

Health and diet inequalities: analysis of English constituencies

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Summary

Poor health resulting from our food system is widespread across England. However, much of our current insights on health and the food environment are at a national or local authority level. To support MPs in understanding how national issues impact on their constituencies, constituency level estimates for several diet-related health metrics have been produced to build a picture of what is happening within and between different constituencies. The patterns and trends related to health and diet inequalities have also been explored.

Specifically, nine metrics are used as a proxy for the state of the nation's diet-related health and our food system:

- Proportion of children in **reception and year 6** with **obesity**
- Proportion of children in **reception and year 6** with **dental decay**
- Proportion of people over 17 years old with type 2 diabetes
- **Life expectancy** at birth
- Proportion of food outlets that are **fast food outlets**
- Relative **child poverty**
- Proportion of children that are eligible for **Free School Meals (FSM)**

The analysis shows stark regional inequalities, with constituencies in the North and the Midlands experiencing worse health than those in the South. Furthermore, there is a correlation between constituency deprivation and worse health outcomes, meaning more deprived areas have high rates of poor health.

The findings highlight the need for targeted local interventions to address health and diet inequalities, alongside national level policies that can transform our food system to ensure that everyone, no matter where they live, has access to and can afford healthy and sustainable diets.

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Methods

Constituency metrics

Constituency level metrics have been calculated using a previously developed methodology established by London School of Hygiene & Tropical Medicine, which has been adapted to account for the 2024 constituency boundaries.

The metrics chosen were based on data that is available on health outcomes and drivers. Specifically, the analysis focused on 9 key metrics that provide a proxy for diet and health inequalities across England.

Metric	Data used	Variable used	Missing values	Analysis undertaken	Description of updates since August 2025 Food Foundation constituency dashboard
<u>Proportion of children aged 4-5y and 10-11 years who are overweight or obese</u>	National Child Measurement Programme, England, 2023/24 School Year.	Prevalence (%) of overweight and obesity in children reception and year 6, respectively	3.7%	Data found at LA level and translated to constituency level through previously used method.	Updated data from 2024-2025 downloaded and code adjusted
<u>Proportion of children aged 4-5y and 10-11 years who are obese only</u>	National Child Measurement Programme, England, 2023/24 School Year.	Prevalence (%) of obesity in children reception and year 6, respectively	3.7%	Data found at LA level and translated to constituency level through previously used method.	Updated data from 2024-2025 downloaded and code adjusted
Oral health of children <u>aged 5 y</u> and in school <u>year 6</u>	Oral health survey by NDEP	Percentage of children with one or more obvious untreated dentinally decayed teeth	19.5% (5y) and 26% (year 6)	Data found at LA level and translated to constituency level through previously used method. For 20 constituencies, data was missing for 1 out of 2 of the LAs that they belonged to. These constituencies were given the same prevalence as that of the LA for which data was available.	New data only available for Reception (5y olds), this has been downloaded and code adjusted. Code unchanged for year 6
<u>Life expectancy at birth</u>	Life expectancy for constituencies (2022)	Life expectancy at birth	0%	Data available at constituency level	No updated data released at constituency level, code unchanged
<u>Prevalence of type 2 diabetes in people +17y</u>	<u>NHS Fingertips</u>	Percentage of people with type 2 diabetes in people +17yrs	0%	Data found at GP level and translated to constituency level by averaging the prevalence of T2D reported at GP level within each constituency - ie.if all 3 GPs in one constituency reported prevalences of 5%, 4%, 5.3%, respectively, then the prevalence of T2D in that	Updated data from 2024-2025 downloaded and code adjusted

				constituency would be $(5+4+5.3)/3 =$ 4.8%	
Density of fast food outlets	Data from Ordnance Survey and analysed in collaboration with IMS Epidemiology at the University of Cambridge. © Crown copyright and database rights 2025 Ordnance Survey (100025252). This product includes data licensed from PointX © Database Right/Copyright (2025) and OS © Crown Copyright (2025). All rights reserved. Data originally presented in The Broken Plate report 2026.	Fast food outlets as a proportion of food outlets	3.0%	Data was available at local authority level. Authority have been mapped onto a constituency	Updated data from 2025 imported and code adjusted
<u>Eligible for free school meals</u>	<u>Department for Education.</u>	Percentage of pupils known to be eligible for free school meals	36%	Data found at LA level and translated to constituency level using previously used method	Updated data from 2025-2026 downloaded and code adjusted
<u>Child poverty</u>	UK Parliament Houses of Commons Library	Percentage of children aged 0-15 in the constituency in households where income is less than 60% of contemporary median household income after housing costs	0%	Data available at constituency level	Updated data from 2024-2025 downloaded and code adjusted

To produce estimates for constituency level data, information on how Middle Layer Super Output Areas (MSOAs), Local Authorities (LAs) and constituencies relate to each other in England ¹ was first combined with data containing information on the population in each MSOA in England². This was done to be able to calculate the proportional split of LAs across constituencies, based on total population numbers³. These proportions were then applied to different metrics while matching LAs with constituencies.

For example, if the prevalence of caries in 5y olds was 25% in one LA, the number of children that that prevalence would represent in that LA was distributed across the constituencies

¹ ONS Geography, 'MSOA (2021) to Westminster Parliamentary Constituencies (July 2024) Best Fit Lookup in EW', *ONS Geography*, 2024, https://geoportal.statistics.gov.uk/datasets/098360c460dd41beacbfdad83bc4fea2_0/explore

² ONS, 'Middle layer Super Output Area population estimates (supporting information)', *ONS*, 2024, <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/middlesuperoutputareamidyearpopulationestimates>

³ For the metrics involving children (overweight and obesity and dental caries), the proportional split was based on the share of children in the relevant age group (e.g. children 5y) in each constituency relative to the total number of children the same age group. This was done to account for differences in demographics between different constituencies.

proportionally to their share of that LA. The prevalence of caries in each constituency was then re-calculated (based on the number of 5-year-old children and the number of 5-year-old children with caries in each constituency).

This method was applied to all metrics in the first instance. Additional adjustments were made for some of the metrics based on the data available to reduce missing values:

- **Tooth decay:** There are a number of missing data points for tooth decay (dental caries). To reduce the number of data gaps we identified those constituencies which fall under 2 LAs but where data was only available for 1 LA (resulting in NA entry).
- **Diabetes:** The data used was reported at General Practitioner (GP)-level rather than LA level. This data was first linked to a data file containing information on how GP-practices relate to constituencies (i.e. which constituency that GPs belong to)⁴. The average prevalence of diabetes across the GPs within each constituency was then calculated for each constituency

Overall, the data available allowed modelling of a full set of metrics across 52% of England constituencies.

Constituency rankings

Each constituency was given the below rankings:

1. Per metric, for which it had data (nationally). For example, 6 out of 543 English constituencies.
 2. Per metric, for which it had data (regionally). For example, 6 out of 91 South East constituencies.
 3. An overall ranking.
1. Metric ranking

Each constituency was given a ranking per metric for which they had data available, both national and regional. The lower the ranking, the poorer performance on the metric. Where constituencies had duplicate ranking, they were allocated the same ranking, and then the following ranking number skipped. E.g. 1, 2, 2, 4.

2. Overall ranking

Constituencies were also given an overall ranking. This was calculated in a way that took into account any data gaps for constituencies without full data using the following method:

- Metric rankings were converted into a percentile ranking form 0-1, allowing direct comparison between them
- For each constituency, its percentile ranking was totalled across all metrics, then divided by the number of metrics for which it had data available. This gave an 'average metric rank'.
- The 'average metric rank' was then used to determine the 'overall rank' by ordering it by lowest to highest score and then allocating them an overall rank from 1 up to 543 (the number of English constituencies).

⁴ House of Commons Library, 'Constituency data: GPs and GP practices', *House of Commons Library*, 2025, <https://commonslibrary.parliament.uk/constituency-data-gps-and-gp-practices/>

Regional analysis

For each of the metrics the average figure across the constituencies within each region was calculated. The restructuring of constituencies in 2024 means those in England have similar numbers of constituents and therefore a decision was made that it would be sufficiently accurate to average across the constituencies in this way and assume equal weighting. The averages have been calculated based on available data – in some cases there are data gaps in some regions.

Constituency averages per region

Region	Type 2 diabetes (%)	Child Poverty (%)	Life Expectancy At Birth	Obesity Reception (%)	Obesity Year 6 (%)	Dental Age 5 (%)	Dental Age 10 (%)	Fast Food Outlets (%)	Free School Meals Eligibility (%)
East Midlands	7.8	25.6	80.8	10.6	22.3	18.8	8.7	27.5	27.2
East of England	7.2	23.1	82.0	9.3	20.1	15.2	7.6	24.7	22.8
London	7.1	29.7	82.2	9.7	22.9	23.8	7.8	24.2	29.7
North East	8.4	28.3	79.5	12.4	24.9	18.2	9.2	31.1	32.3
North West	7.4	27.9	79.6	11.5	23.7	27.1	12.8	30.1	30.9
South East	6.6	20.9	82.4	9.4	18.9	15.7	6.2	22.8	23.5
South West	6.7	23.0	81.9	9.7	19.1	17.3	8.5	22.1	21.6
West Midlands	8.1	30.1	80.6	11.3	24.1	20.2	12.4	26.5	35.0
Yorkshire And The Humber	8.0	29.0	80.0	12.1	24.4	24.4	16.4	31.5	29.2

Rank per region

Region	Type 2 diabetes (%)	Child Poverty (%)	Life Expectancy At Birth	Obesity Reception (%)	Obesity Year 6 (%)	Dental Age 5 (%)	Dental Age 10 (%)	Fast Food Outlets (%)	Free School Meals Eligibility (%)
East Midlands	4	6	5	5	6	5	5	4	6
East of England	6	7	7	9	7	9	8	6	8
London	7	2	8	6	5	3	7	7	4
North East	1	4	1	1	1	6	4	2	2
North West	5	5	2	3	4	1	2	3	3
South East	9	9	9	8	9	8	9	8	7
South West	8	8	6	7	8	7	6	9	9
West Midlands	2	1	4	4	3	4	3	5	1
Yorkshire And The Humber	3	3	3	2	2	2	1	1	5

1 = worst performing region on metric

Analysis by deprivation

For each of the metrics, the average figure for each IMD⁵ quintile was also calculated. For all metrics, there was correlation between deprivation and poorer performance on metrics.

1 = most deprived quintile

IMD quintile	Free School Meals Eligibility (%)	Fast Food Outlets (%)	Type 2 diabetes (%)	Life Expectancy At Birth	Child Poverty (%)	Obesity Reception (%)	Obesity Year 6 (%)	Dental Age 5 (%)	Dental Age 10 (%)
1	35.1	30.5	8.5	78.7	37.9	12.2	25.7	26.6	13.5
2	31.0	27.2	7.9	80.4	31.2	11.2	24.0	23.0	10.4
3	25.9	25.7	7.3	81.4	25.0	10.7	22.0	20.0	9.3
4	24.1	24.3	6.9	82.3	20.9	9.6	20.2	17.1	8.3
5	19.7	22.7	6.2	83.3	15.5	8.4	17.5	14.6	6.8

Correlations between metrics

The number of constituencies that consistently performed poorly across all metrics was also explored. No constituencies with complete datasets were found to consistently appear in the worst 10% across the metrics. Four constituencies with full datasets fall into the bottom 25% across all metrics - Blackpool South (North West), Gorton and Denton (North West), Middlesbrough and Thornaby East (North East), Stoke-on-Trent Central (West Midlands).

Conclusion

Overall, stark health and diet inequalities exist across England. There is a strong correlation between poor health outcomes and deprivation. The findings highlight the need for targeted local interventions to address diet and health inequalities that exist geographically, as well as socio-economically. This should also be alongside national level policies that can transform our food system to ensure that everyone, no matter where they live, has access to and can afford health and sustainable diets.

⁵ <https://commonslibrary.parliament.uk/constituency-data-indices-of-deprivation/>

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