hospitalisation, generally finding the strongest association to be with temperature below a given threshold measured at a lag of 7–14 days. In contrast, very little work has been done on the health effects of exposure to low indoor temperatures, and none on the best metric of this exposure, despite the fact that people have greater exposure to the indoor environment. The scarcity of studies on the association between indoor temperature and health is due to the difficulty in measuring indoor temperatures and health outcomes regularly and simultaneously over an extended time period.

Methods The Heating Housing and Health Study is an RCT which investigates the effect of installing heaters in asthmatic children's homes. It has detailed measurements of lung function (daily) and indoor temperature (hourly).

Lung function and indoor temperature were measured for 309 children over 12049 child-days. For four measures of lung function (PEFR morning, PEFR evening, FEV1 morning and FEV1 evening) we attempted to find the strongest association between exposure to low temperatures below particular thresholds averaged over various periods.

Results Indoor temperatures were found to have a small, but significant, association with short-term variations in the lung function in children with asthma. This association was greatest for temperatures below 11°C in the child's bedroom averaged over the preceding 11 days.

Conclusion These findings provide valuable information for future studies looking at the effects of low indoor temperatures on respiratory health.

04-1.3 OVERWEIGHT IN SHORT AND TALL CHILDREN

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Introduction It is known that body mass index is correlated with height. This suggests that the prevalence rates of overweight and obesity differ between tall and short children. Our aim is to study the impact of height during childhood on the national prevalence rates of overweight and obesity at childhood and adulthood.

Methods We used cross-sectional growth data from the previous two Dutch nationwide surveys performed in 1997 (n=14 500) and 2009 (n=10 129) and longitudinal data from birth to 18 y (n=708). We selected children from 2 to 10 y (before onset of puberty) from the two surveys. Overweight (including obesity) and obesity were calculated by cut-offs for body mass index (kg/m^2) according to International Obesity Task Force. Short was defined as <-1 SD and tall by $>+1$SD.

Results In 1997, the prevalence rates of childhood overweight and obesity were respectively 5.1% and 0.8% in short children, and 17.0% and 3.0% in tall children. In 2009, these figures were 6.9% and 1.1% in short children, and 22.9% and 5.5% in tall children. The RRs of childhood overweight and obesity of tall vs short children were respectively 3.3 (95% CI 2.6 to 4.2) and 4.4 (95% CI 2.4 to 7.9). However, these RRs were lower at adulthood, respectively 1.3 (95% CI 0.5 to 3.7) and 1.5 (0.98 to 2.2).

Conclusion There is a height bias in the prevalence of overweight and obesity. Correcting for height gives better insight into (inter) national comparisons and secular trends of overweight and obesity at childhood. We will present the figures and methodological explanation of the height bias.

04-1.4 NATIONAL INCOME AND INCOME INEQUALITY, FAMILY AFFLUENCE AND LIFE SATISFACTION AMONG ADOLESCENTS IN 35 COUNTRIES

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Introduction This study examines 13 year olds' life satisfaction cross-nationally and investigates variation in its relationship with family affluence, and the impact of national income and income inequality on this relationship.

Methods Data from the 2006 Health Behaviour in School-aged Children: WHO-collaborative Study (N =58 352 across 35 countries) were analysed using multilevel linear and logistic regression for outcome measures life satisfaction score and binary high / low life satisfaction.

Results National income and income inequality were associated with national mean life satisfaction score and prevalence of high life satisfaction. The relationship between life satisfaction and family affluence was curvilinear and varied cross-nationally, for example, family affluence was not related to life satisfaction in Denmark and France, while steep relationships were seen in England, Lithuania, Macedonia, Turkey and Romania. When the data were modelled simultaneously, GDP (PPP US$) and Gini were not in themselves associated with the life satisfaction, however this relationship varied depending on young people's relative affluence. Socioeconomic inequalities were greatest- steepest gradients were seen- in poorer countries (lower GDP (PPP US$) and in countries with unequal income distribution (higher Gini score).

Conclusions The data were collected prior to the global economic recession and therefore this study may have underestimated current socioeconomic inequalities in life satisfaction and international variation in inequalities. As adolescence is a critical period where many patterns of health and health behaviour are formed, this study highlights the importance of monitoring cross-national inequalities and identifying and addressing national mediating factors during this life stage.

04-1.5 MACRO-LEVEL DETERMINANTS OF HEALTH AMONG ADOLESCENTS IN WELFARE STATES: A MULTI-LEVEL ANALYSIS

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Introduction Previous studies have shown that macro-level factors, such as income inequality, wealth of countries or welfare state characteristics are crucial determinants of health and health inequalities among adults. So far, comparative research has rarely focused on children and adolescents. This study is among the first to examine whether different macro-level determinants are associated with differences in subjective health and socio-economic related health inequalities among adolescents in high-developed welfare states.

Methods Data were collected from the school based "Health Behaviour in School-aged Children"-study in 2005/2006, which includes 11- to 15-year old students from 27 European and North American countries (N=134.632), classified into five regimes (Scandinavian, Bismarckian, Liberal, Southern, Eastern). Hierarchical linear regression models were conducted for multiple complaints in health, including stepwise individual (family affluence) and