Obesity Action Scotland
Healthy weight for all

FACTSHEET 2022/23 DATA

February 2024

OBESITY IN SCOTLAND

Prevalence, Causes and Impact

This factsheet reports on data from 2022/23.

Note on data included in this factsheet

Scottish Health Survey: Data for adults in the 2022 Scottish Health Survey is self-reported data that has then been adjusted based on a methodology adopted in England to compare self-reported and measured data. Data for children in the 2022 Scottish Health Survey is measured data, with measurement of height and weight taken by the researcher.

Births in Scotland: Data on maternal BMI is recorded in the annual Births in Hospital publication. It reports data obtained from Scottish Morbidity Record 02 (SR02) and are recorded at the ante-natal booking appointment. Reporting on mothers height and weight data is mandatory on the SR02[1].

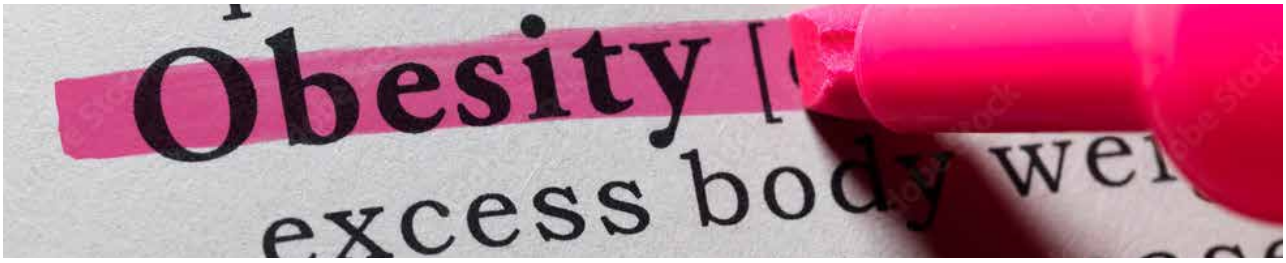
Primary 1 BMI Data: BMI data for primary 1 age children is measured data, gathered in the school setting, and reported annually. It provides information on the overall proportion of children at risk of overweight and obesity, and also provides a break down of this data by deprivation and health board. This factsheet provides the primary 1 BMI data for school year 2022/23 by deprivation quintile. We've chosen to include this data alongside the children's data from the Scottish Health Survey, as the children's data by deprivation from the Scottish Health Survey hasn't yet been published.

OBESITY TRENDS

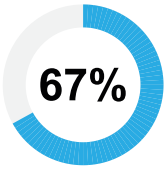
Obesity is a significant public health concern. In 2022, adult obesity prevalence was 29% and 67% of adults were living with overweight and obesity[2]. A third of children (33%) aged 2-15 in 2022 were at risk of overweight and obesity, with 18% at risk of obesity.

The figure for children at risk of overweight and obesity in Scotland in 2022 is the highest recorded in the Scottish Health Survey since 2011*. The proportion of children at risk of obesity remains the same as in 2021 (18%), which means there continues to be a lack of progress towards achieving the Scottish Government's ambition to halve childhood obesity by 2030.

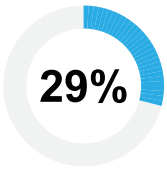
*The figure was also 33% in 2011 and 2008. 33% is the highest figure ever recorded by the survey.



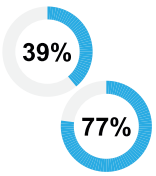
OBESITY PREVALENCE IN SCOTLAND



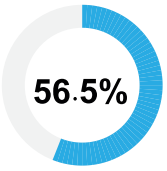
Over 2 in 3 adults (67%) have overweight including obesity[1].



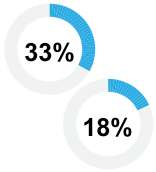
Just under 3 in 10 adults (29%) have obesity[2].



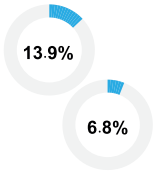
Overweight and obesity prevalence increases with age from 39% in the 16-24 age group to 77% in those aged 65-74[2].



More than half (56.5%) of pregnant women had overweight and obesity in 2022/23. This is down slightly from the previous year (56.9%)[3].



A third of children (33%) age 2-15 are at risk of overweight and obesity. 18% were at risk of obesity[3].



In 2022/23, 13.9% of children in the most deprived quintile were at risk of obesity, which is more the double than rate in children in the least deprived quintile (6.8%).

DEFINITION OF OBESITY

Obesity describes the accumulation of excess body fat. Body Mass Index (BMI) is used to define overweight and obesity at population level. BMI is a measure of whether a person is a healthy weight for their height. For most adults, overweight is defined as having a BMI of 25 – 29.9 kg/m² and obesity is defined as having a BMI of 30kg/m² and higher[4].

BMI is an effective population measure as it is relatively accurate, simple and cheap; however, there will always be exceptions to the rule for individuals, e.g. people who are very muscular or pregnant women may have a high BMI but not extra fat mass. In such individual circumstances other measures can be used to provide a more accurate assessment of healthy weight.

DEFINITION OF CHILDHOOD OBESITY

As with adults, obesity in children aged 2 and over is defined using Body Mass Index (BMI). BMI is calculated by dividing an individual's weight (in kilograms) by their height squared (in metres).

Children's height and weight proportions change as they grow and develop; therefore, age and sex specific growth reference data has to be used to interpret their BMI.

Our sources of data on children's weight in Scotland use epidemiological BMI thresholds to report numbers of children at risk of underweight, overweight and obesity. These thresholds define children in the 2nd percentile of BMI or less as at risk of underweight; those of a BMI between the 85th and 95th percentile as at risk of overweight; and children in the 95th percentile or higher as at risk of obesity. The phrase 'at risk of' is correct when using these thresholds.

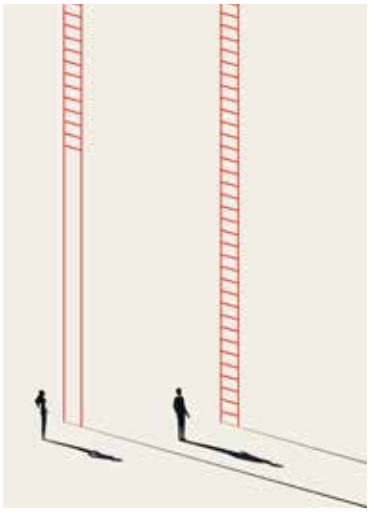
GENDER

In 2022, males were more likely to have overweight (including obesity) than females. This is the case for both men and boys age 2-15, with boys only slightly more at risk of overweight and obesity than girls. Overall, girls were more at risk of obesity. Women are more likely than men to have severe obesity (6% compared to 3%).

- 70% of men have overweight and obesity. 28% have obesity[2].
- 63% of women have overweight and obesity. 30% have obesity[2].
- A third of children were at risk of overweight and obesity. 18% were at risk of obesity[2].
- For boys age 2-15, 33% were at risk of overweight and obesity in 2022. 17% were at risk of obesity[2]. The risk of overweight and obesity varies quite a lot by age with more boys age 12-15 at risk of obesity than younger age groups – 42% of boys age 12-15 were at risk of overweight and obesity, compared to 27% for those age 2-6 and 31% for those age 7-11[2].
- For girls age 2-15, 32% were at risk of overweight and obesity in 2022. 19% were at risk of obesity[2]. There is much less variation between age groups for girls, with rates fairly consistent between the three age categories. Just under a third (32%) of girls age 12-15 were at risk of overweight and obesity, 31% for those age 2-6 and 33% for those age 7-11.
- Boys age 12-15 are much more likely to be at risk of overweight and obesity compared to girls of the same age – 42% compared to 32%[2].

DEPRIVATION

- In 2022, adults from more deprived groups were more likely to have overweight and obesity than those who are less deprived - 71% of adults in the most deprived quintile had overweight and obesity, compared to 59% in the least deprived. For obesity, the figures are 36% and 19% respectively[2].
- Data on child overweight and obesity by deprivation from the 2022 Scottish Health Survey isn't currently available. Instead, we have made use of the 2022 Primary 1 BMI statistics to provide insight into obesity by deprivation in children in Scotland.
- In academic year 2022/23, primary 1 age children in the most deprived groups are over twice as likely to be at risk of obesity than children from least deprived groups – 13.9% in the most deprived quintile, compared to only 6.8% in the least deprived. This is a persistent issue that has been seen consistently over several years[5].

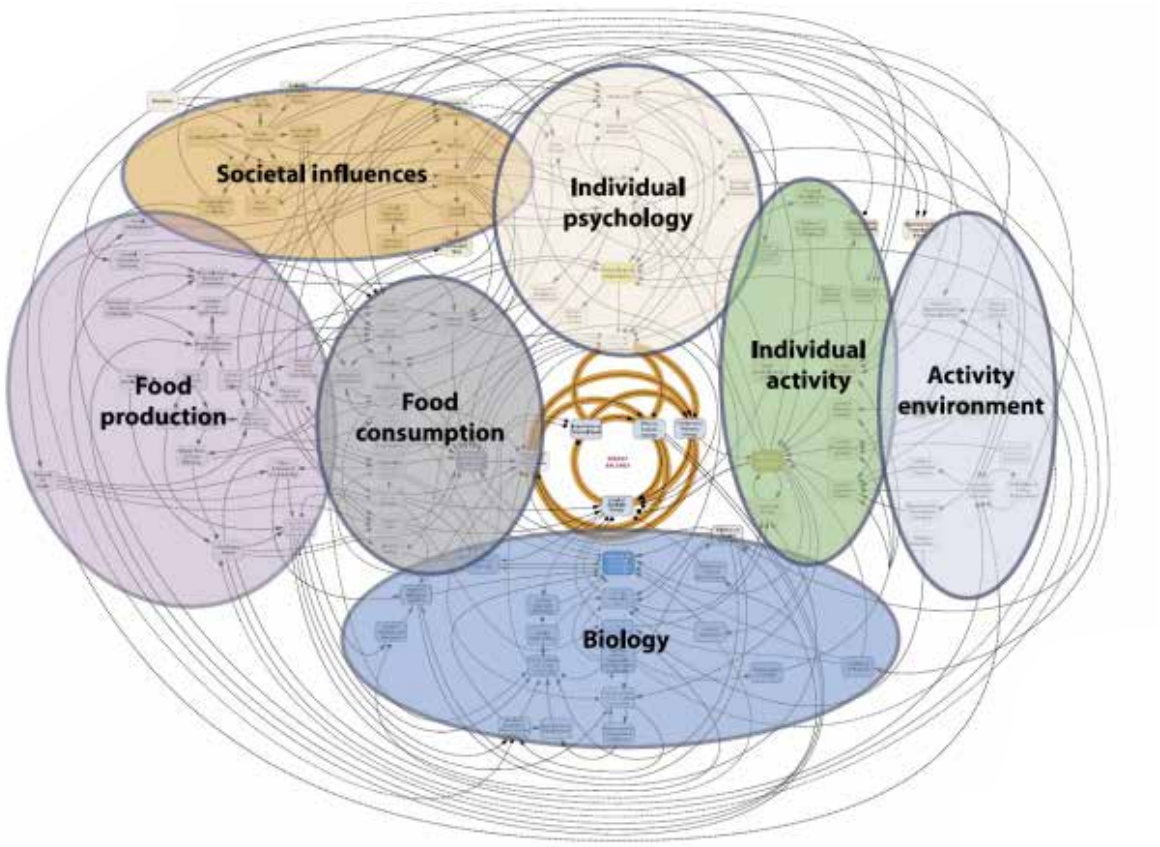


MATERNAL OBESITY

- In the year ending 31st March 2023, 56.5% of pregnant women had overweight and obesity. This is down slightly from the previous year (56.9%), however it is higher than at any point pre-pandemic[3].
- When looking at just obesity, this has continued to rise year on year and is now at the highest level recorded – 27.9%, compared to 27.2% the previous year[3].
- Women from more deprived backgrounds are much more likely than their less deprived counterparts to be living with overweight and obesity during pregnancy. More than 60% (60.8%) of pregnant women in the most deprived SIMD quintile were recorded as having overweight and obesity, compared 49.3% in the least deprived SIMD quintile[3].

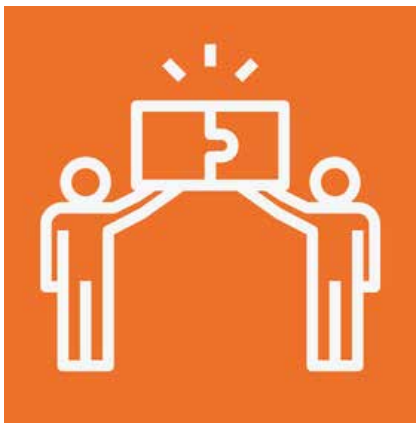
CAUSES OF OBESITY

Obesity occurs when energy intake from food and drink is greater than the body's energy requirements over a prolonged period. An obesogenic environment is one where environmental factors play a role in diet and nutrition (as well as the amount of physical activity undertaken). These include political, social, economic and commercial factors, and have a strong influence on the cost, availability and consumption of food[6]. In obesogenic environments inactivity and overconsumption of energy dense foods high in fat, salt and sugar (HFSS) is easy, affordable and widely accepted, making an unhealthy lifestyle the default option.



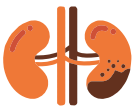
The Foresight report[5] for the UK government identified 7 clusters of factors / behaviours that are contributing to obesity (termed a 'system's map'): food consumption, food production, individual psychology, social psychology, physiology, individual activity and physical activity environment.

These clusters are interconnected, and this connectivity is important when designing/delivering interventions; it may help to explain unexpected impacts or losses of impact due to mitigating effects of different factors/behaviours[5].



IMPACT OF OBESITY

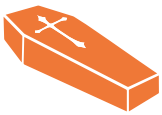
Obesity increases the risk of



Kidney disease[16]

Type 2 diabetes[7]

Infertility in women, impotency in men[12]



Premature death[17]

13 common cancers[8]

Complications during pregnancy and birth[13]

Unemployment[18]

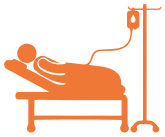
Cardiovascular disease[9]

Musculoskeletal problems[12]

Discrimination and stigmatisation[19]

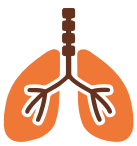
Alzheimer's disease[10] and dementia

Mental health problems[14, 15]



Increased risk of hospitalisation[20]

Gastrointestinal disorders[11]



Respiratory disorders[12]

Severe illness and death from COVID-19[20]

ADDITIONAL RISKS FOR CHILDREN WITH OBESITY

There are a number of additional risks for children who have or who are at risk of obesity. These include:

- Emotional and behavioural impacts including stigmatisation and bullying, low self-esteem, and absence from school[20].
- Physical health impacts including breathing difficulties, increased risk of bone fractures, hypertension, early markers of cardiovascular disease, insulin resistance, and physiological effects[20].
- Increased risk of having obesity in adulthood[20]
- Higher risk of morbidity, disability and pre-mature death in adulthood[1].

COST OF OBESITY IN SCOTLAND

Recently published research calculated the cost obesity in Scotland in 2022 to be £5.3bn. This is comprised of costs to the NHS, costs to individuals due to the impact of poor health on their quality of life, costs to social care, and costs to the wider economy[22].

The cost to the NHS in Scotland of obesity is estimated to be £772 million[22]. Average NHS costs for people with a body mass index of 40 kg/m^2 (severe obesity) are estimated to be twice those for people with a BMI of 20 kg/m^2 (within normal weight range).

The cost to the economy was calculated in the research to be £213 million. This is comprised of costs to employers from lost productivity and reduced economic output due to additional sick days taken by people living with obesity. Data from the Labour Force Survey indicates that Scotland has the highest proportion of working age labour market inactivity due to ill health in the four UK nations. This applies to both men and women, and has grown markedly in recent years[23].

These costs are also not borne equally in society, with the research indicating clear patterns of inequality. Those who are in the most deprived population quintiles bear a greater burden with regards to the costs of obesity. The two most deprived quintiles account for 40% of the population but bear almost half of the cost (48%). Projections suggest that, if nothing is done, this will continue to worsen, both in terms of overall rates of obesity and the burden from it[22].

These main costs associated with unhealthy diet and weight can be grouped into three broad categories – ***direct, indirect and intangible***. Direct costs are generally those which relate to costs of health care services including prevention, diagnosis and treatment of conditions. Indirect costs refer to the loss of productivity on society and typically include absenteeism and premature mortality. Finally, intangible costs relate to the psychological burden on individuals and their friends and families from pain, suffering and bereavement experienced as a result of poor health from overweight and obesity[24].

Evidence suggests that ***indirect*** costs are the most significant costs of obesity, accounting for almost two-thirds of total economic costs and impacts from overweight and obesity[25]. Such costs are broad and far reaching and highlight the importance of actions and interventions to mitigate and address them. The McKinsey Institute estimates that the cost of obesity to the UK is equivalent to 3% of gross domestic product ($70billion)[26], taking into account loss of productivity attributable to loss of life or impaired life quality, direct health care costs, and investment to mitigate the impact of obesity.

Evidence shows that almost all obesity prevention interventions are highly cost-effective to society i.e. that savings on health care costs and improved productivity, through reduced absenteeism for example, could outweigh the costs of direct investment required to deliver the interventions, and could save the NHS $1.2bn per year[21]. A recently published report highlights significant net benefit to the UK economy of four obesity prevention policies which had either been recently implemented or are scheduled to be introduced by the UK government. These policies are the soft drinks industry levy (already implemented), in-store location promotion restrictions (implemented in October 2022) on products high in fat, salt and sugar (HFSS), restrictions on price promotions of HFSS products, and a 9pm watershed for advertising HFSS products on TV and a ban on paid-for online advertising. The report outlines that over a 25-year period, the combined net benefit of these policies is estimated to be over £76 billion[27], demonstrating the significant cost that obesity has to the economy and the huge economic benefits that can be achieved when such policies are implemented. They help to rebalance the food system, addressing the structural and systemic issues which drive obesity, and ensure that the healthy option is the cheapest and most accessible option for everyone. No one policy is a silver bullet, and as this research demonstrates, a range of policies and interventions are required to be introduced and implemented simultaneously to improve population weight outcomes.

REFERENCES

1. Public Health Scotland (2023) Births in Scotland. Technical report https://publichealthscotland.scot/media/23936/2023-11-28-births-technical_final.pdf
2. Scottish Government (2023) Scottish Health Survey 2022 – volume 1 main report https://www.gov.scot/publications/scottish-health-survey-2022-volume-1-main-report/
3. Public Health Scotland (2023) Births in Scotland. Year ending 31st March 2023 https://publichealthscotland.scot/publications/births-in-scotland/births-in-scotland-year-ending-31-march-2023/
4. World Health Organization (2018) Obesity and Overweight Factsheet (updated June 2021) https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight
5. Public Health Scotland (2023) Primary 1 Body Mass Index (BMI) statistics Scotland. School year 2022/23 https://publichealthscotland.scot/publications/primary-1-body-mass-index-bmi-statistics-scotland/primary-1-body-mass-index-bmi-statistics-scotland-school-year-2022-to-2023/
6. Butland B, Jebb S, Kopelman P, et al (2007) Foresight. Tackling obesities: Future choices - project report. 2nd edition
7. Public Health England (2014) Adult obesity and type 2 diabetes https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/338934/Adult_obesity_and_type_2_diabetes_.pdf
8. Cancer Research UK (2022) Overweight and obesity prevalence projections for the UK, England, Scotland, Wales and Northern Ireland, based on data from 2019/20 https://www.cancerresearchuk.org/sites/default/files/cancer-stats/adult_overweight_and_obesity_prevalence_projections_18-05/adult_overweight_and_obesity_prevalence_projections_18-05.pdf
9. Carel W le Roux, Niels V Hartvig et al Obesity, cardiovascular risk and healthcare resource utilization in the UK, European Journal of Preventive Cardiology, Volume 28, Issue 11, November 2021, Pages 1235–1241, https://doi.org/10.1177/2047487320925639
10. Christensen A and Pike CJ (2015) Menopause, obesity and inflammation: Interactive risk factors for Alzheimer's disease, Frontiers in Aging Neuroscience 7(7):130
11. American College of Gastroenterology (2019) Obesity http://patients.gi.org/topics/obesity/#tabs3 Updated 2019
12. Public Health England (2014) Health risks of adult obesity https://webarchive.nationalarchives.gov.uk/20170110170145/http://www.noo.org.uk/NOO_about_obesity/adult_obesity
13. NHS Choices (2017) Risk of being overweight in pregnancy. http://www.nhs.uk/conditions/pregnancy-and-baby/pages/overweight-pregnant.aspx. Updated 2017.
14. Simon GE, Von Korff M, Saunders K, et al (2016) Obesity and psychiatric disorders in the US adult population, Arch Gen Psychiatry 63(7):824-830.
15. Obesity Action Scotland (2019) Obesity and Mental Health: Evidence Overview https://www.obesityactionscotland.org/media/1415/obesity-and-mental-health-final-report-with-cover.pdf
16. Kopple JD (2010) Obesity and chronic kidney disease, Journal of Renal Nutrition, 20:S2930
17. Bhaskaran K, dos-Santos-Silva I, Leon DA, et al (2018) Association of BMI with overall and cause-specific mortality: a population-based cohort study of 3·6 million adults in the UK, The Lancet 6[12]: 944-953
18. Public Health England (2015) Making the case for obesity: Why invest? https://khub.net/documents/31798783/32184747/Making+the+case+for+tackling+obesity+-+why+invest+-+supporting+references.pdf/091f75ad-91fd-4275-aa37-e17b31984b67
19. Tomiyama, A., Carr, D., Granberg, E. et al (2018) How and why weight stigma drives the obesity 'epidemic' and harms health, BMC Med 16, 123 https://doi.org/10.1186/s12916-018-1116-5
20. UK Government (2020) Excess weight can increase risk of serious illness and death from COVID-19 https://www.gov.uk/government/news/excess-weight-can-increase-risk-of-serious-illness-and-death-from-covid-19#:~:text=The%20current%20evidence%20does%20not
21. Obesity Action Scotland (2017) Childhood Obesity Briefing https://www.obesityactionscotland.org/media/1020/childhoodobesityweb.pdf
22. Nesta (2023) Costs of Obesity in Scotland. Frontier Economic report for Nesta https://media.nesta.org.uk/documents/Costs_of_obesity_in_Scotland_Frontier_Economics.pdf
23. Fraser of Allander Institute (2023) Economic inactivity and ill-health in Scotland https://fraserofallander.org/economic-inactivity-and-ill-health-in-scotland/
24. Candari, C. J, Cylus, J and Nolte, E (2017) Assessing the economic costs of unhealthy diets and low physical activity: An evidence review and proposed framework, WHO Europe/European Observatory on Health Systems https://www.euro.who.int/__data/assets/pdf_file/0004/342166/Unhealthy-Diets-ePDF-v1.pdf
25. World Obesity Federation and RTI International (2021) The Economic Impact of Overweight and Obesity in 8 Countries http://s3-eu-west-1.amazonaws.com/wof-files/Economic-impact-overweight-obesity-in-countries-final.pdf
26. Dobbs R, Sawers C, Thompson F, et al (2014) Overcoming obesity. An initial economic analysis. Discussion paper. The McKinsey Global Institute https://www.mckinsey.com/~/media/mckinsey/business%20functions/economic%20studies%20temp/our%20insights/how%20the%20world%20could%20better%20fight%20obesity/mgi_overcoming_obesity_full_report.ashx
27. The Behavioural Insights Team (2022) Putting health in the spotlight: quantifying the impact of obesity prevention policies in the UK https://www.bi.team/wp-content/uploads/2022/11/Putting-health-in-the-spotlight_-quantifying-the-impact-of-obesity-prevention-policies-in-the-UK-1.pdf

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