

## Energy expenditure and physical activity pattern of institutionalized elderly with low body mass Index

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### Abstrak

This cross sectional study was carried out in Jakarta, among institutionalized elderly aged 60 - 74 years. Rabe study reported that there is a high prevalence of low body mass index (BMI) value among the elderly in Jakarta. Ferro-Luzzi et al (1992) and James et al (1988) stated that an adult person with BMI less than 18.5 kg/m<sup>2</sup> was proposed being chronic energy deficient (CED) and had functioning and health impairment. General aim of this study is to investigate whether low BMI among elderly is associated with adaptation in energy expenditure and had negative consequences on health.

Based on James and colleague classification of BMI, two groups of elderly with different BMI value represented this study. Twenty elderly subjects with BMI < 11.00 kg/m<sup>2</sup> (low BMI group) and 20 elderly subjects with BMI 22.0 --25.00 kg/m<sup>2</sup> (normal BMI group). To every subject in each group was conducted questionnaires, Hb level measurement, 2 days combined record and recall daily physical activity, 2 days combined food weighing and 24-hour food recall intake, and resting energy expenditure (REE). Body composition was assessed by skinfolds technique and bioelectrical impedance analysis (BIA) using Lukaski and Deurenberg equations.

Result revealed that fat mass and fat free mass of low BMI subjects are significantly lower than the normal BMI subjects. The low BMI subjects had very low fat mass. However, both groups had same PAL [1.3 X basal Metabolic rate (BMR)]. The low BMI subjects who were considered as CED had similar level of activity of daily living (ADL) as those with normal BMI subjects. Both BMI group had no significant different on the number of health complaint.

On the whole, findings indicated that the CED elderly had no physical adaptation and negative consequences on health. Anyway using the cut-off point to define CED proposed by Ferro-Luzzi and colleague for Indonesian elderly needs carefully consideration.