

EAS16-0491, CVD RISK FACTORS.

EXPOSURE TO CARDIOVASCULAR DISEASE RISK FACTORS IN CHILDHOOD IS ASSOCIATED WITH INCREASED CAROTID EXTRA MEDIAL THICKNESS IN ADULTHOOD: THE CHILDHOOD DETERMINANTS OF ADULT HEALTH STUDY

H.West<sup>1</sup>, M. Skilton<sup>2</sup>, B. Fraser<sup>1</sup>, T. Dwyer<sup>3</sup>, A. Venn<sup>1</sup>, C.

Magnussen<sup>1</sup>.

<sup>1</sup> *Menzies Institute for Medical Research, Public Health and Primary Care, Hobart, Australia;* <sup>2</sup> *Boden Institute of Obesity, Nutrition, Exercise and Eating Disorders, Epidemiology, Sydney, Australia;* <sup>3</sup> *The George Institute for Global Health, Epidemiology, Oxford, United Kingdom*

**Objectives:** The ultrasound measure of Carotid artery Extra-Medial Thickness (cEMT) has been proposed as a quantification of adventitial involvement in atherosclerosis. We sought to examine the relationship of both childhood and adulthood cardiovascular disease (CVD) risk factors with cEMT in adults.

**Methods:** cEMT and carotid artery Intima-Media Thickness (cIMT) were measured by B-mode ultrasound at follow up (19.9 years) on 1288 participants of the Childhood Determinants of Adult Health Study. The mean age at follow up was 31.1 ±2.6 years. Anthropometrics of body mass index, waist circumference and sum of four skinfold thickness measures, blood pressure, fasting lipids, active and passive smoking, physical activity, and socioeconomic status were obtained at baseline and follow-up. CVD risk factors were regressed on cEMT using linear regression, with regression coefficients (β) expressed per one standard deviation (SD) increase in the CVD risk factor. The relationship between cEMT and cIMT was also assessed.

**Results:** Mean cEMT (SD) was 786.4mm (114.0mm) and was unrelated to cIMT (males r=0.05, females r=0.04). Childhood diastolic blood pressure (β=11.31mm, P=0.03) and skinfold thickness (β=11.26mm, P=0.04), and adult systolic blood pressure (β=8.57mm, P=0.02), and physical activity (β=7.18mm, P=0.03) were associated with cEMT in adulthood independent of confounders. In a multivariable model of childhood variables only skinfold thickness (β=9.76mm, P=0.05) remained significant. In a multi-variable model of adulthood variables, systolic blood pressure (β=8.16mm, P=0.05) and physical activity (β=6.66mm, P=0.05) remained significantly associated with cEMT.

**Conclusions:** The early development of atherosclerosis as indicated by cEMT appears to have predictors that are independent of those for cIMT.