

P27

Physical activity and body composition in overweight and obese adolescents

J Walkley¹, L Brennan², M. Tsrios³, N. Sinn³, J. Buckley³, P. Howe³, A. Coates³, R Mallows¹, S Lukeis¹, S Fraser¹, F Spargo¹, L Taylor¹, K Lante¹, K Greenway¹

Schools of ¹Medical Sciences & ²Health Sciences, RMIT University; ³Nutritional Physiology Centre, University of South Australia.

Background – Little is known about the physical activity behaviour of adolescents who are overweight or obese nor the relationship between directly measured physical activity behaviour and body composition.

Objective – The aim of this study was to investigate the relationship between physical activity (PA) participation and body composition in a population of overweight and obese adolescents.

Design – Participants included 12- to 18-year-old adolescents ($n \approx 173$), drawn from three studies in the *CHOOSE HEALTH* research program. In order to assess PA participation, study participants were instructed to wear an accelerometer during waking hours for 7 consecutive days, starting on a Saturday. Accelerometer data inclusion criteria include having worn the device for at least 10 hours on a minimum of 4 weekdays and 1 weekend day. Following anthropometric analyses, body composition was analyzed via Dual-energy X-ray Absorptiometry (Lunar[®] DEXA). Total body fat (BF), abdominal BF via 2 methods [(1) Lunar semi-automatic analysis and (2) abdominal fat content between L1 and L4 vertebrae], total lean body mass (LBM) and total bone mineral content (BMC) were calculated using standard Lunar[®] DEXA software.

Outcomes – Of the 173 subjects recruited into the study, 51% are male and 49% female. 63% of subjects were aged 12 – 14 years, while 37% were aged 15 – 18 years. Average participant age was 14 years, average height 1.67m, average body mass 88.3kg and average BMI 32kg/m². Body composition results; mean total BF = 38.2 ± 10.7kg; mean semi-automatic abdominal BF = 17.9 ± 5.4kg; mean L1 – L4 abdominal BF = 4.1 ± 1.2kg; total LBM = 45.3 ± 8.8kg; total BMC = 2.5 ± 0.5 kg.

Conclusions – The findings of this research provide useful insight into adolescent PA behaviour and its relationship with body composition. Furthermore, this study shows the PA discrepancy which exists when comparing Saturday and Sunday PA participation and the importance of this factor in adolescent PA research.

P28

Psychosocial effects of structured vs general lifestyle advice for weight loss in young women

SS Lim^{1,3}, RJ Norman², PM Clifton³, M Noakes³

¹Discipline of Physiology, School of Molecular and Biomedical Science, Adelaide University, SA 5000

²Discipline of Obstetrics and Gynaecology, Adelaide University, SA 5000

³CSIRO Human Nutrition, Adelaide, SA 5000

Background – Structured lifestyle intervention has been shown to produce weight loss but its psychosocial effects on young women are not known.

Objective – This study aimed to compare the psychosocial effects of structured lifestyle advice (S) to general lifestyle advice (G) in young women.

Design – A total of 206 young women (BMI 33.2 ± 0.3 kg/m², age 28 ± 0.3 years) were involved in this study. Those who received structured lifestyle advice (S) including energy restriction, physical activity and behavioural support were compared to those who received general lifestyle advice over 12 weeks (G). Body weight and psychosocial variables were measured at baseline and 12 weeks.

Results – The S group had significantly greater weight loss (4.9 ± 0.5 kg vs 0.7 ± 0.3 kg, $P < 0.001$), but also greater attrition (49% vs 32%, $P = 0.014$) compared to the G group. Structured lifestyle advice resulted in significantly greater improvements in psychological distress ($P = 0.047$), self-esteem ($P = 0.002$), family and friends' support on healthy eating ($P < 0.05$), friends' support on physical activity ($P = 0.03$), reduction in personal barriers to healthy eating ($P = 0.004$) and physical activity ($P = 0.014$) and reduction in social barriers to physical activity ($P < 0.001$). Most of these psychosocial improvements correlated significantly with weight loss.

Conclusions – The structured approach resulted in greater improvements in psychosocial outcomes in young women. However, the higher attrition rate indicates that this approach may not suit a significant proportion of young women.