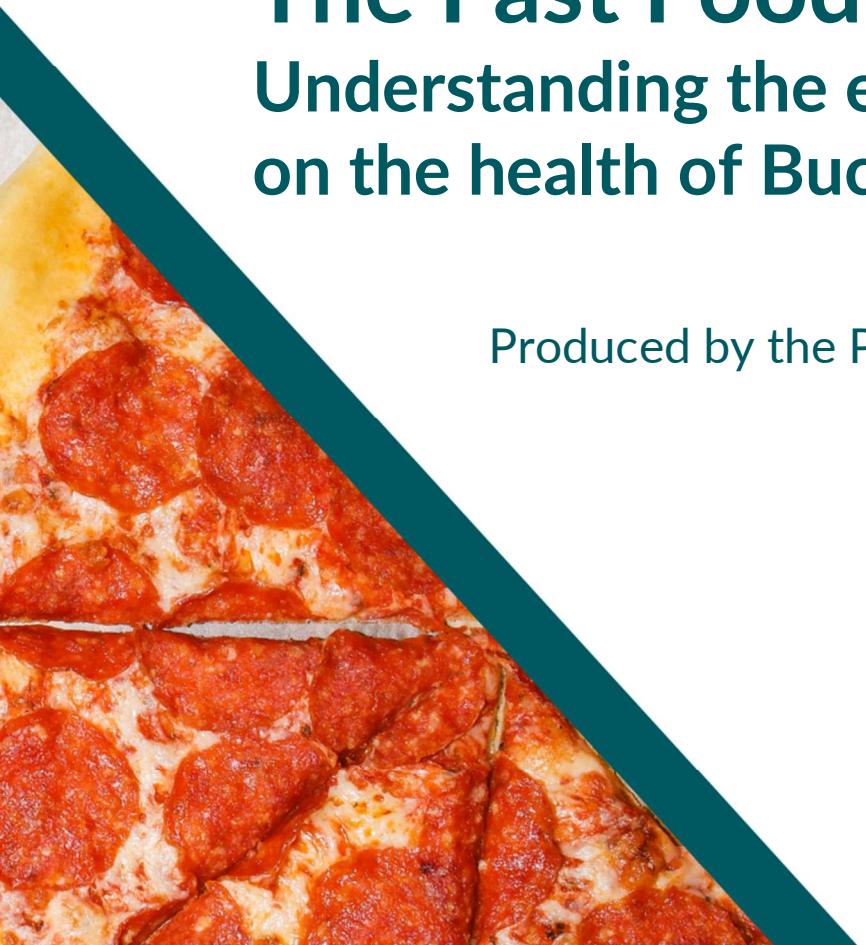
The Fast Food Report

Understanding the exposure of fast food outlets on the health of Buckinghamshire residents.



Produced by the Public Health Team, 2023

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Introduction

Poor diet is one of the biggest risk factors for preventable death and poor health in the UK.[1] Nationally, the *Government Food Strategy* and obesity policies seek to improve population diet and reduce obesity prevalence by reducing the consumption of food and drink that are high in calories, and high in fat, sugar or salt (HFSS).[2,3,4]

Whilst there are multiple factors that contribute to obesity, an unhealthy diet is the most significant risk factor, with excess calorie consumption the main driver of population increases in obesity prevalence.[5,6,7]

In Buckinghamshire, the leading causes of premature death, disease and health inequalities are associated with higher consumption of high calorie and HFSS foods and drinks.[8] [9] Key health priorities within the *Joint Local Health and Wellbeing Strategy 2022 to 2025* are*:* obesity in children and young people; adult obesity; cardiovascular disease (CVD); and reducing health inequalities.[10]

People's surroundings impact their dietary intake and influence their food choices.[11,12,13] Currently, many food environments in the UK make it difficult for people to make healthy choices and maintain a healthy weight due to the widespread availability of cheap, highly palatable, heavily promoted, energy-dense, HFSS and nutrient-poor foods.[14,15]

Within the food environment, fast food outlets (FFOs) have been identified as a source of HFSS food and drinks, which may contribute to poor health outcomes and health inequalities.[16,17,18,19,20] This report provides evidence on how the distribution of fast food outlets in Buckinghamshire may impact on residents' health and proposes actions to improve the food environment.

What's wrong with fast food?

Many people enjoy eating fast food, but fast food is high in calories, fat, sugar and salt (HFSS) and eating it too often is associated with poor diet, adult obesity, child obesity, cardiovascular disease and type 2 diabetes.[21,22,23,24]

On average, meals eaten out of the home, such as hot food takeaway meals, have twice the number of calories compared to food prepared at home.[25] At a population level, adults are consuming 200-300 excess calories each day and children who are above a healthy weight, consume up to 500 calories more than they need each day.[26]

Fast food is often hyperpalatable, with flavours, textures or additives that mean people are likely to eat more of it. Research shows that hyper palatability of foods may lead to excessive calorie intake and weight gain.[27]

Fast food is usually high in saturated fats and salt, which are risk factors for cardiovascular disease. Excess salt consumption increases the risk of high blood pressure, which is the main risk factor for CVD mortality and morbidity in the UK.[28]

How often is too often?

Research shows that eating fast food once a week or more puts people, including children and young people, at risk of poor diet, obesity and diet-related disease.[29,30,31] A UK study found that children aged 9–11 years who ate takeaway meals at least once per week were more likely to have poor diets, unhealthy cholesterol levels and higher fat mass with "potential adverse longer-term consequences for obesity and coronary heart disease risk".[32]

What is exposure to fast foods outlets?

FFOs are hot food takeaway shops and fast food restaurants, such as chip shops, burger bars and pizza shops, that sell hot food which is high in fat, sugar and salt (HFSS).[33] They serve food quickly and offer the convenience, affordability and appeal that drives consumer food behaviour.[34,35,36]

People encounter FFOs in their local neighbourhoods, on the way to and from school, commuting to work, in town centres and the places people go to shop, play, be entertained and eat out. The outlets people encounter across the day is their exposure. This exposure influences what people eat and buy.[37]

FFOs have come to dominate the retail food environment. Between 1995 and 2007 there was a 45% increase in the number of FFOs, followed by a 34% increase between 2010 and 2018. Since 2018, there have been 3% annual increases in the number of FFOs. [38,39] One in four places to buy food is now a FFO.[40] This increase in the number of FFOs in England has changed the food environment and increased the populations' exposure to FFOs.

Why does exposure matter?

National health and obesity policies have raised concerns about the rapid and continual increase of FFOs in our communities and the impact on population health. These policies consistently encourage local authorities to take action to reduce exposure to fast food.[41,42,43,44]

These concerns are based on research which shows that people who have more FFOs in their local environments are likely to eat fast food more often, have poor diets and be at a higher risk of obesity and diet-related diseases.[45,46,47] [48]These relationships have been found where FFOs are found near schools, homes, and workplaces, on commutes, and cumulatively across the day. [49,50] There is particular concern that the increasing density of FFOs in the most deprived neighbourhoods, and near schools, coupled with advertising of fast food and other HFSS foods and drinks, is widening health inequalities and contributing to child obesity.[51,52,53]

Leading UK Research

The Centre for Diet and Activity Research (CEDAR) at Cambridge University, was established as a Public Health Research Centre of Excellence.[55] It has undertaken large-scale research projects on the impact of FFO exposure on UK adult population health.[56,57,58] They have repeatedly found that increases in FFO exposure correspond with increases in fast food consumption, BMI (Body Mass Index) and risk of obesity, with worse outcomes for people on low incomes. Figures 1 and 2 below, are examples of findings from CEDAR studies which show that the highest FFO exposure (Q4) is associated with higher fast food consumption and body mass index (BMI) compared with the least exposure (Q1).[59,60] These relationships suggest higher exposure is more likely to lead to people eating more fast food and being overweight or obese.

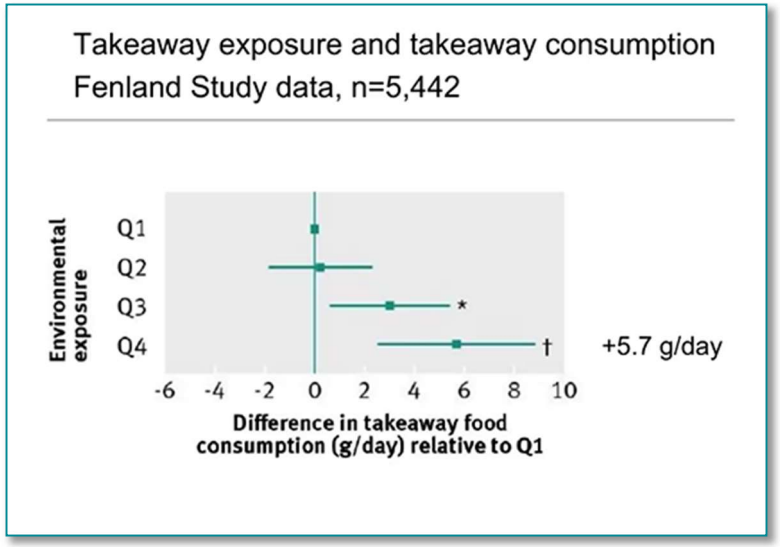


Figure 1: MRC Epidemiology Unit, Burgoine T, et. al (2014) [54]

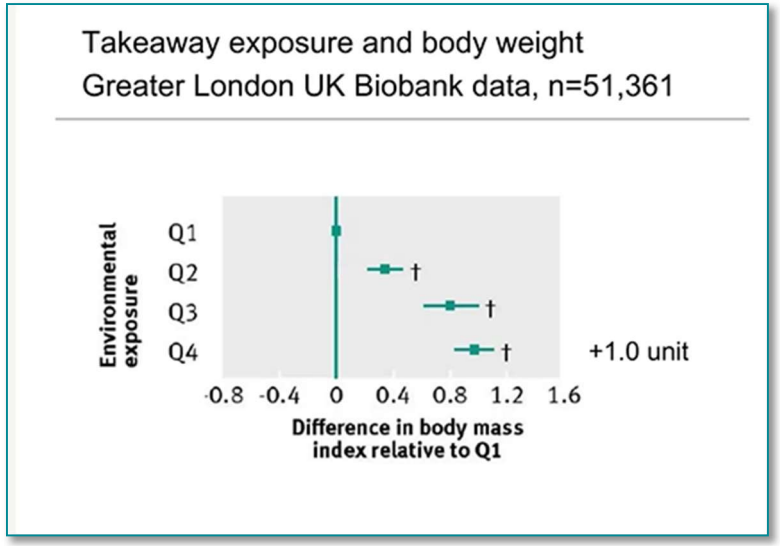


Figure 2: MRC Epidemiology Unit, Burgoine T, et. al (2018) [61]

Exposure and health inequalities

Research shows that people from lower socio-economic status (SES) backgrounds and those living in more deprived neighbourhoods are disproportionately affected by fast food exposure.[62,63,64]

Many people living in areas of deprivation have higher exposure to FFOs with a corresponding risk of poor diet and poor health outcomes. There are five times more outlets found in more deprived areas compared to least deprived areas in England.[65] This means that people facing the biggest barriers to an affordable, healthy diet, also face the most challenging food environments.

Additionally, research shows the health effects of exposure are amplified for people from lower SES backgrounds.[66,67,68] A large UK study found that "although exposure to fast food outlets affected all socioeconomic groups, those of a lower SES consumed consistently more fast foods, tended to have higher body weights, and were more likely to be obese." The researchers suggested that the lack of resources and the challenges of living on low incomes make some people more vulnerable to these unhealthy food environments.

> The proliferation of FFOs on high streets and near schools, and the dominance of unhealthy food marketing in many public spaces contribute to local environments "that make it harder for children and their families to make healthy choices, particularly in some of our most deprived areas."
>
> The *Childhood Obesity: A Plan for Action, Chapter 2, (2018)* [69]

Exposure and children & young people

There is a growing body of evidence that shows FFOs near children's homes and schools are associated with children and adolescents eating fast food more often, having poorer diets, higher BMIs and higher obesity prevalence. [70,71,72,73,74,75,76,77]

A recent study of 8,253 UK children examined the impact of increases in FFO exposure over time. It found that even small increases in the number of FFOs in local neighbourhoods and within 400m, 800m and 1600m of schools resulted in increases in fast food consumption, BMI and obesity.[78] For example, the study reported that a small increase of FFOs within 800m of a school corresponded to a 4% increase in prevalence of overweight among children.

Evidence suggests that the effects of FFO exposure are more pronounced for children from the most deprived communities and from the lowest SES backgrounds as well as those with lower emotional regulation (which includes a lower ability to control impulsive behaviour).[79,80,81,82] Research shows that children with greater access to FFOs are more likely to gain significant amounts of weight between Reception and Year 6.[83]

It should be noted that not all studies have reported a relationship between FFO and poor health outcomes. However, a systematic review of FFO exposure suggests methodology challenges can prevent the identification of existing relationships.[84]

Are these health issues relevant to Buckinghamshire?

FFO exposure may impact on diet-related conditions identified as key priorities in *Buckinghamshire's Joint Local Health and Wellbeing Strategy 2022 to 2025*.[85] The following overview of these health priorities outlines their prevalence and impact on residents' health and wellbeing. More detailed evidence is available in the Joint Strategic Needs Assessments.[86]

Cardiovascular disease

CVD causes 1 in 5 of all deaths in Buckinghamshire. It is also a leading cause of premature death with more than one in five deaths from CVD occurring in people under 75 years of age in 2020. It is the largest contributor to the gap in life expectancy between people living in the most deprived and least deprived areas.[87]

Adult obesity

Consistent with national trends, overweight and obesity is a major health concern in Buckinghamshire. More than 60% of adults are overweight and 21.4% of adults are living with obesity. The physical and psychological risks associated with adult obesity are set out in the JSNA topic report. These risks include premature death, cardiovascular disease, diabetes, musculoskeletal disorders and 13 cancers including the three most common cancers in Buckinghamshire (breast, colon and pancreatic cancer)[88] [89] [90] Furthermore, obesity in people age over 50 years, increases the risk of dementia by 34%.[91] In Buckinghamshire, obesity related hospital admissions per 100,000 population have more than doubled over the past 10 years.[92]

People trying to lose weight report that their efforts are undermined by the constant effort of navigating the food environment and the availability and accessibility of HFSS foods in our environments.[93]

The costs of obesity

Direct costs

Obesity costs the NHS £6.5 billion[94]

Labour markets costs [95,96]

Obesity costs the UK £74 billion in combined healthcare and labour market costs which include:

- Reduced productivity
- Increased absenteeism
- Increased unemployment
- Reduced likelihood of being in the labour force
- Early retirement

Type 2 diabetes

Obesity is a key risk factor for developing type 2 diabetes.[97] Figure 3 shows that the prevalence of type 2 diabetes increases as deprivation increases across neighbourhoods in Buckinghamshire.

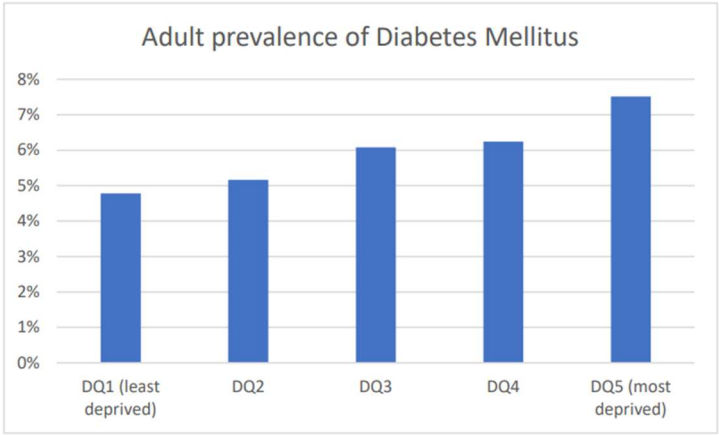


Figure 3: Estimates of adult prevalence of type 2 diabetes by deprivation quintile in Buckinghamshire. [98]

The Government Food strategy sets a national ambition for a 50% reduction in childhood obesity by 2030,[99] however, in Buckinghamshire, child obesity rates are increasing.

Child Obesity

In Buckinghamshire, child obesity rates are high and increasing.[100] In 2021-2022, nearly 1 in 5 children started school above a healthy weight and a third of children leave primary school overweight or obese.[101] Overweight and obesity prevalence is much higher in some ethnic groups and increases with level of deprivation.

In the least deprived areas of Buckinghamshire 11% of children were obese in Year 6, compared to 25% in the most deprived areas in 2021/22. In contrast to current obesity prevalence, less than 2% of children aged 5-10 years were obese in England in 1985.[102]

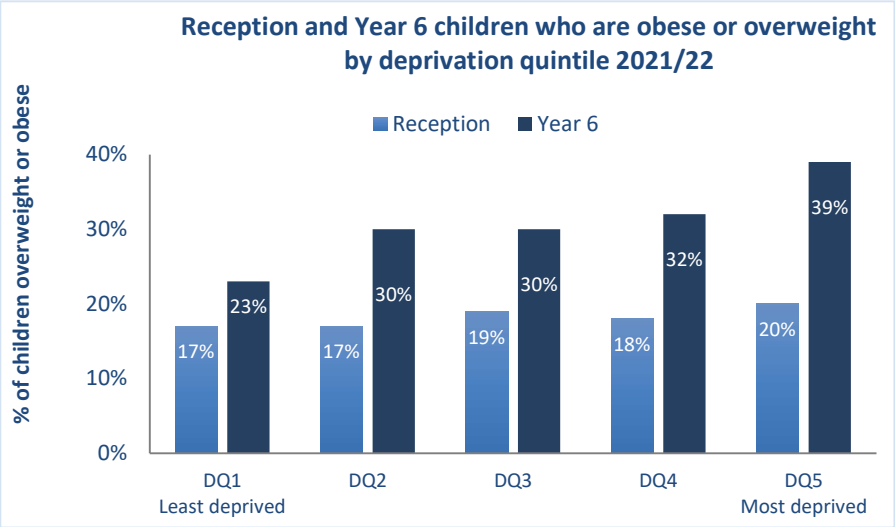


Figure 4: Child overweight and obesity for Reception and Year 6 children in Buckinghamshire 2021/22

Figure 4 shows the combined prevalence of child overweight and obesity by level of deprivation for the school years Reception and Year 6.[103] It shows that more children become overweight or obese as they progress through primary school. This trend is markedly more pronounced with increasing levels of deprivation.

Impact of child obesity.

Obesity in childhood can impact on both physical and mental health as outlined in Figure 5.[104] Childhood obesity can also impact on learning. It is associated with higher school absence, poor academic performance and lower educational attainment.[105] The main risk of child obesity and overweight is the high likelihood of becoming obese in adulthood, with the resultant risks of poor health and premature death.

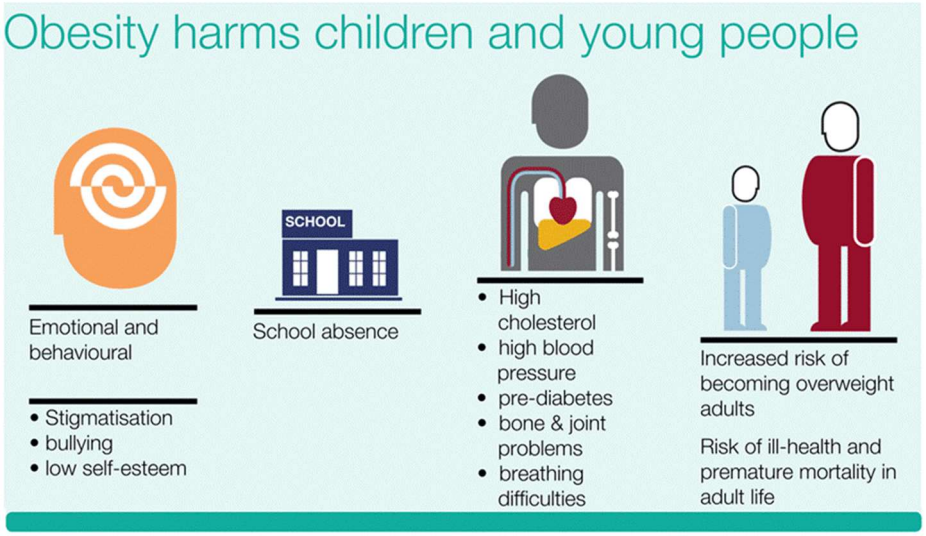


Figure 5: Office for Health Improvement and Disparities [106]

Where are the fast food outlets in Buckinghamshire?

There have been a number of national projects to map FFOs across the UK.[107,108] In 2017, Public Health England (PHE) mapped the density of FFOs across England at local authority and ward level. This evidence served to inform local authorities' whole systems approaches to obesity, local food strategies and planning policies.

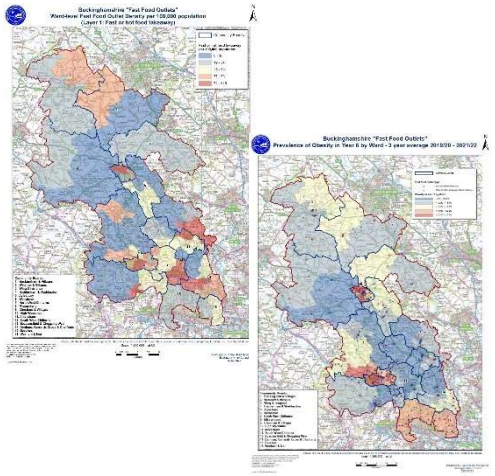
These findings were referenced in the Buckinghamshire *Director of Public Health Annual Report 2018, Healthy Places, Healthy Futures*.[109] The data is now out of date and does not reflect local ward boundaries.

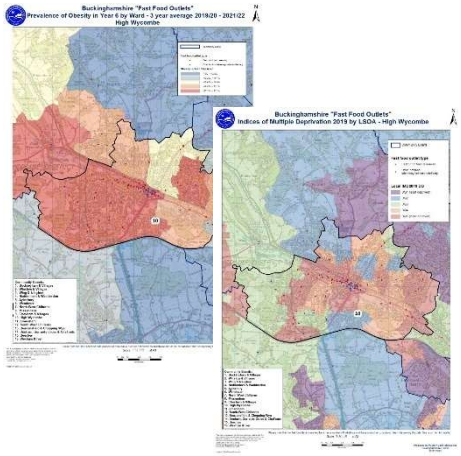
Local mapping aim and scope

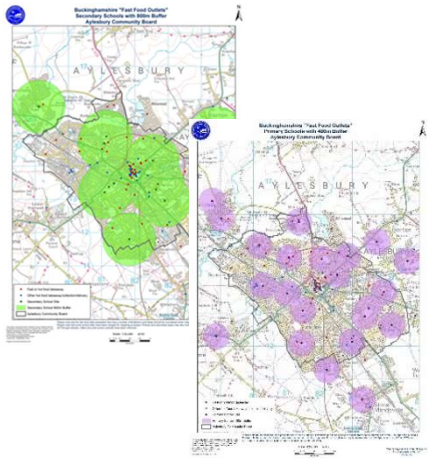
A local mapping project was undertaken to understand how current exposure to FFOs may impact on the health and wellbeing of Buckinghamshire residents, with a focus on child obesity and deprivation.

This project aimed to identify areas of Buckinghamshire where the density, concentration or distribution of FFOs may impact on health and wellbeing and contribute to health inequalities. The density of FFOs was calculated by ward and the distribution of FFOs was mapped against deprivation, child obesity and proximity to schools.

The purpose of the project was to inform Buckinghamshire's *Whole System Approach to Obesity*, and the *Opportunity Bucks – Succeeding for all initiative* [110] which seeks to improve opportunities in wards where health, work and education outcomes are poorer. These ten wards are located across Aylesbury, Wycombe and Chesham.







Identifying fast food outlets

The first step in the project was to identify FFOs in Buckinghamshire. There is no national or local database which records FFOs and no standardised means of identifying them. The methodology used in this project was similar to the PHE's fast food density mapping in 2017 which selected relevant food business categories and applied search terms to the Food Standards Agency (FSA) *Food Hygiene Rating Scheme* (FHRS) database to identify FFOs.[111,112] See Appendix 1 for further details.

The FFOs identified included hot food takeaway outlets (HFTO) such as burger bars, kebab and fried chicken shops, fish and chip shops and pizza outlets and 11 well-known national and international fast food chains. It also included mobile catering businesses (with addresses) and other catering businesses selling fast food.

A total of 347 FFOs were identified in Buckinghamshire which represented the most likely sources of fast food in Buckinghamshire and reflected the types of outlets used in research on FFO exposure.[113,114,115]

This FFO total is likely to underrepresent the true number of FFOs in Buckinghamshire as non-chain fast food restaurants were not able to be identified due to limitations of the FHRS database. (See Database limitations).

Database limitations

The FHRS database is the most reliable and spatially accurate database of food businesses and is recommended for use by local authorities to map their food environments.[116] However, it does have limitations.

Firstly, the food business categories in the database are based on business type not nutritional quality or the food offer. The database enabled extraction of Hot Food Takeaway Outlets (HFTO) and fast food restaurant chains which predominantly sell high calorie HFSS food and drinks.[117,118] However, there may be exceptions within the HFTO category, with some businesses offering a healthier menu.

Secondly, the FHRS database offered no practical means of distinguishing non-chain fast food restaurants from other restaurants in the FHRS database. Therefore, only fast food chain restaurants were included in the mapping. Non-chain restaurants that serve fast food and provide convenient, rapid counter service characteristic of FFOs, in addition to their sit-down service were not included.

This project used postcodes rather than exact geographic coordinates for location. Local insight should be used when interpreting local data to account for the generalised locations.

Which places have the most exposure in Buckinghamshire?

The density of FFOs in Buckinghamshire, as a measure of exposure, was calculated and mapped by ward. Density was calculated as the number of FFOs per 100,000 people. Buckinghamshire's average density was 61.3 FFOs per 100,000. (For comparison to other counties see page 16.)
The density map for Buckinghamshire (figure 6) shows the wards with highest density (shaded in red) which includes town centres and wards within Aylesbury and Wycombe.

The wards with the highest fast food densities were distributed across seven Community Boards, mainly in the south of Buckinghamshire: Amersham; Aylesbury; Chesham Villages; High Wycombe; South West Chilterns; Beaconsfield; and Denham, Gerrards Cross and Chalfonts.

Wards with the highest FFO density are listed in the table below. A full list of FFO density by ward is available in Appendix 2.

Ward	Number of FFO per 100,000 population
Abbey*	339.8
Aylesbury North*	325.6
Gerrards Cross**	196.8
Booker, Cressex and Castlefield*	149.3
Chess Valley	144.1
Amersham and Chesham Bois	113.6
Aylesbury North West*	109.8
Bucks FFO average	61.3
* denotes an Opportunity Bucks ward	
** includes Beaconsfield Services	

Figure 7: Wards with the highest FFO density in Buckinghamshire.

Figure 6: Buckinghamshire Fast Food Outlet Density: Ward-level FFOs per 100,000 population

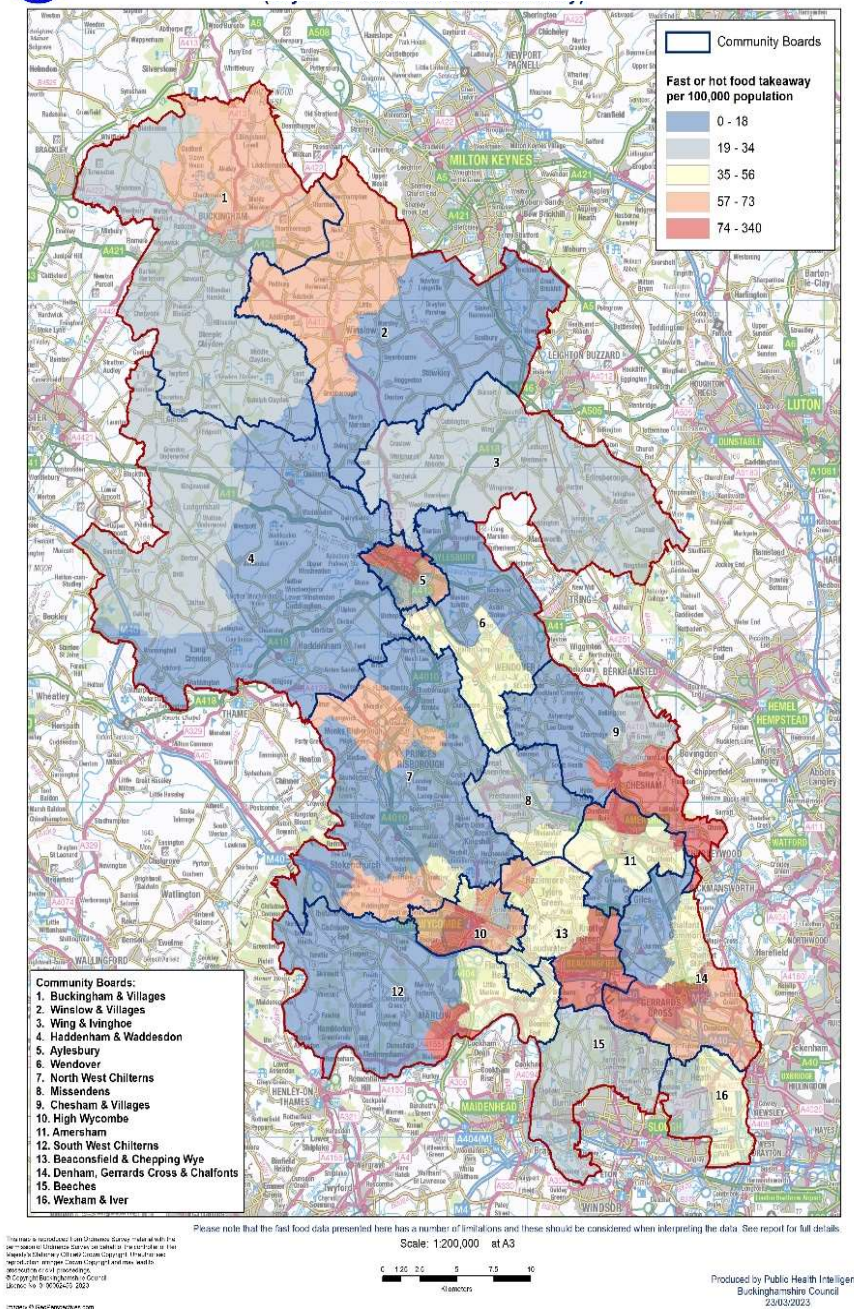
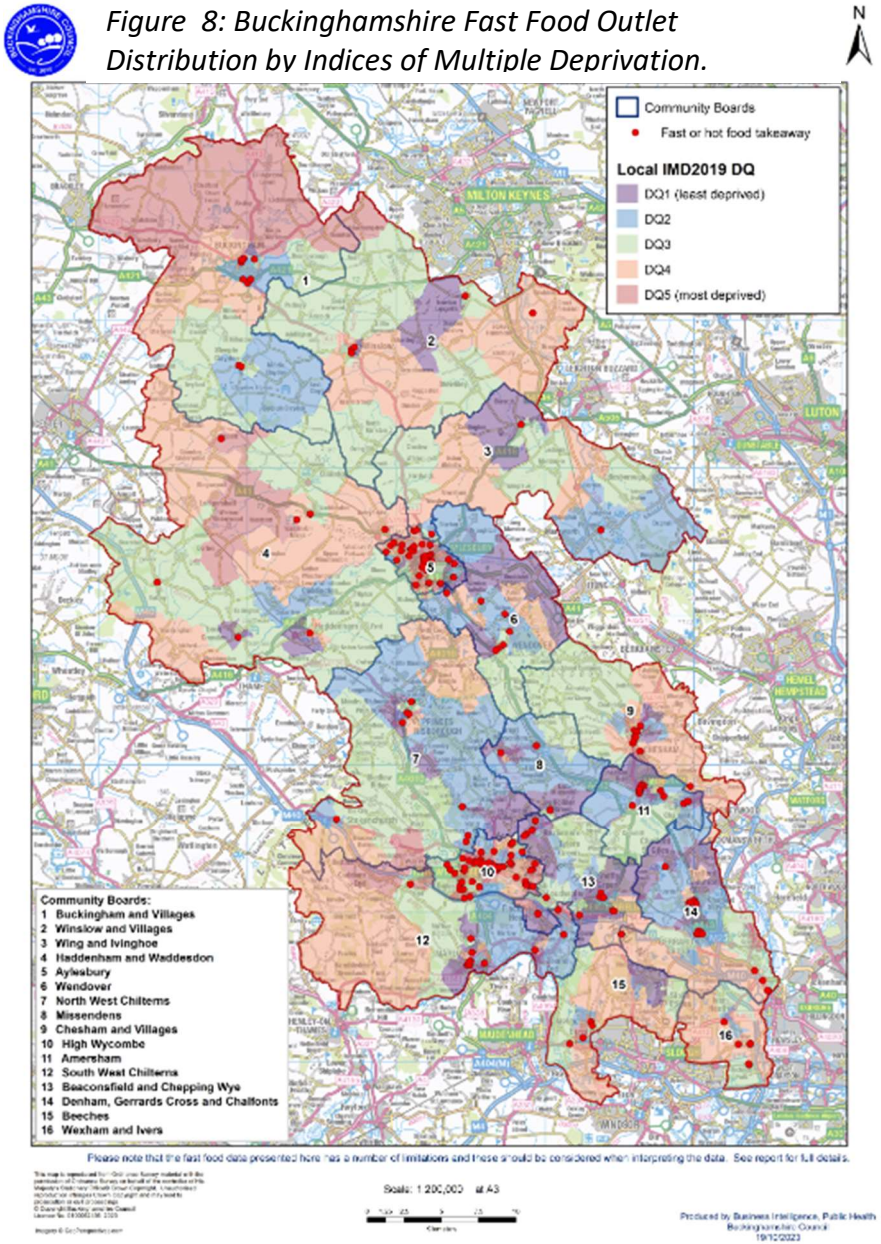


Figure 8: Buckinghamshire Fast Food Outlet Distribution by Indices of Multiple Deprivation.



Is there more exposure areas of high deprivation and child obesity?

Deprivation

Evidence suggests that people living in the most deprived wards in Buckinghamshire have higher exposure to FFOs.

Four of the wards with the highest density of FFOs are *Opportunity Bucks* wards which experience have high levels of deprivation. Abbey and Aylesbury North, with over 300 outlets per 100,000 people, had more than five times the density of FFOs compared to Buckinghamshire's average of 60.3 FFOs per 100,000.

Figure 8 shows the distribution of FFOs across Buckinghamshire against levels of deprivation. The red markers show the postcode locations of FFOs. The shading on the map shows the level of deprivation using the Indices of Multiple Deprivation (IMD) scores. [1] The red shaded areas have the highest levels of deprivation. The high concentrations of FFOs were in Aylesbury and Wycombe, both of which have high levels of deprivation.

Child obesity

The distribution map of FFOs relative to year 6 child obesity prevalence (using children's weight measurement programme data, 2022)[119] were similar to the findings for deprivation. This was expected as child obesity prevalence and deprivation are highly correlated.

The highest concentrations of FFOs were in Aylesbury and Wycombe, both which have high Year 6 child obesity prevalence.

[1] Refer to Appendix 1 for descriptions of LSOAs, IMD and child obesity measures used in this report.

Local concentration of FFO in local areas of deprivation and high child obesity prevalence

Figure 9 provides a photographic representation of an area of FFO concentration in Cambridge Street, Aylesbury. Cambridge Street is located in an *Opportunity Bucks* ward, with high deprivation and child obesity prevalence and has a high concentration of FFOs within a 350m section of the street as depicted below.

Figure 9: Photographic representation of the fast food environment in a 350m section of Cambridge Street, Aylesbury

Are fast food outlets near Buckinghamshire's schools?

Approximately one third of primary schools (31%) and secondary schools (35%) had at least one FFO within 400m of their school. Most primary schools (59%) and almost all secondary schools (92%) had at least one FFO within 800m. A much higher percentage of schools within Opportunity Bucks (OB) wards had at least one FFO within 400m and 800m (see Figure 10).

	At least one FFO within 400m	At least one FFO within 800m
Primary – Non-OB ward	16.4%	39.4%
Primary – OB ward	**65.2%**	**82.6%**
Secondary -Non-OB ward	27.4%	93.1%
Secondary – OB ward	**70.0%**	**100.0%**

Figure 10: Comparison of primary schools in Opportunity Bucks (OB) and non-OB wards with at least one FFO within 400 and 800m.

Why do these distances matter?

The distances of 400m and 800m are standard distances used in research to measure FFO exposure around schools and the associated health impact.[120] These distances are also used in planning policies to restrict the proliferation of FFOs around schools.[121] These distances equate to walking times of approximately five and ten minute walking times respectively. [122]

A Brighton and Hove study found large volumes of pupils were leaving school premises at lunchtime and purchasing a variety of HFSS foods and drinks, such as chips, soft drinks and chocolate from hot food takeaway premises, newsagents and supermarkets. Students would travel up to 800m to access these products and sometimes further.[123]

Concentrations around schools

Some children attend schools in Buckinghamshire where many FFOs are in close proximity.

- 15 primary schools had at least one FFO within 400m
- 24 primary schools had at least five FFOs within 800m.
- 9 secondary schools in Buckinghamshire had at least three FFOs within 400m
- 24 secondary schools within 800m had three or more FFOs within 800m.

Some schools had an extremely high density of FFOs and thus exposure, particularly if they were located near town centres. There were up to 19 FFOs within 400m of schools and up to 43 FFOs within 800m of schools. A list of schools with the highest number of FFOs in close proximity to schools is in Appendix 3. Please note the considerations when interpreting data.

Understanding school neighbourhood food environments

An incidental finding from local site visits in Buckinghamshire suggests children purchase fast food on the way home from school, as well as other HFSS food and drinks from other retailers. This observation is consistent with research which shows that convenience stores and supermarkets near schools are a source of HFSS food and also contribute to poor diet and child obesity.[124]

Local insight can contribute to understanding local FFO exposure patterns and how this may influence children's fast food purchasing behaviour. For example, travel routes to school or physical barriers may increase or reduce exposure. Councils have undertaken audits and qualitative studies to gain local insight on how young people interact with FFOs around schools.[125] [126] [127]

An example of local fast food exposure in Cressex Community School neighbourhood, High Wycombe

The fast food environment surrounding Cressex Community School, a secondary school in Wycombe, provides an example of FFO exposure in close proximity to schools. It is located in the ward with the highest level of deprivation in Buckinghamshire. The photographic representation of the neighbourhood (figure 11) includes FFOs within a 5-10 minute walk of the school. It also includes exposures to other HFSS food and drinks outlets in the local environment, with local stores prominently selling or advertising these products. This school awards house points if students do not bring fast food into school.

Area Profile.

Ward: Booker, Cressex and Castlefield

Ward deprivation: IMD score 22 (highest in Buckinghamshire**)**

Ward Year 6 child overweight and obesity: 42.5%
(2nd highest in Buckinghamshire)

Figure 11: Photographic representation of FFO exposure around Cressex Community School.

Summary of findings

- FFOs are not distributed equally across Buckinghamshire. Density of FFOs was higher in town centres and wards within Aylesbury and High Wycombe with high deprivation and child obesity prevalence (year 6).

- Highly localised concentrations of FFOs were identified in areas with high levels of deprivation and child obesity prevalence (year 6). Furthermore, these high concentrations were located in close proximity to schools.

- Many schools have a FFO within 400m and most schools have a FFO within 800m. There is significant variation in the number of FFOs near schools, with some schools having up to 19 FFOs within 400m and 43 FFOs within 800m.

- A higher percentage of schools within OBs wards have at least one FFO within 400m and 800m, when compared to schools within non-OB wards. Four times as many primary schools within OB wards have at least one FFO within 400m compared to primary schools within non-OB wards.

- Local site visits suggest children purchase fast food after school, as well as other HFSS food and drink.

Does this mean fast food outlets cause obesity in Buckinghamshire?

Obesity is caused by an extremely complex interaction of biology and behaviour, within a cultural, environmental and social framework.[128] There is no single cause or single intervention to reduce prevalence of adult or child obesity. At a population level, research and local evidence can identify factors that may contribute to population obesity, and other diet-related diseases, and identify how best to address them.

What do the findings mean for Buckinghamshire?

Health impact

Drawing on research findings on the relationship between fast food consumption, poor health and local exposure patterns in Buckinghamshire, findings suggest the following:

- *Poor diet:* The exposure of Buckinghamshire residents to FFOs is likely to contribute to poor diet, and diet-related disease, particularly in areas where there is a higher density of FFOs in local neighbourhoods.

- *Health inequalities:* The higher density of FFOs in areas of deprivation and the higher FFO exposure of pupils attending schools in OB ward is likely to contribute to health inequalities in Buckinghamshire, particularly in relation to child obesity, adult obesity, cardiovascular disease and diabetes.

- *Child obesity*: The distribution of FFOs around both primary and secondary schools is likely to contribute to excess fast food intake and child obesity in Buckinghamshire. Other retailers near schools may also be contributing to excess HFSS food and drink consumption.

Buckinghamshire's Council priorities

The findings from this report suggest that the current food environment within Buckinghamshire is likely to undermine ambitions within the *Corporate Plan to* improve the health and wellbeing of Buckinghamshire residents, reduce gaps in health outcomes and enable and promote healthier lifestyles. It is likely to have a negative impact on the health priorities within *Buckinghamshire's Joint Local Health and Wellbeing Strategy 2022 to 2025*.[129]

The current fast food environment is likely to make it more difficult for people engaged in Buckinghamshire's health, weight management and lifestyles programmes to make and sustain healthy diets and improve their health.

Improving the food environment and taking action to reduce exposure to FFOs is consistent with the Buckinghamshire's strategic vision, *Succeeding as a Place: Achieving our Shared Vision for Buckinghamshire to 2050*, which highlights a growing need for a healthy built and natural environment and seeks to create places that foster healthy behaviours and tackle health inequalities.[130]

Comparisons with other counties

Buckinghamshire's average density of FFOs was 61.3 outlets per 100,000 people. With no recent national studies, varying methodologies in previous studies and changes to ward boundaries, there is currently no directly comparable data to current findings. This report compares FFO exposure within Buckinghamshire and serves to highlight large inequalities within the county, rather than act as a comparator to other counties. Differences in exposure of residents to FFOs is considerable with FFO density by ward ranging from zero to 339.8 FFOs per 100,00 people.

The most similar national study to this report is the 2017 PHE study which showed a similar pattern of distribution to Buckinghamshire, with higher densities of FFOs in areas of deprivation.[131] The PHE study reported that the density of FFOs in local authorities ranged from 26 to 232 per 100,000 people, with a national density rate of 96.1. FFO densities reported for former Buckinghamshire districts were: South Bucks (75.9); Wycombe (67.9); Aylesbury Vale (58.6); and Chiltern (49.4). As the PHE study included more restaurants within its criteria, their density rates would be higher compared to the current mapping project. Despite this, some of Buckinghamshire's most deprived wards, in Aylesbury and Wycombe, exceeded this national average by more than three times. It is anticipated that a national online mapping tool, will become available in future and enable comparisons across counties.[132]

What action can we take?

A review of national obesity and planning policies, evidence, best practice and the application of behavioural science was undertaken to identify interventions that could be adopted in Buckinghamshire to reduce the impact of fast food exposure, without exacerbating existing health inequalities. Findings from the review were as follows:

Recommended approach

1. **Use a combination of approaches** to reduce the impact of fast food exposure, implemented as part of a whole system approach to obesity and food.[133]

2. **Take a population approach** which focuses on changing population behaviour or food intake rather than relying on every individual to have capacity to change.[134]

3. **Target interventions** to specially address FFO exposure. Whilst increasing access to healthy food may be an intuitive response to FFO exposure, evidence suggests this approach does not buffer against the negative health impacts of FFO exposure.[135]

4. **Use behaviour change science** to identify interventions that are most likely to be effective.[136,137] In applying the Behaviour Change Wheel (figure 12) to fast food exposure in Buckinghamshire, the approaches most likely to be effective were identified as those which: reduce exposure of FFOs; restructure the food environment; and reduce prompts for consumption of fast food.[138]

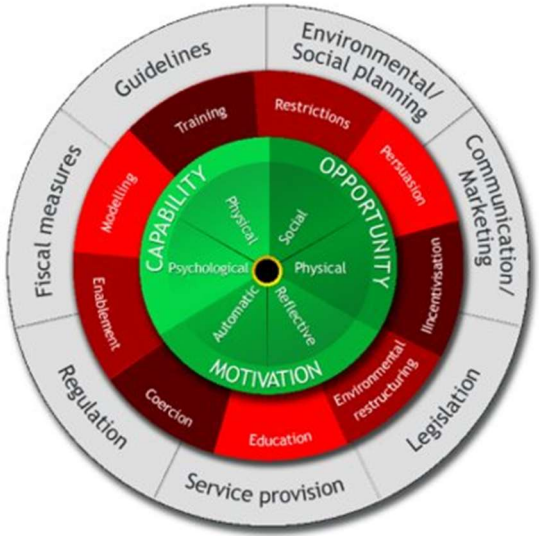


Figure 12: Diagram of the Behaviour Change Wheel

> Priority should be given to policies that "make minimal demands on individuals and have the potential for population-wide reach so as to maximize their potential for equitable impacts."
>
> Theis , D.R.Z. and White, M. (2021) [139]

5. **Make it easy** for all residents.[140] Use strategies that require minimal effort from individuals to benefit from the intervention.

   Low demand interventions that do not rely on individual's time, attention, skills, knowledge, money, planning and other personal resources to make improvements to health are more likely to be effective and reduce health inequalities.[141] An example of this is the sugar reduction strategy which reduced the amount of sugar in breakfast cereal and yoghurts by 13% without requiring people to change the product they normally buy and eat.[142]

   Conversely high demand interventions, when used in isolation, can widen inequalities.[143,144] Approaches such as promotion, advice, guidance, education and encouragement rely heavily on individuals' capacity to notice, read, engage and understand the information and have the opportunity to act upon it. Barriers may include cost, access or competing priorities. High demand interventions can widen health inequalities because those with the least personal resources, who are more at risk of poor health, are less able to engage with and benefit from these interventions, even when highly motivated.[145]

Five key levers for action

National guidance *'Encouraging healthier 'out of home' food provision'* identifies five key levers that local authorities can use to address fast food exposure as part of a whole systems approach to obesity and food.[146]

Figure 13: Five key levers for action on FFO exposure

"Efforts to improve diets and health through neighbourhood-level FFO regulation might be effective across socioeconomic groups and may serve to reduce observed socioeconomic inequalities in diet and obesity. "*Burgoine et, al, 2016.*[147]

What are the intervention options?

This overview of intervention options presents strategies that have been implemented by other Local Authorities in attempts to improve the food environment. They are well supported by policy, toolkits, nutrition guidance and best practice examples.

Planning policy

Using planning policy to restrict new FFOs, through *Hot Food Takeaway* (HFT) policies within Local Plans or Supplementary Planning Documents (SPD), is the most widely implemented strategy in England and is strongly supported by policy and guidance.[148,149,150,151] These policies may serve to reduce socioeconomic inequalities in diet and health.[152]

These HFT policies are tailored to meet local needs and may include restrictions:

- around schools (usually 400m or 800m)
- in areas of deprivation
- in areas with high child obesity prevalence
- in areas with over-concentration or a high density of FFOs

Some policies include town centres and others do not
(further information on planning policy is provided on page 21).

Other planning policy options are:

- Section 106/ Community Infrastructure Levies (CIL) on new FFOs
- planning approval conditions such as restrictions on hours of trade e.g. before and after school;
- implementing a requirement for rapid Health Impact Assessments (HIA) for HFT proposals.

Contracts and leasing

The Local Government Association's *Healthier Food Procurement,*[153] outlines a range of ways Local Authorities can ensure contracts and leases reduce exposure to FFOs and other HFSS foods and drinks. These may include street trading license restrictions near schools, and catering standards for council contracts where businesses are providing food on council land or through council-funded programmes such as catering services, on-site cafes or vending machines. The *Government Buying Standards for Food and Catering Services nutrition criteria* is the recommended reference for these interventions.[154]

Local Authorities, such as Greenwich, Bristol, Barnsley, Brighton and Hove and Luton have used Trading Standards, *Nutrient Profiling Technical Guidance* to introduce healthy advertising standards on council owned buildings or advertising contracts.[155.156] Three-quarters of adults would like their local council to restrict unhealthy food and drink advertising near schools and playgrounds.[157]

Community partnerships

Improving food environments requires action and engagement from "the public sector, voluntary and community groups, and businesses, and advocates to reduce diet-related ill health and inequality, while supporting a prosperous local food economy."[158] Anchor institutions, such as councils and the NHS, are well placed to lead the way. Other local partners can identify approaches within their sphere of influence such as community sports sponsorships or through the identification and support of specific at risk groups.

Healthy catering schemes

These schemes, such as award programmes, training, supply chain support and good food retail initiatives, encourage and support local fast food businesses to improve their nutritional offer, reduce calorie and HFSS content in food (e.g., reduce portion size, modify cooking techniques) and promote healthier fast food.
These initiatives are often guided by *Healthier Catering Guidance for Different Types of Businesses 2019*, which includes specific advice for different food outlets e.g., Indian and South Asian, Chinese, pizza, sandwich shops.[159]

School food policy

Schools can implement strategies to reduce exposure to FFOs such as: stay-on-site policies at lunchtime; banning fast food deliveries to school gates; discouraging children from consuming fast food on the way to and from school; and improving the food offer within school. Ideally, these are implemented as part of a whole school approach to healthy eating and embedded in a school food policy.

What actions are other councils taking?

Barking & Dagenham has a £1000 **levy** on new hot food takeaway outlets to be allocated towards initiatives to tackle childhood obesity.

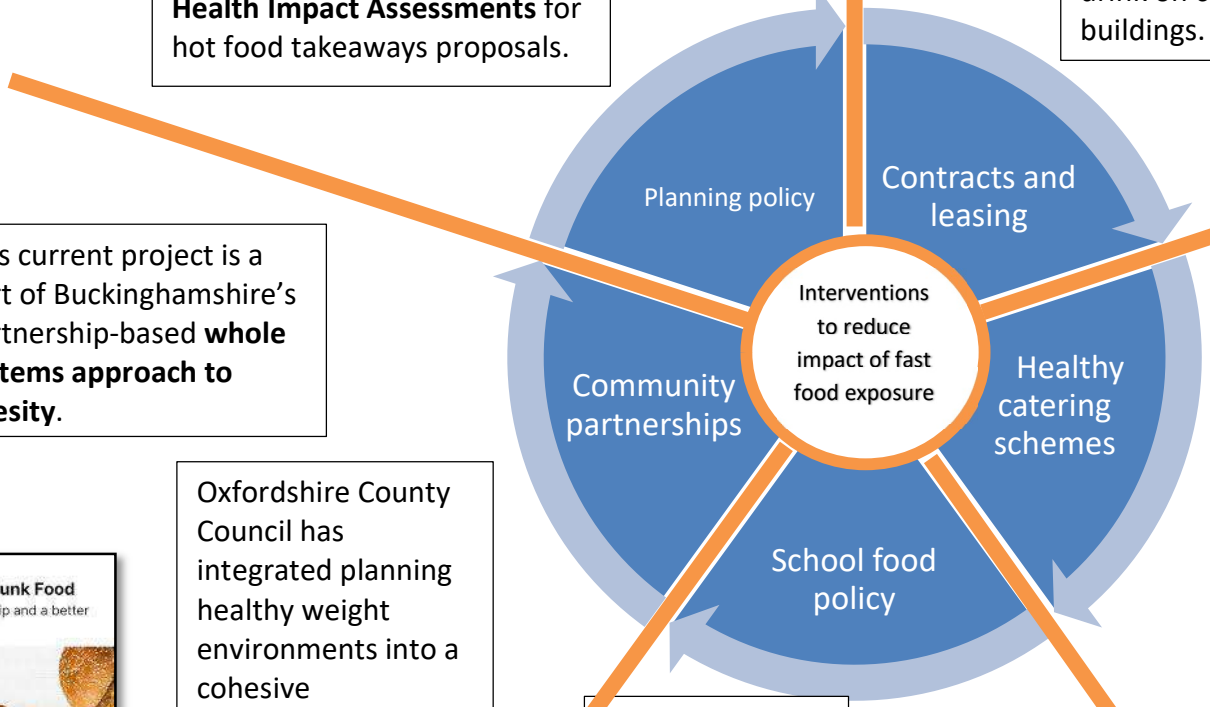
Gateshead Council **Hot Food Takeaway SPD** decreased FFO density by 12.45 per 100,000 population, which did not increase retail vacancy rates.

West Sussex Council has introduced nutritional standards for **catering contracts** including new tenders and extended contracts.

Luton Council has introduced a **healthy advertising policy** to ensure businesses only advertise health food and drink on council-owned buildings.

Rochdale Council has implemented a 100m restriction zone around schools for **street trading licenses**.

Tower Hamlets Council includes **Health Impact Assessments** for hot food takeaways proposals.



This current project is a part of Buckinghamshire's partnership-based **whole systems approach to obesity**.

The Healthier Catering Commitment across Greater London **helps businesses** to make small changes to the way they cook and serve food to offer healthier options and reduce HFSS content.

Oxfordshire County Council has integrated planning healthy weight environments into a cohesive partnership-based **food strategy** which enables partners to take coordinated action on food.

Durham City Council Healthy Options Takeaway (HOT) **Award**, supports and encourages businesses to make small, healthier changes to their food offer.

HEALTHIER CATERING COMMITMENT for London

CHEFS IN SCHOOLS

Leeds Council supports a Healthy Schools programme to support a **whole-school approach** to food.

Hertfordshire County Council initiated a county-wide catering service to provide healthy school and college meals.

Why are Hot Food Takeaway Planning policies widely used?

National planning policy guidance provides a strong mandate to restrict FFOs to prevent the over-concentration of FFOs and support population health.[160,161] Hot food takeaway planning policies (HFTPP) have been shown to be effective in reducing FFO exposure by preventing new outlets in targeted areas and reducing over-concentrations and clustering.[162,163,164] By 2018, over 50% of councils had implemented HFTPPs to restrict FFOs, and local authorities continue to introduce them.[165]

There is no standard policy to restrict FFOs. HFTPPs are informed by: national planning policy guidance and legislation; national and local public health policy and tools; precedents; research and a local evidence base. Precedents show current research is sufficient to uphold local planning decisions.[166] Local evidence enables the HFTPP to be tailored to local needs and is important in developing and justifying effective and robust policies.[167,168] Effective and robust policies can restrict FFOs, where intended, and enable council decisions to be upheld at appeal.

Local evidence is important in justifying the HFTPPs. Local data, such as provided in this report, can be used to inform a HFTPPs. Other data such as nutritional analysis of local FFOs and local community insight on the impact of FFOs on maintaining a healthy weight, is also beneficial to justify HFTPPs.

Using the planning system to promote healthy weight environments, developed by Public Health England, helps support local authorities to develop HFTPs which take "proportionate actions to protect vulnerable and at-risk groups, such as young children, from less healthy environments."[169] It provides standard policy templates and case studies on local authority planning policy and decisions to support the development of effective and robust HFTPs.[170]

Planning policy and guidance

National planning policy clearly articulates the role of local planning authorities in creating healthy places and provides a strong mandate for using regulations to reduce the proliferation of FFO.

The *National Planning Policy Framework* (NPPF) states that planning policy and decisions should "*aim to achieve healthy, inclusive and safe places that... enable and support healthy lifestyles, especially where this would address identified local health and well-being needs*".

The Planning Practice guidance advises that, when justified, planning policy and proposals may need to regard:

- Areas with high levels of obesity
- Areas with high deprivation, health inequalities or general poor health
- Proximity to locations where children and young people congregate such as schools, community centres and playgrounds
- Over-concentration of certain uses within a specified area
- Odours and noise impact, traffic impact, refuse and litter.

Partnerships

The HFTP are usually developed in partnership by planning and public health teams to ensure the policies reflect both priority health needs and wider planning considerations.

Developing recommendations for action

Service areas represented in the collaborative development of the recommendations for action

- Public health
- Planning Policy
- Development Management
- Economic Development
- Regeneration
- Children's Services
- Trading standards
- Environmental Health
- Wycombe Community Board
- Aylesbury Community Board
- Communities – Culture Sport and Leisure
- Communities – Neighbourhood Services
- Community Support - Food

Who can make a difference?

Influencing local food environments to improve population diet requires "a collaborative approach, with effective partnerships and co-ordinated action at a local level across the public, private and voluntary sectors, with councils taking this forward through their leadership."[171]

To facilitate this collaboration, findings from this report including policy, evidence and local FFO mapping was shared with council officers, representing a range of service areas, at a cross directorate workshop.

This workshop enabled wider perspectives on FFOs to be considered. These included the benefits of FFOs such as employment opportunities, increased footfall in retail areas, choice and enjoyment. Negative local considerations included impact on health and diet, public realm (including litter, anti-social behaviour and shuttered up shops during the day), challenges faced by some schools, and loss of retail diversity through over-concentration of FFOs.

Through this collaborative process an extensive list of recommendations was developed, to reduce HFSS in the food environment and reduce exposure to FFOs in Buckinghamshire. These recommendations across six themes (See Figure 14) are underpinned by partnership working, and will be integrated into actions within the *Whole Systems Approach to a Healthy Weight*.

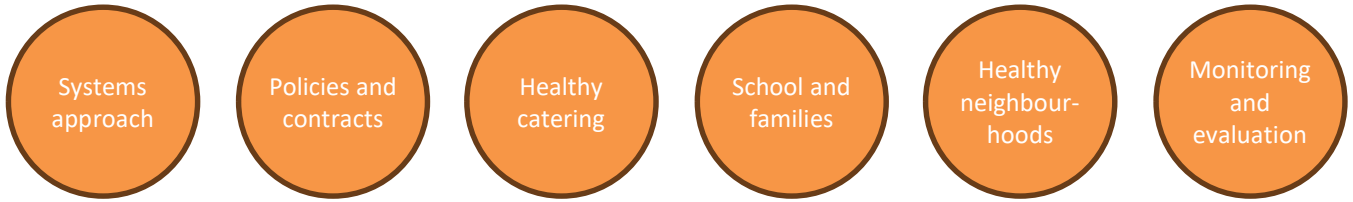


Figure 14: Recommended areas for action

A final note

This report is limited to examining the evidence base for FFOs and interventions to reduce health impacts related to exposure. The evidence and recommendations address one aspect of a highly complex food system and food environment which influences population diet and health. This report should be considered within the broader context of the food environment in which, it is easier and cheaper for people to eat HFSS foods and drinks. This is compounded by the increased cost and reduced affordability of a healthier diet.[172] It is often people with the lowest incomes, living in more deprived areas that are more likely to experience both food insecurity and diet-related chronic diseases.[173]

Appendix 1: Report measures

The following measures were used for Buckinghamshire's fast food mapping project.

Index of Multiple Deprivation (IMD)*:* The English IMD is the official measure of relative deprivation for small areas (Lower Super Output Areas) in England.[174] It measures deprivation across seven domains: income, employment, education, health, crime, barriers to housing and living environment. The IMD ratings for LSOAs in Buckinghamshire were mapped according to centile rankings.

Year 6 Child Excess Weight: Year 6 obesity and overweight prevalence was measured using year 6 ward level data from the National Child Measurement Programme.[175] The prevalence was calculated using 2021/22 data as 3 year averages were impacted by covid-related school closures.[176]

400m and 800m measures: Distances around schools were measured as a circular radius from the school postcode.

Fast food outlets.

The method used to identify FFOs in Buckinghamshire was similar to the PHE's national mapping of FFO conducted in 2017. Inclusion and exclusion criteria were applied to different business types within the FSA's *Food Hygiene Rating Scheme* (FHRS) database as outlined in the table.[177] To identify FFOs within broad food business type categories, search terms were applied to the registered food business name.

The key search terms were adopted from the PHE's 2017 FFO national mapping project. They were: "burger", "chicken", "chip", "fish bar", "pizza", "kebab", "india", "china", "chinese" * In addition "fish" was added to the search list.

Table: Inclusion and exclusion criteria applied to the FHRS database to identify FFOs*

Business type	Inclusion
Distributors/Transporters	Remove fully
Farmers/growers	Remove fully
Hospitals/Childcare/Caring Premises	Remove fully
Hotel/bed & breakfast/guest house	Remove fully
Importers/Exporters	Remove fully
Manufacturers/packers	Remove fully
Mobile caterer	Include via key search terms
Other catering premises	Include via key search terms and major chains
Pub/bar/nightclub	Remove fully
Restaurant/Cafe/Canteen	Include major chains only*
Retailers - other	Include major chains only
Retailers - supermarkets/hypermarkets	Include major chains only
School/college/university	Include major chains only
Takeaway/sandwich shop	Include fully

*These criteria matched the PHE 2017 study with the exception of the restaurant/canteen/café business type. PHE applied the nine key fast food search terms in addition to the major chains within this category. However, in Buckinghamshire these terms were not commonly used in food restaurants names. There were 415 non-chain restaurants identified in Buckinghamshire, but the PHE methodology identified less than 5% as FFOs. A sense check of the data showed many more had characteristics of a FFO but there was no practical means of distinguishing them from other restaurants.

Appendix 2: Density of FFO by ward (Number of FFOs per 100,000 population):

The 10 wards with the highest FFO density are highlighted red, and the 10 wards with the lowest in each category are highlighted green. The 10 Opportunity Bucks levelling up wards are ***bold-italic.*** Local insight should be used in interpreting this data.

Ward name	FFOs per 100,000 people
Abbey	***339.8***
Amersham and Chesham Bois	113.6
Aston Clinton and Bierton	7.2
Aylesbury East	71.7
Aylesbury North	***325.6***
Aylesbury North West	***109.8***
Aylesbury South East	25.8
Aylesbury South West	***26.6***
Aylesbury West	17.4
Beaconsfield	80.6
Bernwood	18.4
Booker, Cressex and Castlefield	***149.3***
Buckingham East	69.6
Buckingham West	34.1
Chalfont St Giles	17.9
Chalfont St Peter	54.5
Chesham	***18.6***
Chess Valley	144.1
Chiltern Ridges	0.0
Chiltern Villages	17.8
Cliveden	28.3
Denham	59.4
Downley	48.8
Farnham Common and Burnham Beeches	31.7
Flackwell Heath, Little Marlow and Marlow South East	45.0
Gerrards Cross	196.8
Great Brickhill	16.5
Great Missenden	19.8
Grendon Underwood	34.4
Hazlemere	73.4
Iver	55.5
Ivinghoe	26.7
Little Chalfont and Amersham Common	45.2
Marlow	81.5
Penn Wood and Old Amersham	46.5
Ridgeway East	9.6
Ridgeway West	9.3
Ryemead and Micklefield	***69.7***
Stoke Poges and Wexham	19.3
Stone and Waddesdon	12.7
Terriers and Amersham Hill	***63.9***
The Risboroughs	58.2
The Wooburns, Bourne End and Hedsor	35.5
Totteridge and Bowerdean	***33.7***
Tylers Green and Loudwater	53.3
Wendover, Halton and Stoke Mandeville	40.2
West Wycombe	***56.6***
Wing	32.6
Winslow	59.3
Buckinghamshire average	**61.3**

Appendix 3: Schools with the highest number of fast food outlets in their neighbourhood

Please note: There are a number of considerations when interpreting this data and local intelligence should be used to understand the local fast food environment around individual schools. Firstly, the 400m and 800m radius is measured from the school postcode and does not take in to account school entrance and exit points or geograohic barriers such as major roads or rivers. In addition, some schools, such as grammar and special schools have wider catchment areas , with many children taking public tranport or being driven to school. These children would have different exposures to FFO on their journey to and from school. Exposure may also be influenced by school policy as children in schools without stay-on-site policies at lunchtimes would have significantly higher potential exposure during the day. Finally, the limitations of the fast food database may lead to local anomolies (see Database Limitations).

Primary schools with the highest number of FFO within 800m	FFO
Hamilton - Priory Avenue Junior site	43
High Wycombe CE Combined	43
Stocklake Park Community and Chiltern Way Academy (Bierton)	39
Elmhurst	31
Oakridge	22
Hamilton - Hamden Road Infant site	18
Chepping View Primary	15
Chiltern Wood (Cressex site) and Kite Ridge	14
Beechview	10
Buckinghamshire Primary PRU - Woodland site	10
Haydon Abbey, Buckinghamshire Primary PRU (Pathways), Aspire	10

Primary schools with the highest number of FFOs within 400m	FFO
Hamilton - Priory Avenue Junior site	19
Stocklake Park Community and Chiltern Way Academy (Bierton)	12
Chalfont St Peter CE	6
Bedgrove Junior	4
Haydon Abbey, Buckinghamshire Primary PRU (Pathways), Aspire	4
Hazlemere CE Combined	4
High Wycombe CE Combined	4
Holy Trinity CE	4

Secondary schools with the highest number of FFOs within 400m	FFO
Stocklake Park Community and Chiltern Way Academy (Bierton)	12
Dr Challoner's Grammar	10
Haydon Abbey, Buckinghamshire Primary PRU (Pathways), Aspire	4
John Hampden Grammar	4
Wycombe High	4
Aylesbury Grammar	3
Beaconsfield	3
Cressex Community	3
Sir William Borlase's Grammar	3

Secondary schools with the highest number of FFOs within 800m	FFO
Stocklake Park Community and Chiltern Way Academy (Bierton)	39
Aspire (Secondary PRU) - Wycombe Grange site	29
Buckinghamshire University Technical College	27
Aylesbury Grammar	16
Chiltern Wood (Cressex site) and Kite Ridge	14
Dr Challoner's Grammar	12
Chesham Grammar	10

This document has been produced by Suzi Watson and Frances Mason from the Wider Determinants Team, Public Health Team, Buckinghamshire Council, 2023.

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Images: Attribution Takeaway food icons set flat vector. Vecteezy.com

Addendum: How often do children eat fast food?

Results from the 2023-2024 Buckinghamshire Children and Young People's Survey was used to explore the relationship between fast food exposure, deprivation and fast food consumption in Buckinghamshire. This survey was developed by the Schools Health Education Unit (SHEU) in partnership with Buckinghamshire Council. The purpose of the survey was to obtain pupils' views on aspects of health and wellbeing including healthy eating, safety, emotional wellbeing and physical activity. Children and young people in Buckinghamshire were asked how frequently and when they ate fast food and takeaway.

Methodology

All primary schools, secondary schools and further education (FE) settings were invited to participate in the survey during the autumn term of 2023. All surveys were undertaken anonymously online or via a paper based version. Students' responses to the fast food question were collated for primary and secondary schools. Results were compared between students attending primary schools within Opportunity Bucks (OB) wards and those attending schools not within OB wards. Comparisons of student responses from secondary schools within OB wards and non-OB wards was not undertaken due to the smaller sample size and to prevent identification of individual school results

Participation

A total of 7852 pupils completed the survey representing 37 primary schools, 11 secondary schools and seven FE settings. The proportion of OB schools who participated in the survey was broadly representative of their share of the total number of schools in Buckinghamshire.

Fast food frequency

Over one third of pupils in primary (35.4%) and secondary schools (34.3%) ate fast food at least once a week for their main meal. In addition, students reported eating fast food at least once or twice a day throughout the day (see Figure 1). As previously reported, research shows that eating fast food once a week or more puts people, including children and young people, at risk of poor diet, obesity and diet-related disease.[178,179,180]

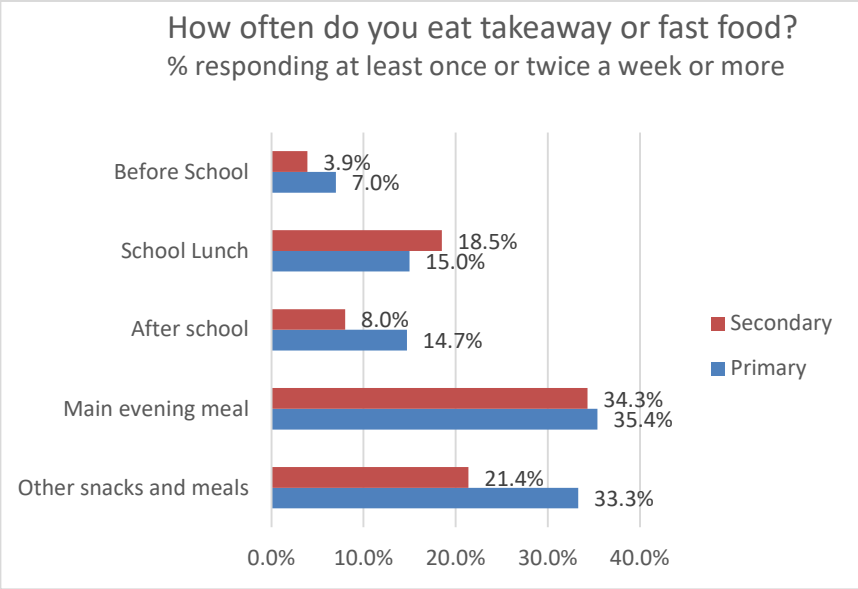

Figure 1. Percentage of primary school (Year 4, 5 6) and secondary students (years 8 and 10) who report eating takeaway or fast food more at least once or twice a week.

Fast food environment, deprivation and frequency

A comparison of survey responses from primary school children within both OB wards and non-OB wards was used to explore the relationship between fast food exposure, deprivation and fast food consumption. Findings from the initial Fast Food Report mapping (see page 13), showed pupils attending schools in OB wards had higher exposure to FFOs near to their school; for example, four times as many primary schools within OB wards had at least one fast food outlet within 400m, compared to schools in non-OB wards.

When comparing pupils' survey responses, the percentage of pupils who reported eating fast food at least one to two times a week was consistently higher across all time categories for those attending primary schools in OB wards compared to those attending schools in non-OB ward (see Figure 2).

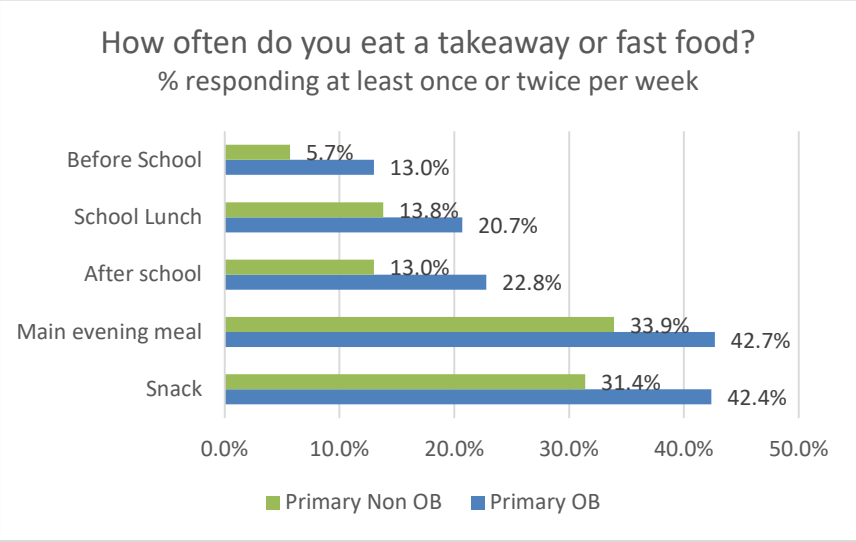

Figure 2. Comparison of frequency of fast food consumption between Buckinghamshire primary school pupils in OB wards and non- OB wards.

Conclusions

Findings from the 2023–2024 Buckinghamshire Children and Young People's Survey showed that a large proportion of primary and secondary school students were eating fast food frequently, putting them at risk of poor diet, child obesity and increased likelihood of adult obesity and diet-related disease. [181]

These findings are consistent with evidence that increased exposure to fast food outlets near schools and in more deprived areas, is associated with higher consumption of fast food. [182,183] Analysis of primary school data revealed that pupils attending schools within OB wards (areas with higher deprivation and high obesity rates), had greater exposure to fast food outlets near their school and consistently reported higher rates of fast food consumption across all time categories.

The survey findings suggest that exposure to fast food outlets near schools is negatively impacting on children's health and wellbeing, particularly for children living in areas of deprivation. The higher exposure of children living in OB wards to FFOs is likely to exacerbate and perpetuate health inequalities in Buckinghamshire

These results reinforce the initial findings and provide further evidence to support cross-council actions to improve the food environment. It highlights the need to reduce children's exposure to fast food outlets as part of a Whole Systems Approach to a Healthy Weight. Strategies may include improving access to healthier food options, regulating the density of fast food outlets near schools and in areas of deprivation, stay-on-site school policies, and delivering tailored nutrition education in communities most at risk of high fast food consumption.

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