

Higher exposure to takeaway food outlets could double the odds of being obese

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People exposed to takeaway food outlets around their home, at work and on their way to work are more likely to consume more of these foods, as well as being more likely to be obese, suggest a paper published in *BMJ* today.

During the past decade in the UK, consumption of food away from home has risen by 29% while the number of takeaways has increased dramatically. This, the researchers say, could be contributing to rising levels of overweight and obesity.

Despite increasing policy focus, identifying the association between exposures to unhealthy neighbourhood food outlets, diet and body weight has proved challenging.

Researchers from the University of Cambridge looked to examine the extent to which exposure to takeaway food outlets in home and non-home environments was associated with eating takeaway foods, BMI and likelihood of being overweight or obese.

They used data from the Fenland Study - a population based cohort study of adults aged 29-62 in 2011, in Cambridgeshire, UK, conducted by the MRC Epidemiology Unit. Data on 10,452 participants were available, with 5,442 participants eligible for their study. Only adults working outside the home were included.

In addition to food outlets within home and work 'neighbourhoods', the

study also accounted for takeaways around commuting routes between home and work. Commuting routes were modelled according to mode of travel using the shortest distance along the street network between home and work addresses.

Analyses allowed for a wide range of factors known to be associated with risk of obesity: age, sex, total household income, highest educational qualification, car ownership, total energy intake, smoking status and physical activity energy expenditure. Physical activity was objectively assessed in the Fenland Study using combined heart rate sensors and accelerometers wearable devices to measure body movement).

Using data from food frequency questionnaires, the researchers estimated grams of daily intake of pizza, burgers, fried food (for example fried chicken) and chips, as a marker of takeaway food consumption.

As a second outcome, the researchers looked at average body mass index, which they calculated from measured height and weight, and odds of being overweight and obese, based on World Health Organization definitions.

Results showed that individuals were exposed to 48% more takeaway outlets at work than at home. The average exposure combining home and work neighbourhoods and commuting routes was 32 outlets.

Among domains at home, at work, and along commuting routes, associations between takeaway exposure and diet were strongest in work environments, with evidence of a dose-response relationship. Combining the three domains (work, home and commute) there was evidence of a positive and significant dose-response relationship between takeaway outlet exposure and takeaway [food consumption](#). The most exposed

group of people consumed an additional 5.7 grams per day compared with the least exposed group.

Associations between BMI and exposure to takeaway food outlets were equally consistent. The group most exposed to takeaway [food outlets](#) in all environments combined were estimated to have a BMI 1.21 greater than those least exposed, with evidence of a dose-response effect. Those most exposed overall were also almost twice as likely to be obese, compared to those least exposed.

This kind of population study cannot prove a causal link between environments and obesity. However, in this, the first study of takeaway food outlet exposure at home, at work and during the daily commute, the researchers found an "environmental contribution to the [consumption](#) of takeaway foods, and especially to body mass index and the odds of being obese". They suggest that policies designed to improve diets through restricting takeaway food availability would be most effective if focused around workplaces.

In an accompanying editorial, Kathryn Neckerman from the Columbia Population Research Center in New York says that studies like this clarify "when, where, and for whom the food environment matters". She says it is still unclear whether efforts to restrict takeaways will have any impact on obesity and that they are "difficult to enact". She adds that restricting outlets could have cost as well as benefits – they provide entry-level jobs and ease the lives of busy families. She concludes that instead of trying to replace these outlets, we should "seek to transform [them]" and that "in the food environment, what matters is the menu – what [food](#) is offered, at what price – not the venue".

More information: Study paper: Associations between exposure to takeaway food outlets, takeaway food consumption, and body weight in Cambridgeshire, UK: population based, cross sectional study, *BMJ*,

2014.

Editorial: Takeaway food and health, *BMJ*, 2014.

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