OP77 DIET IN CHILDHOOD AND ADULTHOOD AND PHYSICAL PERFORMANCE IN OLD AGE: FINDINGS FROM THE BOYD ORR AND CAERPHILLY COHORTS

K Birnie,[1*] Y Ben-Shlomo,[1] D Gunnell,[1] S Ebrahim,[2] A Bayer,[3] J Gallacher,[3] RM Martin[1] *[1]School of Social and Community Medicine, University of Bristol, Bristol, UK; [2]Department of Epidemiology and Population Health, London School of Hygiene and Tropical Medicine, London, UK; [3]School of Medicine, Cardiff University, Cardiff, UK*

10.1136/jech.2011.143586.77

Background The ability to undertake physical tasks of everyday living is important for successful ageing. Assessments of physical performance, such as the get up and go timed walk and flamingo test of standing balance, characterise physical function and act as markers of current and future health. Factors operating in early life, such as socioeconomic adversity and nutrition, may impact on physical function in old age. A hormonal pathway, such as variations in insulin-like growth factor-I (IGF-I) levels, which increase muscle mass and strength, could link nutrition with physical function in later life.

Objective We examined the impact of aspects of childhood and adult diet on physical performance at age 63–86 years. We hypothesised that higher intakes of milk, calcium, protein, fat and energy, which are components of diet associated with higher levels of IGF-I, would be associated with better performance. Childhood diet was examined as a possible mechanism linking socioeconomic circumstances with physical performance in old age.

Design The Boyd Orr cohort (n=405) is a 65-year prospective study of children who took part in a survey of diet and health in 1930s; the Caerphilly Prospective Study (CaPS; n=1195) provides data from mid-life to old age. Linear regression models were used to investigate associations of diet with natural log-transformed walking times. Logistic regression was used to model the inability to balance for 5 s.

Results In age- and sex-adjusted models, a SD increase in natural log of childhood milk intake was associated with 4% faster walking times (95% CI 1% to 7%) and an odds ratio of the inability to balance for 5 s of 0.83 (95% CI 0.64 to 1.08). After controlling for childhood milk intake, associations of childhood socioeconomic position with walking time and balance ability were attenuated. There was no evidence of an association of adult milk intake with walking times. There were mixed findings for other components of diet. Higher intakes of calcium in childhood (4% faster per SD increase; 95% CI 0% to 7%) and protein in adulthood (3% faster per SD increase; 95% CI 1% to 5%) were associated with faster walking times in Boyd Orr, but only when total energy consumption had been controlled for.

Conclusions This is the first study to show a positive association of childhood milk intake with physical performance in old age. Potential interventions aimed at increasing childhood milk intake would need to be carefully assessed given possible harmful effects of milk.