obtained using a 3.0-T scanner (Achieva, Philips, Netherlands) in a block paradigm during 4 emotions (sadness, fear, calmness and happiness). Data were pre-processed and analyzed using MATLAB 9.1 R2014a and Statistical Parametric Mapping 12. To detect brain activation, fixed-effects analyses were performed separately for mTBI and controls. With the threshold set at the family wise error (FWE),  $\alpha=0.001$  in multiple comparisons, and activation areas were identified using WFU PickAtlas. **Results:** Results show that mTBI results in fewer activated voxels under all conditions. Activated areas that were common under all conditions in both groups were at the bilateral middle occipital lobe, inferior occipital lobe, lingual gyrus, middle temporal gyrus, inferior temporal gyrus, and fusiform gyrus. The cuneus and hippocampus were evoked in controls but not in those with mTBI under all conditions. In calmness and in fear, the insula was activated in control participants only. The amygdala was activated only in fear in the controls but not those with mTBI. **Conclusion:** Functional activation patterns are different in those with mTBI compared to controls. These results can provide a better understanding of emotion-related issues with TBI.

## KEY WORDS:

*Emotion, fMRI, traumatic brain injury*