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Summary of research

Key words: Diet, Weight, Neighbourhood, Exposure, London, Policy

Application Lay Summary:

1a: It is hypothesised that the distribution of food outlets in our towns and cities is related to diet and health. However, the scientific evidence base regarding these neighbourhood food environment effects on individuals remains equivocal. It is also unclear whether existing methods of capturing food environment exposure are able to reveal heterogeneity in urban areas considered 'saturated'. This study will explore potential saturation in food outlet exposure in Greater London, and will examine the extent to which neighbourhood access to food outlets is associated with diet quality, body weight and odds of overweight/obesity in adults.

1b: One of UK Biobank's principal aims is the prevention of serious disease. Obesity is a risk factor for multiple chronic conditions, including type 2 diabetes, coronary heart disease and stroke. Modifying neighbourhood food access to promote healthier diets and maintenance of healthy weight may therefore represent a viable strategy for improving population health. However, considering the increased emphasis in recent years on evidence-based UK public health policy, it is important that we understand if and how food environments

influence behaviour and health in this context.

1c: We will begin by interrogating established built environment measures of food access, already calculated by food outlet type using accurate data from UKMap, for 52,360 adult UK Biobank participants located within Greater London. We will describe exposures to different types of food outlet for the study sample, drawing on precedent from New York City, which has a similarly high population density and potentially saturated food retail environment. Assuming exposure heterogeneity, we will then relate food outlet exposures to frequency of takeaway food consumption, body weight (body mass index and percent body fat) and odds of being overweight and obese.

1d: We wish to study UK Biobank participants in Greater London only (n=52,360). Our sample is limited to those individuals in Greater London because built environment variables regarding food outlet exposure are only available for these participants. Unlike many other areas of the UK, London is unique in its high population density and potentially saturated food retail environment.