

Populations worldwide are seeing rising levels of obesity and its health consequences, particularly diabetes. Levels of childhood obesity are particularly high with concerns of how this will affect individuals' health and functioning in mid and later life. Such research questions are difficult to answer as ideally they require longitudinal studies of cohorts from birth or childhood through to later life, with consistent measures of obesity and functioning throughout. The first two presentations in this session use the unique UK birth cohorts, the 1946 National Survey of Health and Development (1946-NSHD) and the 1958 National Child Development Study (1958-NCDS) with a focus on poor physical functioning (PF, i.e. the ability to perform physical tasks of daily living) in later life. Poor PF was defined as the lowest (gender and cohort-specific) 10% on the Short-form 36 subscale at 60-64y (1946-NSHD) and 50y (1958-NCDS). The presentations explore (i) how the timing of onset and duration of obesity, from childhood through to mid-life, affects later life PF, and (ii) whether the relationship between obesity and PF is mediated by physical inactivity. In the final presentation we utilise a new dynamic micro-simulation model, the Population Ageing and Care Simulation (PACSim) which simulates the ageing of a base population of individuals aged 35 years and over from three longitudinal studies (Understanding Society, the English Longitudinal Survey of Ageing, and the Cognitive Function and Ageing Study II) to examine the extent to which reducing obesity in mid life could potentially reduce later dependency and care needs.

BIRTHWEIGHT, LIFETIME OBESITY, AND PHYSICAL FUNCTIONING IN MID-ADULTHOOD: A NATIONWIDE BIRTH COHORT STUDY

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Evidence is scant on long-term implications of body mass index (BMI) gains over the life-course for poor physical functioning (PF). Using the 1958 British birth cohort (N=8,674) we examine whether i) birthweight and BMI across the life-course; ii) BMI gains at specific life-stages; and iii) age of obesity onset, were associated with PF at 50y. At each adult age, obesity was associated with poor PF (e.g. for males at 23y adjusted-ORs for poor PF was 2.28(1.34,3.91)). BMI gains were associated with poor PF (e.g. for females, adjusted-OR per SD BMI gain 16-23y was 1.28(1.13,1.46)). Longer obesity duration was associated with poor PF (e.g. for males, adjusted-OR was 2.32(1.26,4.29) for childhood obesity onset, and 1.50(1.16,1.96) for mid-adulthood onset); associations were abolished with further adjustment for 50y BMI. Obesity, BMI gains, and earlier obesity onset were associated with poor PF in mid-adulthood reinforcing the importance of preventing obesity early in the lifecourse.

OBESITY AND MIDLIFE PHYSICAL FUNCTIONING IN TWO BRITISH BIRTH COHORTS: THE MEDIATING ROLE OF PHYSICAL INACTIVITY

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Associations between obesity and physical inactivity are bi-directional. Both are associated with physical functioning (PF) but whether obesity influences PF via inactivity is unknown. We investigated whether mid-adult obesity trajectories were associated with subsequent PF and mediated by inactivity in the 1946 National Survey of Health and Development (1946-NSHD; N=2,427) and the 1958 National Child Development Study (1958-NCDS; N=8,674). Estimated randomised-interventional-analogue natural direct (rNDE), indirect (rNIE) and total (rTE=rNDE+rNIE) effects of obesity trajectories on PF via inactivity are expressed as risk ratios. In 1946-NSHD, rTE of incident obesity at 43y (vs never) on poor PF=2.32(1.13,3.51); at 53y=1.53(0.91,2.15). rNIEs via inactivity were 1.02(0.97,1.07) and 1.02(0.99,1.04) respectively. Estimated rTE of persistent obesity from 36y=2.91(1.14,4.69), with rNIE of 1.03(0.96,1.10). Longer obesity duration was associated with increased risk of poor PF. Inactivity played a small mediating role. Findings reinforce the importance of preventing and delaying obesity onset to protect against poor PF.

WHAT IS THE EFFECT OF REDUCING OBESITY ON LATER-LIFE DEPENDENCY? FINDINGS FROM THE PACSIM MODEL

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Understanding the extent to which reducing obesity will help maintain independence in later life is of key importance in the goal to achieve healthy ageing. To investigate this we use a unique dynamic microsimulation model, the Population Ageing and Care Simulation (PACSim) model, formed from three Longitudinal studies: Understanding Society, the English Longitudinal Study of Ageing, the Cognitive Function and Ageing Study II; with the base population of 303,589 individuals aged 35 years and over (a 1% random sample of the England population in 2014). PACSim simulates the characteristics (sociodemographic factors, health behaviours including overweight and obesity, chronic diseases and geriatric conditions) of individuals between 2014 and 2040, with transition probabilities for characteristics estimated by modelling state changes from baseline to two-year follow-up in the combined studies. We estimate the effect of different strategies for obesity reduction on years spent independent from age 55 between 2015 and 2030.

SESSION 690 (SYMPOSIUM)

WE READ HIS PAL CARD AT THE FUNERAL: EVALUATING THE IMPLEMENTATION OF A PERSON-CENTERED COMMUNICATION TOOL

Chair: Katherine M. Abbott, *Miami University, Oxford, Ohio, United States*

Discussant: Howard Degenholtz, *University of Pittsburgh, Pittsburgh, Pennsylvania, United States*

This symposium describes the development and implementation of an interdisciplinary and novel person-centered