Background Due to its topography and history, Halton, Merseyside, provides a valuable natural experiment to investigate the divide between lay and official knowledge about environment and deprivation, and how these may influence health choices and outcomes.

Methods To gain a cross-section of the local population, households in every street in each of six predefined areas received an invitation. Fifty-five semi-structured interviews were carried out to assess residents' perceptions and experiences of health, environment and lifestyle. A life history approach was taken to examine health over time, and how lifestyle choices were constructed.

Interviews were taped, transcribed, and analysed for themes using a Structuration Theory approach. Residents' viewpoints were then presented to twenty local public organisation officials, whose own perceptions were also obtained.

Results While local residents were aware of health messages, these were adopted out of personal choice, not in order to accord with perceived edicts. Residents expressed scepticism about how official knowledge was constructed, and dismay that official knowledge viewed ill-health as the result of lifestyle rather than environmental or socio-economic factors.

There was a perception that enduring deprivation was sought to be maintained in order to attract funding which would benefit officials with vested interests who lived outside the borough and could therefore afford to be unconcerned about its problems.

An illustrative quotation from a resident is: *"Why kill the goose that laid the golden egg? Why get rid of poverty, deprivation and poor health when these big pots of money keep rolling in?"*.

Discussion Health messages, like other forms of knowledge, may be interpreted more from the presentation and perceived motivation for issuing the message than from the content of the message. Where there is a divide between lay and official knowledge, this motivation may be seen as a means of asserting power rather than either a scientifically-based or an altruistic programme of education or information.

If lifestyles are viewed by officials as the prime factor influencing an area's health profile, this view may be interpreted by lay knowledge as a means of social control meaning that the perceived root causes of socio-economic inequality need not be tackled, and that the priority of interventions is to maintain a privileged position.

P24 INDIVIDUAL FACTORS ASSOCIATED WITH SELF-REPORTED MEASURES OF COLD HOMES DURING WINTER

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Background An estimated 9000 people died during the winter 2014–2015 in England and Wales from living in a cold home. Older people are susceptible to cold, but it is unclear how to identify those who particularly find it hard to keep warm in winter. The aim of this study was to identify individual factors associated with self-reported measures of cold homes among older people.

Methods Data were from the British Regional Heart Study (BRHS) of older men, who were aged 74–95 when completing a questionnaire in 2014. This included four self-reported measures of cold housing during the previous winter (outcomes): (i) having difficulties in meeting the heating/fuel costs; (ii) staying in bed longer in order to stay warm; (iii) turning the heating off even when cold because of worries about the costs; (iv) keeping the living room comfortably warm. Individual data, including demographic characteristics, health and lifestyle factors were also collected. Cross-sectional associations between individual factors and measures of cold housing were analysed using logistic regression models.

Results Descriptive statistics showed that (i) 327 out of 1608 (20.6%) men had difficulties in meeting the heating/fuel costs; (ii) 210 (13.3%) stayed in bed longer in order to stay warm; (iii) 157 (10.2%) turned heating off because of worries about the costs, and (iv) 54 (3.4%) could not keep comfortably warm in the living room. In full adjusted logistic models, some individual factors were independently associated with the four outcomes ($p<0.05$): manual social class, having more financial difficulties, feeling isolated from others, and being not married. The relationship between reporting general financial difficulties and difficulties in meeting the heating/fuel costs was particularly strong (Odds Ratio [OR]=4.9, 95% Confidence Interval [CI] 3.9; 6.1). Also, men with mobility limitations were twice as likely to stay in bed longer in order to stay warm (OR=2.0, 95% CI 1.4; 2.9). Other individual factors, such as living in a house centrally heated and types of house insulation, as well as a proxy measure of the house energy efficiency (Energy Efficiency rating, aggregated from households within participants' Lower Super Output Area) were not related to self-reported measures of vulnerability to cold.

Conclusion Findings suggested that in older people financial difficulties and social class are key factors associated with cold housing in winter.

P25 FEASIBILITY CLUSTER RANDOMISED CONTROLLED TRIAL AND PROCESS EVALUATION OF AN ENVIRONMENTAL INTERVENTION IN NURSERIES AND A WEB-BASED HOME INTERVENTION TO INCREASE PHYSICAL ACTIVITY, ORAL HEALTH AND HEALTHY EATING IN CHILDREN AGED 2–4 YEARS: NAP SACC UK

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Background Systematic reviews have identified the lack of intervention studies to prevent obesity in young children. Most 3 year old children in the UK attend formal childcare, and the Government plans to extend free childcare to 30 hours per week for 3 and 4 year olds; therefore these settings present an opportunity to improve health. The Nutrition and Physical Activity Self Assessment for Childcare (NAP SACC) programme aims to improve child nutrition and

physical activity through changes to the nursery environment. Feasibility and acceptability have been demonstrated through Randomised Controlled Trials (RCT) in the USA. This study examined the feasibility and acceptability of adapting the NAP SACC intervention for the UK.

Methods A feasibility cluster RCT in 12 nurseries with 2–4 year olds in the southwest region of England. Focus groups and interviews with Health Visitors (community children's nurses), nursery staff and parents informed adaptation of the intervention for the UK. The intervention comprised: two staff workshops on physical activity and nutrition; Health Visitor support to review nursery practices against 80 areas of best practice, set goals and make changes; a digital media-based home component. Measures were assessed at baseline and post-intervention: zBMI, accelerometer-measured physical activity and sedentary time, diet, child quality of life, health care usage, parental and nursery staff mediators and quality of nursery environment. Fidelity and acceptability were assessed through observation and interviews analysed via thematic analysis.

Results Formative work resulted in the following adaptations: inclusion of an oral health component; changes to confirm with UK guidance; specialist workshop facilitators; and development of the home component. 168 (37%) eligible children were recruited from 12 nurseries. Interviews were completed with four Health Visitors, 17 nursery staff and 20 parents. The intervention was implemented with high fidelity, with two exceptions: one nursery did not implement the intervention due to staff workload; and the digital home component was used by just 12 (14%) parents. Intervention acceptability was high. A mean of seven staff per nursery attended each workshop. The workshops and Health Visitor contact were highly valued. The mean number of goals set was eight. Nursery changes included: menu modifications, reducing portion sizes and sugary snacks, role modelling physical activity and eating, and active story telling. The trial design and methods were highly acceptable. Descriptive analysis of the outcomes will be available by September 2017.

Conclusion NAP SACC UK is feasible and acceptable with the exception of the home component; effectiveness should be tested through a full-scale RCT.

P26 ASSOCIATIONS BETWEEN TYPOLOGIES OF NEIGHBOURHOOD ENVIRONMENTS AND ASSOCIATIONS WITH OBESITY: A CROSS-SECTIONAL STUDY

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Background Recent research has demonstrated that neighbourhood features such as fast-food outlets and supermarkets may co-occur. However, little research has investigated the combined influences of both the built food and physical activity (PA) environments and associations with body mass index and obesity. This study aims to use latent class analysis within a large UK adult population to investigate associations between the combined environment and obesity.

Methods Cross-sectional, individual-level data (n=22,889) from Wave 1 of The Yorkshire Health Study (2010–2012) were used. Body mass index (BMI) was calculated using self-reported height and weight; obesity=BMI≥30. Neighbourhood was defined as a 2 km radial buffer; food outlets and physical activity facilities were sourced (2012) from Ordnance Survey Points of Interest (PoI) and categorised into 'fast-food', 'large supermarkets', 'convenience and other food retail outlets' and 'physical activity facilities'. Parks were sourced from Open Street Map. Latent class analysis (LCA) was conducted on these five environmental variables. Logistic regression was then conducted to predict obesity based on the five neighbourhood types identified within LCA. Models adjusted for age, gender, ethnicity, area-level deprivation and rural or urban classification of the neighbourhood.

Results A five-class solution fitted the dataset best and was interpretable. Neighbourhood typologies were labelled as; "low exposure" (19.0% of study population); "moderate exposure" (33.3%); "moderate PA, limited food" (12.2%); "saturated" (13.6%); "moderate PA, ample food" (21.2%). For associations with obesity, those within the low exposure typology were chosen as the exposure because low exposure to physical activity environments have the potential to reduce physical activity behaviours and although more debatable poorer access to the food environment may result in poorer dietary intake. Compared to the low exposure, one typology showed lower odds of obesity ("saturated", OR=0.86 [0.75,0.99]) and one showed increased odds of obesity ("moderate exposure, OR=1.18 [1.05,1.32].

Discussion Meaningful neighbourhood typologies were derived from a range of food and physical activity measures using latent class analysis which explained differences in obesity in large UK based sample of adults. This study suggests that neighbourhoods were not wholly unhealthy or healthy, they were characterised by neighbourhood features that are both health-promoting and health-constraining and this resulted in complex associations with obesity.

P27 CAN WE BETTER CAPTURE LONGITUDINAL EXPOSURE TO THE NEIGHBOURHOOD ENVIRONMENT? A LATENT CLASS GROWTH ANALYSIS OF THE OBESOGENIC ENVIRONMENT IN NEW YORK CITY, 1990–2010

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Background The growing availability of (non-)commercial historical datasets opens a new avenue of research on how long-term exposure to the neighbourhood environment affects health. However, traditional tools for longitudinal analysis (e.g. mixed models) are limited in their ability to operationalise long-term exposure. This study aims to summarise longitudinal exposure to the neighbourhood using latent class growth analysis (LCGA). Using the National Establishment Time-Series (NETS) 1990–2010, we analysed the trajectory of change in New York City (NYC) in the number of unhealthy food businesses – a potential indicator of an obesogenic environment.