

NHS Ayrshire & Arran



Meeting:	Ayrshire and Arran NHS Board
Meeting date:	Monday 4 December 2023
Title:	Director of Public Health Report – obesity and diabetes prevention
Responsible Director:	Lynne McNiven, Director of Public Health Jennifer Wilson, Nurse Director
Report Author:	Dr Ruth Campbell, Consultant Dietitian in Public Health Nutrition

1. Purpose

This is presented to the Board for:

- Discussion

This paper relates to:

- Government policy/directive
- Local policy
- NHS Board/Integration Joint Board Strategy or Direction

This aligns to the following NHSScotland quality ambition(s):

- Safe
- Effective
- Person Centred

2. Report summary

2.1 Situation

The NHS Board Chair and Chief Executive have agreed a programme of Public Health reports to the NHS Board. This Director of Public Health (DPH) obesity and diabetes prevention report is the fourth in the series, following on from child health, women's health and a life-course approach to understanding mental health reports August 2022, March 2023 and October 2023, respectively.

The report sets out examples of current work, aimed at achieving the ambitions outlined in the national *Diet and Healthy Weight Delivery Plan*, the national *Framework for the Prevention, Early Detection and Early Intervention of Type 2 Diabetes* and the *Ayrshire Healthy Weight Strategy*. The intention is that the report will be a public facing document, available for members of the public and partners, such as Local Authorities and Health and Social Care Partnerships (HSCPs) to use. It is being brought to the Board for discussion.

2.2 Background

“Obesity is considered to be one of the most serious public health challenges of the 21st century. It is having an impact on people’s lives now, across the generations, in terms of our quality of life, our risk of developing chronic diseases such as type 2 diabetes and its association with common mental health disorders. Doing nothing is not an option. Without action, the health of individuals will continue to suffer, health inequalities associated with obesity will remain and the economic and social costs will increase to unsustainable levels” (National Institute for Health and Care Research).

Prevalence of obesity in adults

Body Mass Index (BMI) is used to define overweight and obesity at a population level. Overweight is defined as a BMI of 25-29.9 kg/m² and obesity is defined as a BMI of 30kg/m² or above. The Scottish Health Survey (2020) estimated that 65% of adults in Scotland are overweight, of which 29% have obesity; this means being above a healthy weight has become a normal condition among adults in Scotland. In Ayrshire and Arran the rates are above the national average, at 70% and 34% respectively. There are significant inequalities in the prevalence of obesity; those living in the most deprived areas are much more likely to be living with obesity compared to those living in the least deprived areas.

Prevalence of obesity in pregnant women

The number of women who enter pregnancy already above a healthy weight has increased over the last decade, particularly among women in Ayrshire. This increasing trend can be seen across all age groups and deprivation categories. In 2021/22, 61% of women in Ayrshire were found to be above a healthy weight at the time of antenatal booking. Of those, 32% were found to have obesity, compared to 27.3% of women in Scotland.

Prevalence of obesity in children

All children in Primary 1 across Scotland have their BMI measured and this data is published annually by Public Health Scotland (PHS). In 2021/22, 27.3% of Primary 1 children in Ayrshire were above a healthy weight; of those, 13% were at risk of obesity (compared to 24.1% and 11.7% respectively among children in Scotland). As with the prevalence of obesity among adults, there are marked inequalities in children’s BMI. Children living in the most deprived areas of Ayrshire were twice as likely to be at risk of obesity compared to those living in the least deprived areas in 2021/22.

Breastfeeding rates

Among a range of other health benefits, babies who are breastfed are at lower risk of obesity later in childhood. Exclusive breastfeeding rates at 6-8 weeks in Ayrshire have remained consistently and significantly below Scottish rates over a period extending from 2002/03 to 2021/22. In the year to March 2022, 22% of babies in Ayrshire were exclusively breastfed at 6-8 weeks compared to 32% of babies in Scotland. Babies living in the least deprived areas in Ayrshire were 1.7 times more likely to be exclusively breastfed at 6-8 weeks compared to babies in the most deprived areas.

Prevalence of type 2 diabetes

Obesity is a significant risk factor for the development of type 2 diabetes; over 87% of people with type 2 diabetes are above a healthy weight. The national and local prevalence of type 2 diabetes has risen steadily over the last decade. In 2021, 6.4% of the population in Ayrshire had type 2 diabetes compared to 5.3% in Scotland. Women with obesity during pregnancy are at high risk of developing gestational diabetes and

have poorer pregnancy outcomes than women within a healthy weight range. Furthermore, half of women diagnosed with gestational diabetes develop type 2 diabetes within five years of the birth of their baby. It is estimated that 9% of NHS expenditure is attributable to the cost of treating type 2 diabetes and complications associated with type 2 diabetes. In 2022/23, approximately 736 people in Ayrshire and Arran were diagnosed with pre-diabetes, bringing the number of people living with pre-diabetes to a total of approximately 6,029.

Physical activity levels among adults

Current activity guidelines advise adults to accumulate 150 minutes of moderate activity or 75 minutes of vigorous activity per week or an equivalent combination of both, in bouts of 10 minutes or more. Self-reported data from the Scottish Health Survey showed that over the period 2017 to 2021, 59% of adults in Ayrshire and Arran met these guidelines compared to 66% of adults in Scotland.

Causes of obesity

Obesity has no single cause and is the result of a number of complex factors operating at different stages in an individual's life including biological factors; early life and growth patterns; food consumption and food environment; physical activity patterns and physical activity environment; individual choices and societal influences.

Impact of obesity

Overweight and obesity have a significant impact on physical and mental health and wellbeing. Studies have shown children living with obesity are more likely to have poorer physical and psychological health, and they are more likely to be absent from school than children in the healthy weight range. These negative consequences are likely to persist into adulthood, posing a further risk to health. In addition, children who are above a healthy weight are at increased risk of having a high BMI in adulthood. Adults living with obesity are more likely to suffer from a range of conditions including type 2 diabetes, cardiovascular disease, hypertension, 13 types of cancer, musculoskeletal problems, Alzheimer's disease and dementia, mental health problems, and premature death. Obesity in pregnancy poses increased risk of serious adverse clinical outcomes for women and their baby.

The economic implications of obesity are considerable and go beyond the direct costs to the NHS. It is estimated that the annual cost to NHS Scotland of treating conditions related to living with overweight or obesity in 2022 was £776 million. However, the wider total costs to the Scottish economy was estimated to be £5.3 billion.

2.3 Assessment

Local strategy

The Ayrshire Healthy Weight Strategy 2014 – 2024 was approved by Ayrshire and Arran NHS Board and the three Community Planning Partnerships in April 2014. The Strategy was developed by representatives from NHS Ayrshire & Arran, the three Local Authorities and the North Public Partnership Forum. The vision for the strategy is to achieve the "healthiest weight possible for everyone in Ayrshire and Arran" and its aim is to halt the rise in the levels of overweight and obesity among children and adults by 2024 and ultimately reduce them. To achieve this aim, an initial pan-Ayrshire three year action plan was developed comprising of seven key themes:

- Awareness, knowledge, skills and empowerment
- Maternal and infant nutrition
- Availability and affordability of healthier food and drinks
- Active travel and active workplaces
- Built/natural environment and infrastructure for active travel
- Physical activity
- Weight management.

A pan-Ayrshire implementation group was set up however when the first three year action plan ended it was agreed a Local Authority specific group should be set up, and subsequent three year actions plans developed. Work is at various stages with partners in North, East and South Ayrshire to update plans beyond March 2024.

Maternal and infant nutrition programme

Since 2011, NHS Ayrshire & Arran has received an annual allocation to improve maternal and infant nutrition. A multi-agency action plan focuses on maternal nutrition, including maternal healthy weight; breast and formula feeding; weaning; oral health; and nutrition in early years. In 2019, additional funding was received to develop an integrated infant feeding team bringing together the maternity and community infant feeding teams with the Breastfeeding Network. From April this year, this work is being funded on a recurring basis by the three Health & Social Care Partnerships.

Child healthy weight programme

Since 2009, NHS Ayrshire & Arran has received an annual allocation to deliver a child healthy weight programme for those aged 5-15 years. In 2019, *Standards for the delivery of tier 2 and tier 3 weight management services in Scotland* were published. The standards are applicable to children aged 2-17 years therefore to assist Boards to meet the standards, additional funding was provided by Scottish Government which enabled development of a programme for children aged 2-4 years.

Diabetes prevention programme and adult weight management services

In 2018/19, NHS Ayrshire & Arran was selected as one of three early adopter Boards to support and inform implementation of the national *Framework for the Prevention, Early Detection and Early Intervention of Type 2 diabetes*. Scottish Government have confirmed that funding for diabetes prevention and adult weight management services is planned to continue for the length of this parliamentary term until 2026/27.

The diabetes prevention programme and adult weight management service have been integrated, which means that citizens of Ayrshire and Arran can access the right services at the right time optimising the health gain they can achieve. The work focuses on providing structured education and weight management support for those diagnosed with pre-diabetes, and extension to women with a diagnosis of Polycystic Ovarian Syndrome (PCOS); improving care for pregnant women at risk of developing gestational diabetes (GDM); offering a type 2 diabetes remission programme using Total Diet Replacement Therapy (TDR); and the development of a pan Ayrshire adult tier 3 specialist weight management service as a result of recurring funding from the three Health & Social Care Partnerships.

The report sets out examples of current work under the following headings:

- Breastfeeding
- Improving health and wellbeing in pregnancy in Carrick
- Messy Munchers
- Supporting community food provision
- Child healthy weight programmes
- Diabetes prevention programme and adult weight management services
- Diabetic eye screening
- Dalmellington community health hub
- Physical activity

2.3.1 Quality/patient care

The examples of current work outlined in the report highlight our commitment to supporting people to reach a healthy weight and prevent diabetes, and the quality of care people receive.

2.3.2 Workforce

There are no immediate workforce implications arising from the work described, although there is uncertainty of Scottish Government funding beyond March 2027 which will have a significant impact on staffing.

2.3.3 Financial

Funding to deliver the services set out in the report is provided via a number of ring fenced allocations from Scottish Government and funds from the three Health & Social Care Partnerships.

2.3.4 Risk assessment/management

Risk assessments have been produced for each of the services set out in this report and are monitored on a quarterly basis by the Diabetes Prevention Improvement Group, chaired by the Executive Nurse Director. The main risk across each service is the uncertainty of funding beyond March 2027. Twice yearly monitoring reports are submitted to Scottish Government, and regular communication is maintained with the Policy Team throughout the year.

2.3.5 Equality and diversity, including health inequalities

An equality and diversity impact assessment has been completed for each of the services set out in the report and an action plan has been developed to address any negative impacts anticipated.

2.3.6 Other impacts

- Best value
Creation of the services set out in the report has enhanced partnership working between a range of teams and departments across NHS Ayrshire & Arran, and with external partners, including the third sector, which aligns with the vision and principles set out in the Christie Commission. The work set out is regularly scrutinised by internal governance structures, and externally by Scottish Government, thus ensuring resources are used efficiently and health outcomes for the local population are maximised.

- **Compliance with Corporate Objectives**
The work described in this paper supports delivery of the following corporate objectives:
 - Protect and improve the health and wellbeing of the population and reduce inequalities through advocacy, prevention and anticipatory care;
 - Create compassionate partnerships between patients, their families and those delivering health and care services which respect individual needs and values. This will result in those using our services having a positive experience of care to get the outcome they expect.

Taking a whole systems approach to achieving a healthy weight and the prevention of diabetes is a prime example of the Caring for Ayrshire principles of prevention and early intervention in action.

- **Local outcomes improvement plans, community planning**
Commitment to improving children’s weight and breastfeeding are included as priorities in each of the three Ayrshire’s Children’s Services Plans. Whilst the health service has a significant role in mitigating the effects of overweight and obesity, many partner organisations have a role to play in creating healthier environments.

2.3.7 Communication, involvement, engagement and consultation

There are a variety of groups involved in the delivery of the work set out in the report. Each seek user feedback as part of service delivery and services have evolved accordingly.

Papers requesting substantive funding for continuation of the breastfeeding peer support service and expansion of a specialist tier 3 weight management service were considered by the following:

South Ayrshire Integration Joint Board, 15 March 2023

North Ayrshire Integration Joint Board, 16 March 2023

East Ayrshire Integration Joint Board, 29 March 2023

2.3.8 Route to the meeting

The work set out in the report has been considered by existing groups/committees as part of their routine business, including the Maternal & Infant Nutrition Programme Board and the Diabetes Prevention Improvement Group. These groups have either supported or provided the content presented.

2.4 Recommendation

For discussion: to examine and consider the implications of a matter.

Members are asked to note the prevalence of obesity, pre-diabetes and type 2 diabetes in Ayrshire and Arran, and discuss the range of work currently underway with partners.

3. List of appendices

The following appendix is included with this paper:

Appendix 1 – Director of Public Health Report on obesity and diabetes prevention

Director of Public Health Report on obesity and diabetes prevention

October 2023

Editors: Ruth Campbell and Alister Hooke

Acknowledgements

This report on healthy weight and diabetes prevention was only possible because of the hard work and commitment of staff in the Public Health Department, colleagues from elsewhere within the NHS, and Health and Social Care Partnerships (HSCPs). In addition, we would like to extend our thanks to staff and colleagues in East, North and South Ayrshire Local Authorities and everyone else who works with us to protect and improve the health of the public.

Public Health Department
NHS Ayrshire & Arran
Afton House, Ailsa Campus
Dalmellington Road
Ayr
KA6 6AB

DPH Office (01292) 885873

<https://www.nhsaaa.net/better-health>

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Foreword

This is the fourth chapter of my Director of Public Health Report (DPH) of 2023, and the topic I have chosen to focus on is Obesity and Diabetes Prevention. In previous years, I have had a single large report covering all areas of public health. This year I will have a few more in depth chapter reports. This will give Board members more information on the topics.

The Ayrshire Healthy Weight Strategy 2014 – 2024 was approved by Ayrshire & Arran NHS Board and the three Community Planning Partnerships in April 2014. The Strategy was developed by representatives from NHS Ayrshire & Arran, the three Local Authorities and the North Public Partnership Form. The vision for the strategy is to achieve the “healthiest weight possible for everyone in Ayrshire and Arran” and its aim is to halt the rise in the levels of overweight and obesity among children and adults by 2024 and ultimately reduce them.

A pan-Ayrshire implementation group was set up however, when the first three year action plan ended it was agreed a Local Authority specific group should be set up, and subsequent three year action plans developed. Work is at various stages with partners in East, North and South Ayrshire to update plans beyond March 2024.



A handwritten signature in black ink that reads "Lynne McNiven". The signature is written in a cursive, flowing style.

Lynne McNiven

Director of Public Health



Introduction

“Obesity is considered to be one of the most serious public health challenges of the 21st century. It is having an impact on people’s lives now, across the generations, in terms of our quality of life, our risk of developing chronic diseases such as type 2 diabetes and its association with common mental health disorders. Doing nothing is not an option. Without action, the health of individuals will continue to suffer, health inequalities associated with obesity will remain and the economic and social costs will increase to unsustainable levels”

National Institute for Health and Care Research

Welcome to the next in the series of Director of Public Health report chapters and the second for 2023. Here we will cover: the aim of the report; how the report is organised; and who the report is for.

Aim of the report

The aim of this report is to provide a summary of the range of work that the Public Health Department is leading on or involved with around promoting healthy weight and the prevention of diabetes. We are fortunate to work with different partners and the work reported here is far wider than that covered by the Public Health Department alone. Thank you to all those who contributed to the various sections of the report.

How the report is organised

We have provided some key information on local population statistics, the impact and causes of obesity, national and local policy drivers, some examples of actions being progressed locally, and links to further information for those who want to find out more.

Who the report is for

This report is for anyone living in Ayrshire and Arran, and for staff who work primarily in the NHS, local authorities, Health & Social Care Partnerships, or third sector organisations in Ayrshire and Arran. For members of the public, if you are interested in a particular topic, the links provided will direct you to more information. For staff, this is a chance to update you on what work is happening and who/which department to approach if you want to learn more.

Local population statistics



Local population statistics

Definitions

Body Mass Index (BMI) is commonly used as a measure of weight status and is calculated by dividing an individual's weight in kilograms by the square of their height in metres: $BMI = \text{weight (kg)} \div \text{height (m)}^2$. The World Health Organisation (2004) classifies BMI in adults as:

Table 1: Body Mass Index classification

BMI kg/m ²	Classification
< 18.5	Underweight
18.5 – 24.9	Healthy weight
25.0 – 29.9	Overweight
30.0 – 39.9	Obesity
> 40	Severe obesity

Terminology in report

Language matters. The words we choose, particularly around body weight, can have a profound effect on people and have the potential to harm. Throughout the report people first language has been used to avoid any stigma associated with higher weight, for example we refer to 'people living with overweight or obesity' rather than terms such as 'obese people'. The terms overweight and obesity are used in the context of reporting prevalence data which use the clinical definitions described in the table above.

Adult obesity trends: Scottish Health Survey data

From self-reported data published in the Scottish Health Survey (SHeS), the estimated percentage of adults with obesity (BMI 30+) in Scotland over the period from 2016 to 2019 was 29% (95% CI: 28.0%, 29.7%). This compares to 34% in Ayrshire and Arran (95% CI: 30.7%, 36.6%). (More recent 3-year aggregated data for this indicator was unavailable due to COVID-19.)

The Ayrshire and Arran figure for 2016-19 was thus five percentage points above the Scottish average and this difference was found to be significantly higher (worse) than the national comparator. The Ayrshire and Arran health board area was the only one of Scotland's 14 health board areas found to be significantly worse (higher) than Scotland as a whole in 2016-19.

This marked disparity between local and national levels of obesity among adults is further reinforced by three more detailed findings drawn from SHeS results dating back to 2012:

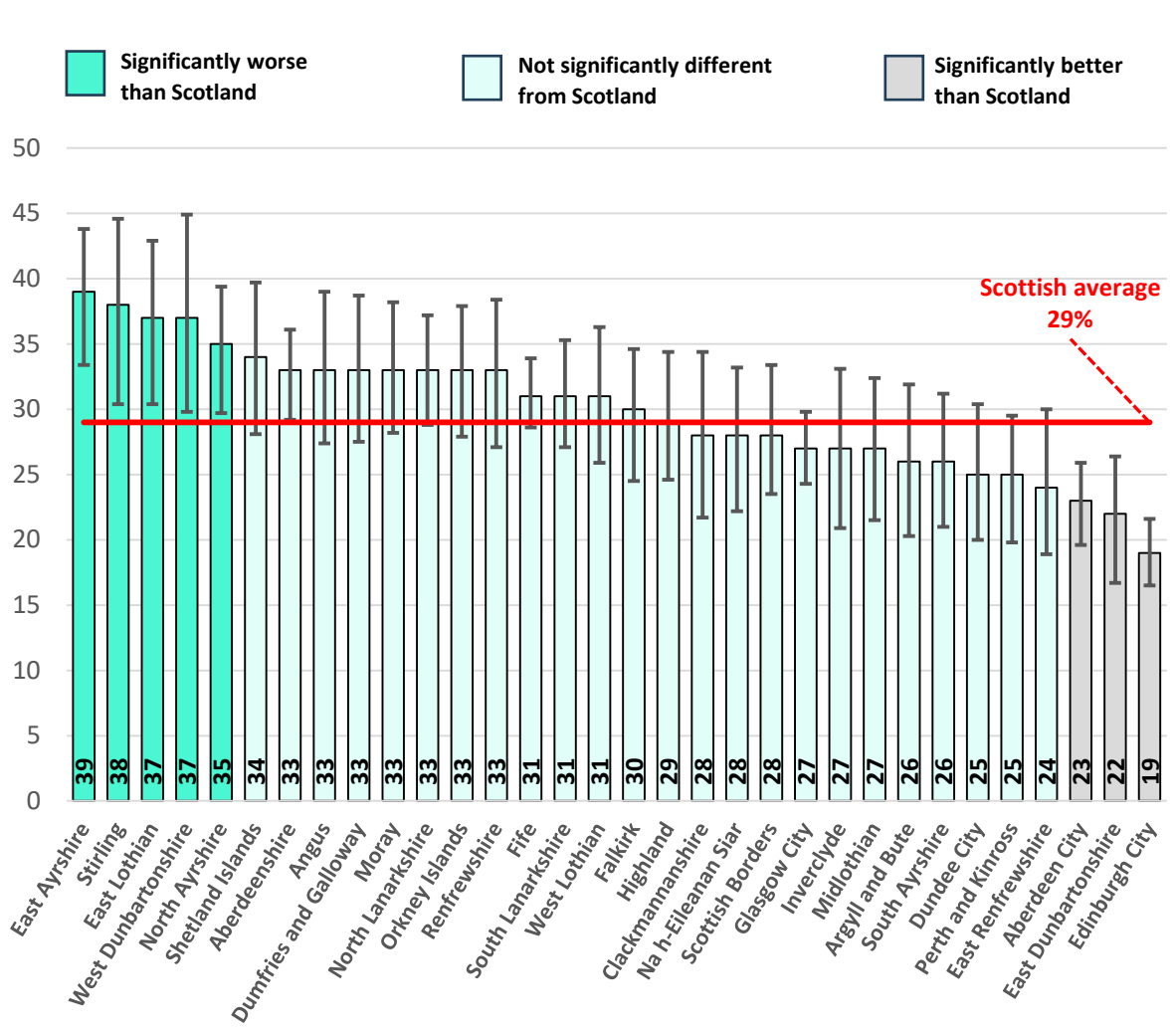
- From 2012 to 2019, 3-year rolling estimates of adults with obesity in Scotland have ranged very narrowly from 28-29%;
- Over the same time frame, the estimates for Ayrshire and Arran have ranged in a correspondingly narrow fashion from 33-34%;
- In all 3-year rolling intervals extending from 2012 to 2019, local estimates of adults with obesity were found to be significantly worse than the Scottish average.

These results display a notable consistency over time and grant a high degree of confidence in concluding that levels of adults with obesity in Ayrshire and Arran have been persistently and significantly higher than Scotland as a whole.

Examination of 2016-19 data by council area revealed that the problem of elevated levels of adult obesity in Ayrshire and Arran was due to high self-reports generated in both East and North Ayrshire (Figure 1). Reports for these two areas were found to be significantly worse than the national comparator – 39% in East (95% CI: 33.4%, 43.8%) and 35% in North (95% CI: 29.7%, 39.4%). The report in East was highest among all 32 council areas in Scotland, and in North was fifth highest.

In contrast, the report in South Ayrshire was found not to be significantly different from Scotland in 2016-19. Adult obesity in that area was estimated at 26% (95% CI: 21.0%, 31.2%) and was among the eight lowest council area reports in Scotland for that period.

Figure 1: Adults with obesity (BMI 30+), aged 16+, 2016-19: Percentage of adults surveyed, by council area (95% confidence intervals shown)



Source: Scottish Health Survey; accessed October 2023

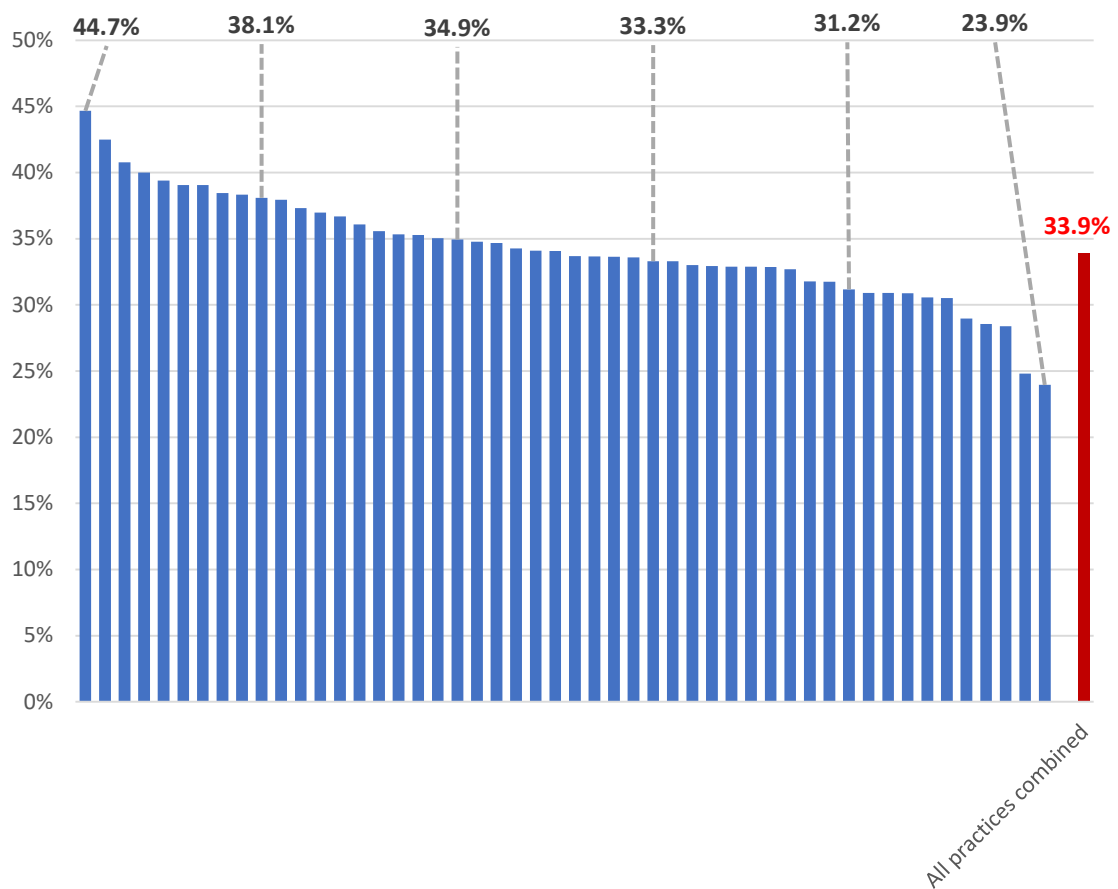
One finding in relation to gender is also worth noting. Since 2014, self-reported levels of obesity among adult females in East Ayrshire have been significantly above the Scottish average and have also been gradually increasing over time – 39% in the period 2014-17, 40% in 2015-18, and 41% in 2016-19. The most recent estimate of 41% in 2016-19 (95% CI: 34.5%, 48.2%) was the highest report generated in Scotland (point estimate: 30%; 95% CI: 28.6%, 30.8%).

Adult obesity estimates 2023: local general practice data

To further investigate levels of adults with obesity in Ayrshire and Arran, general practice BMI data was retrieved in September 2023 and is the most up to date local data available. Practices are anonymised here to avoid comparison. It should also be noted that the definition of 'adult' here relates to age range 18 or above, while that of SHeS relates to age range 16 or above.

Figure 2 shows adult obesity levels expressed as a percentage of practice lists at the time of data extraction. The results are shown for 50 individual general practices, including that of all practices combined, the latter essentially acting as a proxy for the whole of Ayrshire and Arran.

Figure 2: Adult obesity (BMI 30+), aged 18+, 2023: Percentage of adult patients in practice list, as recorded by 50 general practices in Ayrshire and Arran



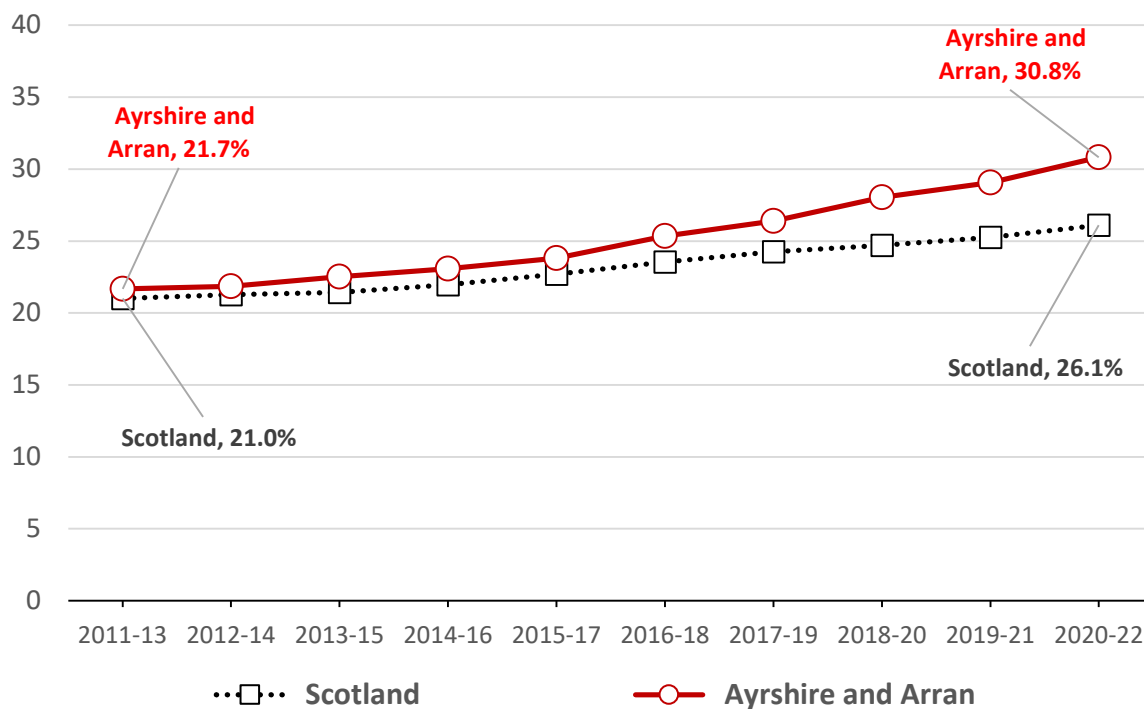
Source: General practice data in Ayrshire and Arran; accessed September 2023

The results demonstrate that adult obesity, as recorded by local general practices in Ayrshire and Arran, ranged from 23.9% to 44.7% (Figure 2). The average for all practices combined was 33.9%. This figure is congruent with the SHeS estimate of adult obesity standing at 34% in 2016-19, providing validation for the health survey finding, itself highly consistent since 2012.

The practice and survey findings, regarded together, thus give strong credence to the assertion that around 1 in 3 adults in Ayrshire and Arran are living with obesity, a proportion that is significantly higher than the Scottish average.

Maternal obesity trends: SMR02 data

Figure 3: Pregnant women recorded with obesity (BMI 30+), Scotland and Ayrshire and Arran, 2010/11 to 2021/22: Percentage of pregnant women with valid height and weight recorded at antenatal booking, 3-year rolling interval (financial year FYE)



Source: Public Health Scotland (SMR02); accessed via ScotPHO area profiles, October 2023

Data collected at antenatal booking allows trends for maternal obesity to be analysed at both health board and council area level. Figure 3 shows the 12-year trends in maternal obesity from 2010/11 to 2021/22 in Scotland and the NHS Ayrshire & Arran board area. Three-year rolling intervals have been used to smooth data trends and allow easier comparison between areas.

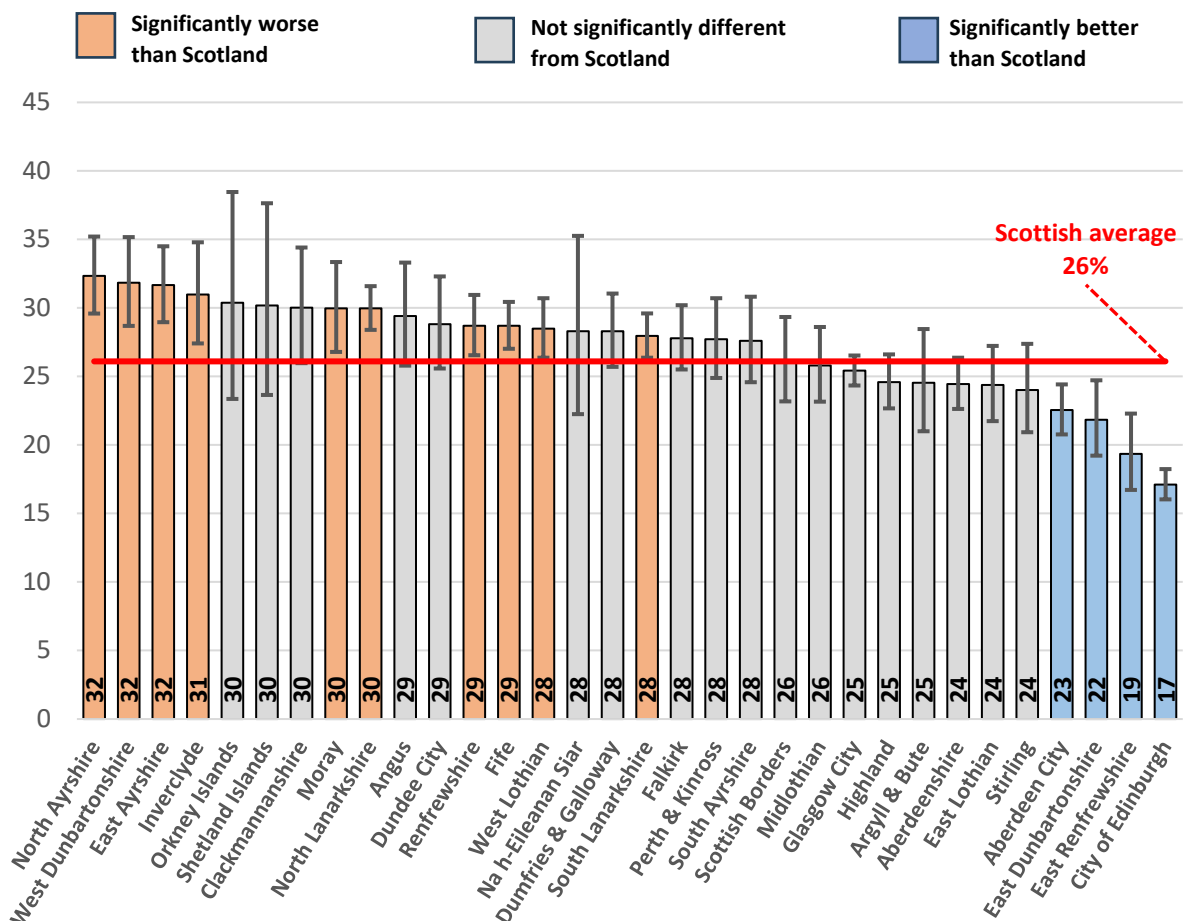
From Figure 3, it can be seen that strong and steady increases in percentages of pregnant women recorded with obesity at antenatal booking have occurred over time, both locally and nationally. The increase has been more marked locally than nationally – across the relevant period, there has been an absolute increase in Ayrshire and Arran of nine percentage points and a relative one of 42%, up from 21.7% in 2010/11-12/13 to 30.8% in 2019/20-21/22; meanwhile, a concurrent increase of five percentage points and a relative one of 24% has occurred in Scotland, from 21.0% to 26.1%. The local rate of increase over time has therefore been almost twice that of the national increase, and trend lines look set to continue rising and diverging in future. Moreover, the local figure has been significantly worse (i.e., higher than) the national comparator since the mid-2010s.

Of further note is that the level of obesity in pregnant women in Ayrshire and Arran is not as pronounced as that of local adult females in general – the point estimate for the former was 31% in the period 2019/20-21/22 (95% CI: 29.2%, 32.5%), while that for the latter was 36% in the period 2016-19 (95% CI: 32.1%, 40.0%). This suggests that obesity is about five percentage points less prevalent among pregnant women than among women in general in Ayrshire and Arran. This gap is mirrored in Scotland as a whole (26% and 31% respectively), noting that the equivalent Scottish figures are in turn five percentage points below those of Ayrshire and Arran.

Figure 4 shows breakdown, by Scottish council area, of obesity figures for pregnant women. In the period 2019/20-21/22, the local figures were as follows (in order of magnitude): 27.6% in South Ayrshire (ranked 20th in Scotland); 31.7% in East (ranked third in Scotland); and 32.3% in North (ranked first in Scotland). The East and North figures were significantly worse (higher) than the national comparator (26.1%), somewhat echoing the findings for adult obesity data in general. Over the period from 2010/11 to 2021/22, percentages of obesity recorded among pregnant

women have risen by 38% in East, 39% in South, and 48% in North, so that all local council area figures have risen faster than Scotland as a whole.

Figure 4: Pregnant women recorded with obesity (BMI 30+), 2019/20-21/22: Percentage of pregnant women with valid height and weight recorded at antenatal booking, by council area (95% confidence intervals shown)



Source: Public Health Scotland (SMR02); accessed via ScotPHO area profiles, October 2023

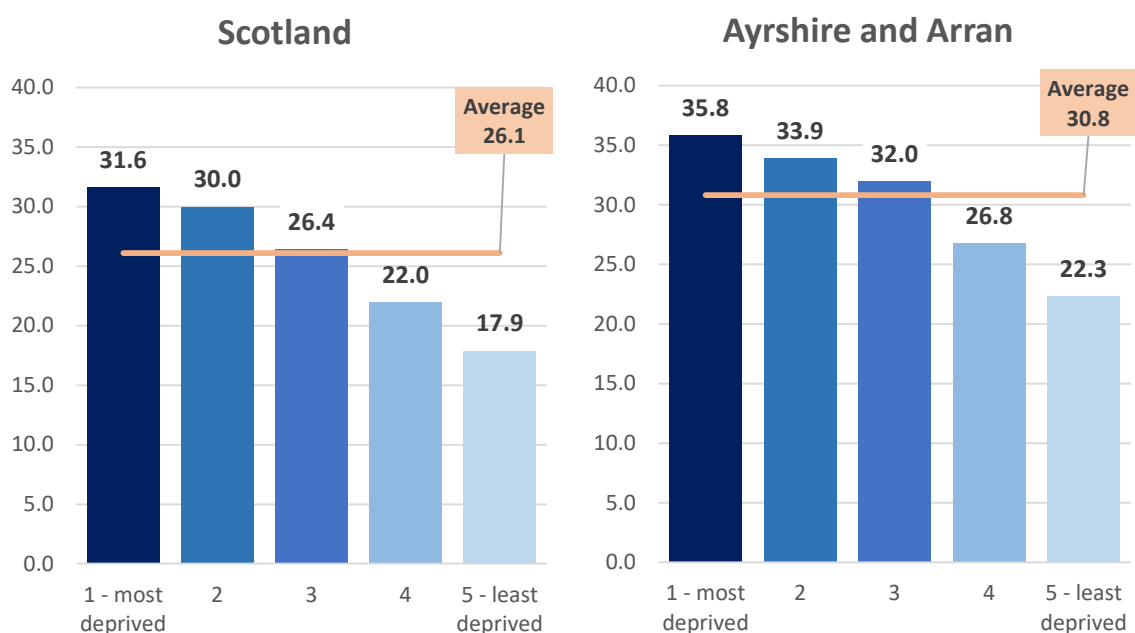
Inequalities in maternal obesity

Figure 5 shows breakdown of obesity figures for pregnant women by Scottish Index of Multiple Deprivation (SIMD) categories in Scotland and in Ayrshire and Arran for the 3-year interval 2019/20 to 2021/22. SIMD categories range from SIMD 1 (most deprived) to SIMD 5 (least deprived). The results show a clear gradient, at both national and local levels, of increasing levels of obesity with increasing levels of socioeconomic deprivation. In point of view, there was a 14-percentage point

difference between the most and least deprived categories in Scotland (32% v. 18%) and also in Ayrshire and Arran (36% v. 22%). This marked disparity highlights the sizable impact of deprivation on pregnant women, both in relation to obesity and the various factors underlying aetiology – i.e., causation and development – of obesity.

It is further worth noting that local obesity levels within every SIMD category are consistently four to six percentage points higher than their counterparts at national level.

Figure 5: Pregnant women recorded with obesity (BMI 30+), 2019/20-21/22: Percentage of pregnant women with valid height and weight recorded at antenatal booking, by SIMD category



Source: Public Health Scotland (SMR02); accessed via ScotPHO area profiles, October 2023

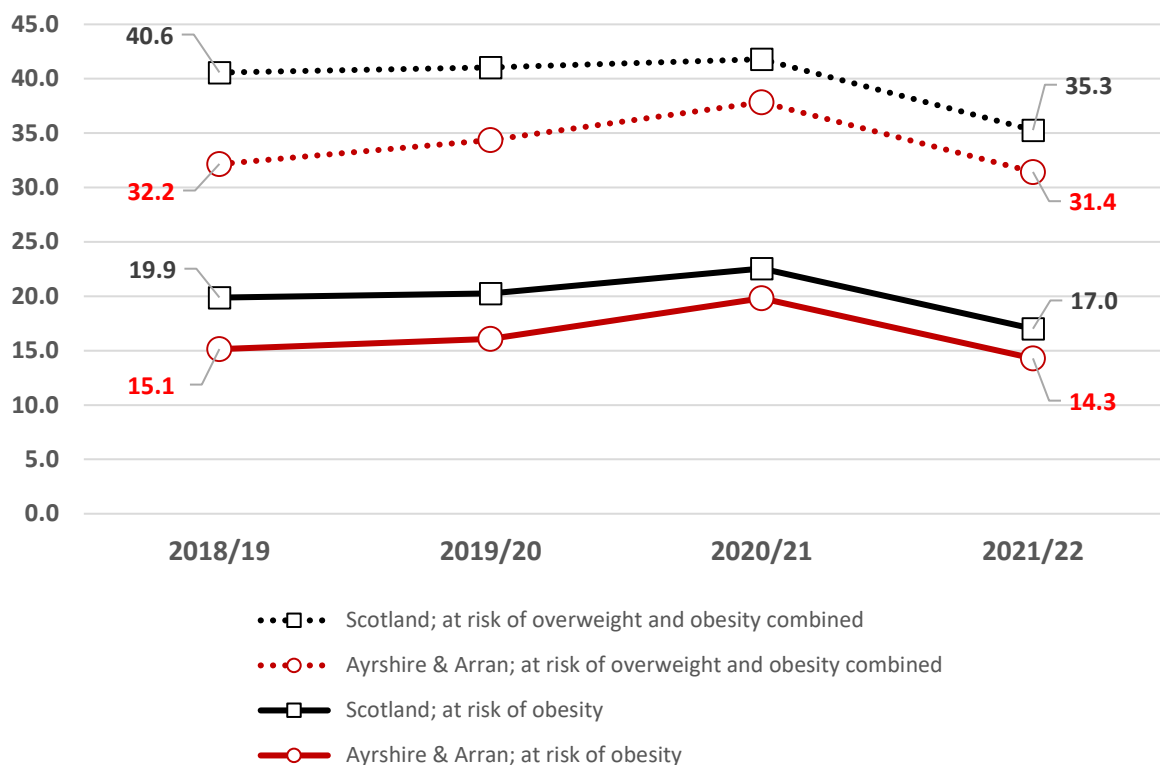
Prevalence of overweight and obesity in children

At 27-30 month health visitor review

Young children are weighed and measured as part of the universal health visiting timeline at the age of 27-30 months although up until this year, this data was not published. Data has been requested from Public Health Scotland for the last three years on BMI of children in this age group in Ayrshire.

Figure 6 shows Scottish and local area trends from 2018/19 to 2021/22 for childhood risk of overweight and obesity, based on data collected at the 27-30 month health visitor review. Trend lines are shown as follows: firstly, for 'at risk of obesity,' i.e., BMI greater than or equal to 95th centile (as represented by the solid lines in the chart); and secondly, for 'at risk of overweight and obesity combined,' i.e., BMI greater than or equal to 85th centile (as represented by the dotted lines).

Figure 6: BMI risk-related classifications (epidemiologically defined) at the 27-30 month review, from 2018/19 to 2021/22: Percentage of children at risk of obesity or at risk of overweight & obesity combined



Source: Public Health Scotland, 2022

With insufficient time points to verify any concrete changes over time – and the fact that COVID-19 is likely to have unduly affected data reported in 2020/21 – the area trends nevertheless reveal some key differences between Scotland and Ayrshire and Arran. Foremost is the fact that local rates have been consistently lower than the Scottish rates at all time points.

With respect to the **at risk of obesity** category, local rates have been three to five percentage points below the Scottish average since 2018/19 – in 2021/22, the percentage of children classified at risk of obesity was 17% in Scotland and 14% in Ayrshire and Arran. Even greater disparity exists between national and local statistics for the **at risk of overweight and obesity combined** category. Indeed, local rates have been four to eight percentage points below the Scottish average across the relevant period – in 2021/22, the percentage of children classified at risk of overweight or obesity combined was 35% in Scotland and 31% in Ayrshire and Arran.

Of further note, gaps between national and local trends for the two BMI risk-related categories examined here have slightly narrowed over time, becoming closer during and following the outbreak of COVID-19.

Local analysis of data tracking BMI between 27-30 months and Primary 1 among children born in 2014 and 2015 showed that being overweight or obese at 27-30 months was highly predictive of future overweight and obesity at Primary 1, highlighting the importance of early years healthy weight to future health outcomes. Living in the most deprived areas was predictive of obesity at 27-30 months and Primary 1 (Campbell, 2022).

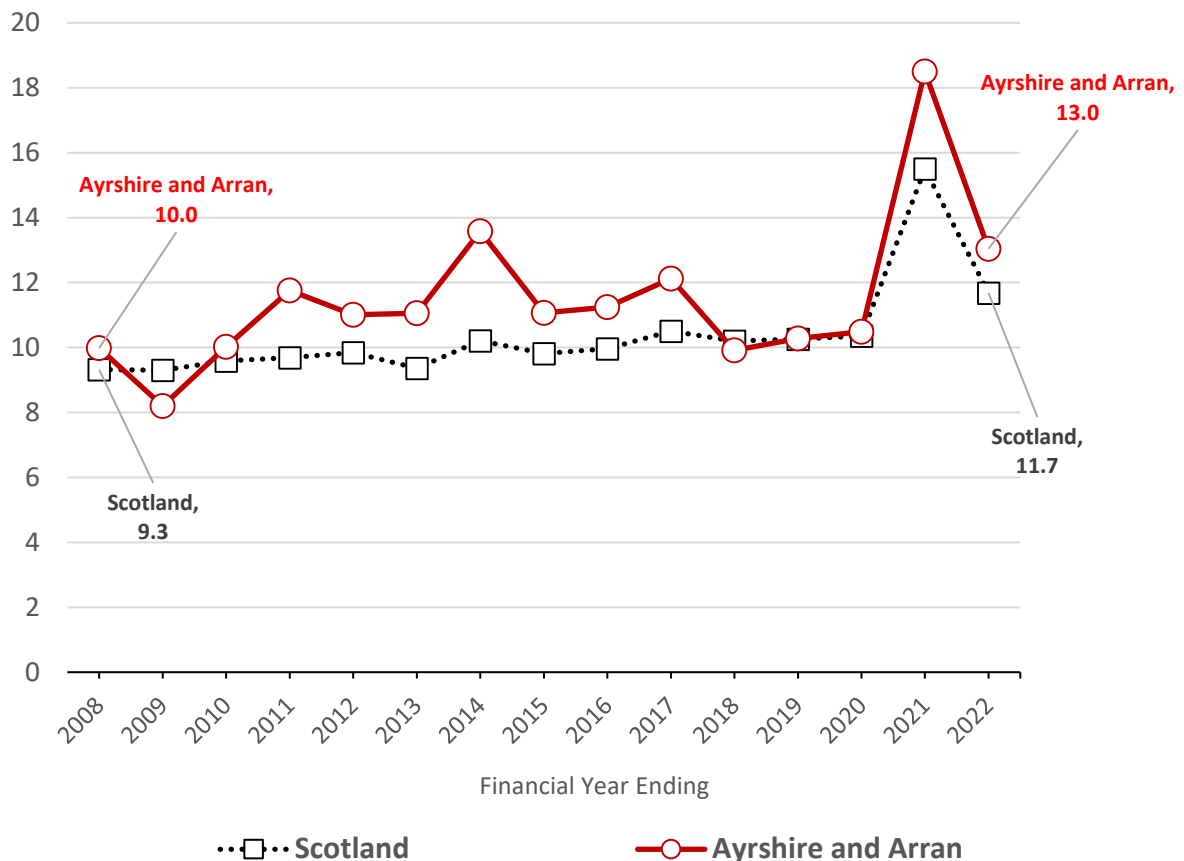
Primary 1 school children

Public Health Scotland provides statistics on BMI for Primary 1 school children (those aged around 5 years old). Statistics are derived from height and weight measurements collected at health reviews in Primary 1. In school year 2021/22, a total of 52,732 children across Scotland had valid height and weight measurements recorded in Primary 1, approximately 92% of all children in Primary 1. Coverage was significantly higher in 2021/22 than in the previous two years, when it was low due to the impact of the COVID-19 pandemic on school opening and conduct of health reviews.

Figure 7 shows proportions of children classified as being at risk of obesity – this risk is defined as having a BMI greater than or equal to the 95th centile. Trends are

shown for Scotland and Ayrshire and Arran over the 14-year period from 2007/08 to 2021/22.

Figure 7: Children at risk of obesity (epidemiologically defined risk), Scotland and Ayrshire and Arran, 2007/08 to 2021/22: Percentage of all Primary 1 school children with valid height and weight recorded at health review



Source: Public Health Scotland; Primary 1 health review data dashboard, accessed October 2023 [Primary 1 Body Mass Index \(BMI\) statistics Scotland - School year 2021 to 2022 - Primary 1 Body Mass Index \(BMI\) statistics Scotland - Publications - Public Health Scotland](#)

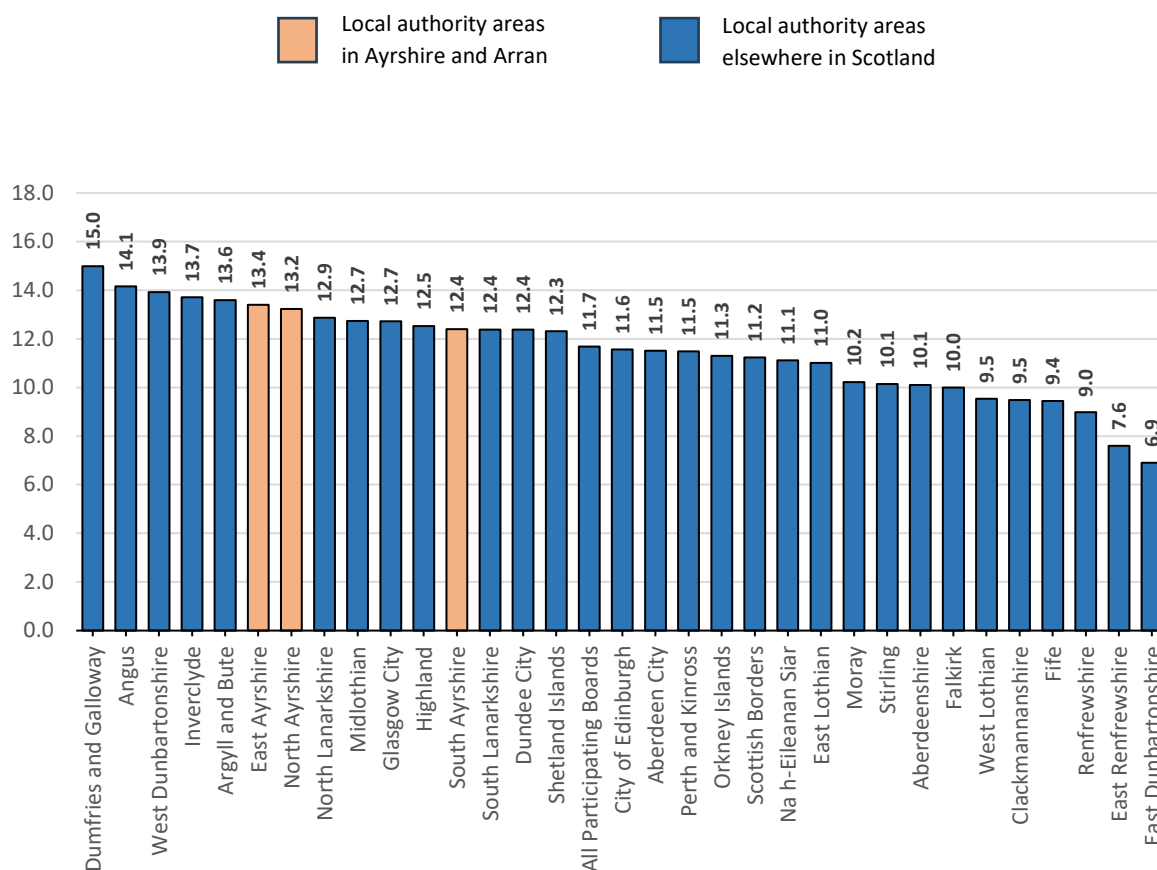
Results show that local and national trends for proportions of Primary 1 children at risk of obesity have largely followed each other over the last 14 years. While local rates rose for a while above national rates during the earlier part of the 2010s, area rates have somewhat converged again since that time. In 2021/22, rates were 13.0% in Ayrshire and Arran and 11.7% in Scotland, a difference exceeding one percentage point. This compares to 10.0% locally and 9.3% nationally in 2007/08, a difference of less than one percentage point.

Examining change over time, local rates increased by around three percentage points from 2007/08 to 2021/22, amounting to a relative increase of 31%, while the national rate increased by over two percentage points in absolute terms and 25% in relative terms. Proportions of Primary 1 school children at risk of obesity have therefore increased both locally and nationally in a fairly congruent fashion over the interval shown. While spikes observed in 2020/21 may be an artefact of logistical problems experienced during the pandemic, results for 2021/22 confirm an ongoing upward trend that was already apparent in the pre-pandemic period.

A point worth noting is that area statistics for the Primary 1 data were closer than that observed for the equivalent 27-30 month data (compare Figures 6 and 7, focusing on risk of obesity trends shown in Figure 6). In 2021/22, the local figure was three percentage points above the national figure at the 27-30 month health review, compared to just over one percentage point at the Primary 1 health review. This indicates that the geographical gap in risk of obesity narrows as children become older. Moreover, adult obesity was found to be around five percentage points higher locally than nationally (as reported above), suggesting that a host of lifestyle, socioeconomic and other factors in the local area may be heavily countering advantages of lower risk of obesity demonstrated at an earlier stage of life.

Figure 8 shows breakdown, by Scottish local authority area, of Primary 1 school children identified at risk of obesity in 2021/22. The range of rates extended from 6.9% reported in East Dunbartonshire to 15.0% reported in Dumfries and Galloway, amounting to an eight-percentage point difference between the extremes. Local results in 2021/22 were as follows, in order of increasing magnitude: 12.4% in South, 13.2% in North, and 13.4% in East; and in terms of rankings, South was 12th highest in Scotland, North seventh, and East sixth.

Figure 8: Children at risk of obesity (epidemiologically defined risk), 2021/22: Percentage of all Primary 1 school children with valid height and weight recorded, by local authority area in Scotland



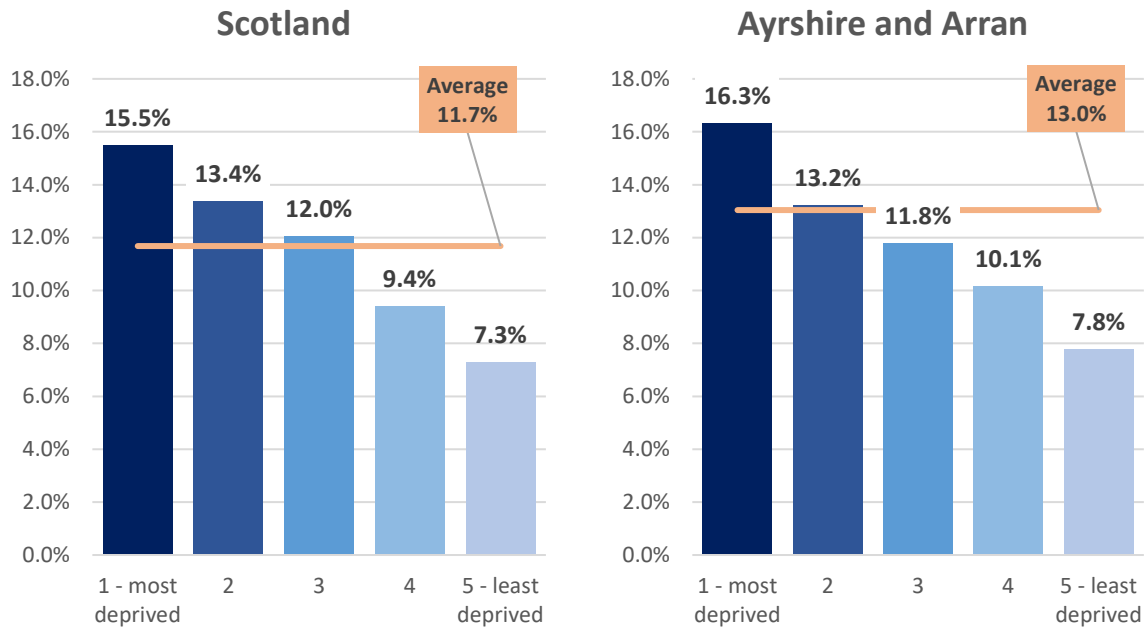
Source: Public Health Scotland; Primary 1 health review data dashboard, accessed October 2023 [Primary 1 Body Mass Index \(BMI\) statistics Scotland - School year 2021 to 2022 - Primary 1 Body Mass Index \(BMI\) statistics Scotland - Publications - Public Health Scotland](#)

Inequalities in childhood obesity

Figure 9 shows breakdown, in 2021/22, of Primary 1 schoolchildren classified at risk of obesity by SIMD category in Scotland and Ayrshire and Arran.

Local and national results were highly congruent, showing a straightforward stepwise decrease in risk of obesity as area deprivation decreases. The difference between least and most deprived populations was eight percentage points nationally and eight and a half percentage points locally, showing a similar degree of disparity.

Figure 9: Children at risk of obesity (epidemiologically defined risk), Scotland and Ayrshire and Arran, 2021/22: Percentage of all Primary 1 school children with valid height and weight recorded, by SIMD category

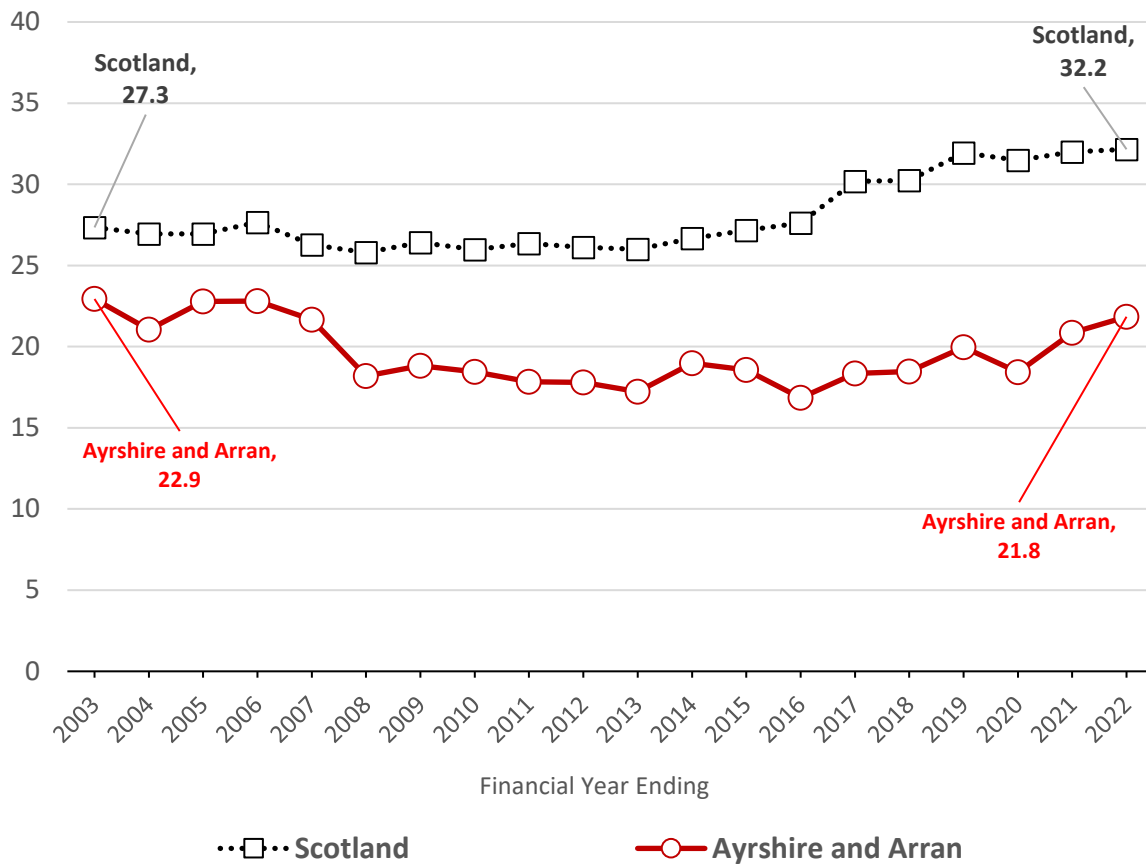


Source: Public Health Scotland; Primary 1 health review data dashboard, accessed October 2023 [Primary 1 Body Mass Index \(BMI\) statistics Scotland - School year 2021 to 2022 - Primary 1 Body Mass Index \(BMI\) statistics Scotland - Publications - Public Health Scotland](#)

Exclusive breastfeeding at 6-8 weeks

Breastfeeding rates in Scotland are monitored and published annually. The information is collected at Health Visitor reviews of children at around 10-14 days (First Visit), 6-8 weeks, and 13-15 months of age. Figure 10 shows the trends in Scotland and Ayrshire and Arran for rates of exclusive breastfeeding at the 6-8 week review.

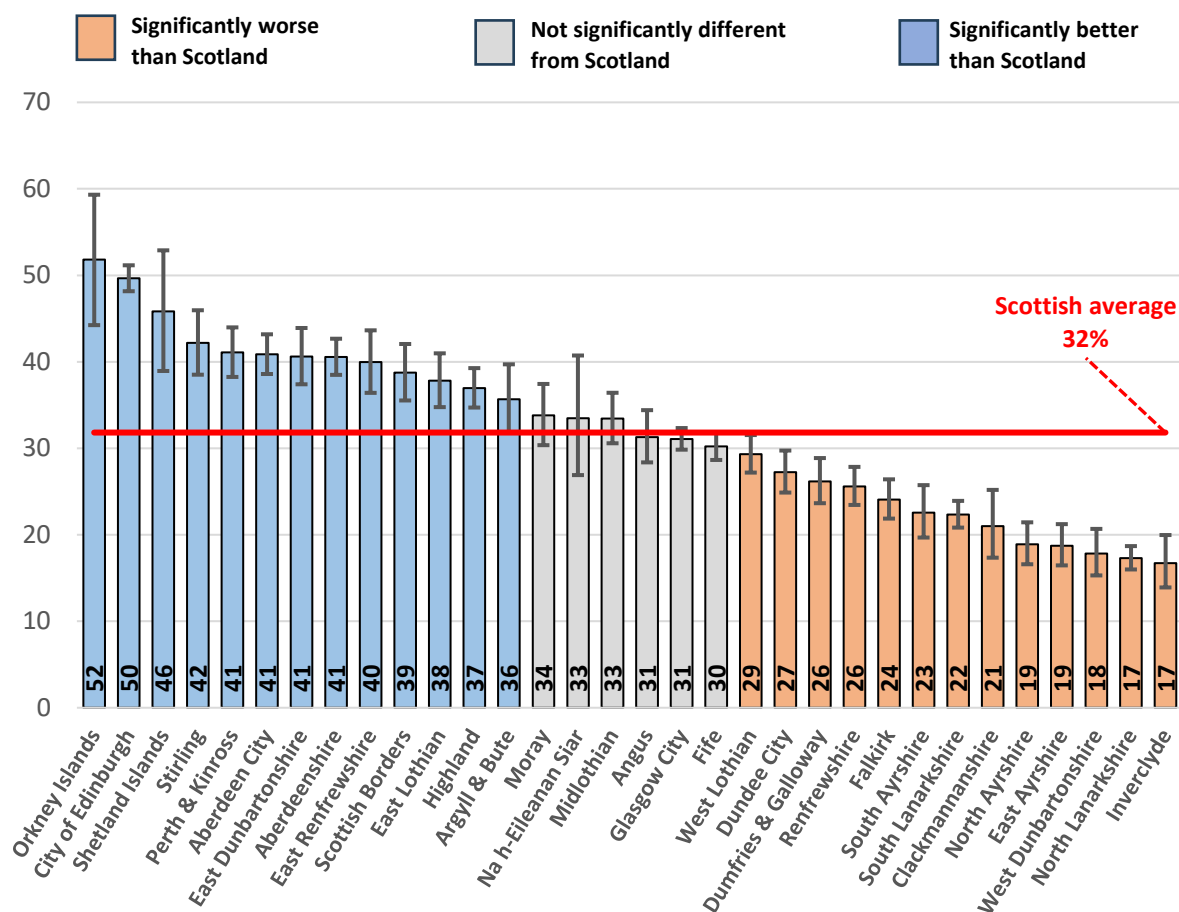
Figure 10: Babies exclusively breastfed at 6-8 weeks, Scotland and Ayrshire and Arran, 2002/03 to 2021/22: Percentage of all babies reviewed at 6-8 weeks



Source: Public Health Scotland; Infant feeding statistics dashboard, accessed October 2023
[Dashboard - Infant feeding statistics - Financial year 2021 to 2022 - Infant feeding statistics - Publications - Public Health Scotland](#)

Results show that exclusive breastfeeding rates at 6-8 weeks in Ayrshire and Arran have remained consistently and significantly well below Scottish rates over a period extending from 2002/03 to 2021/22. Moreover, the gap between area statistics has widened as the national rate has improved by five percentage points, from 27% in 2002/03 to 32% in 2021/22, in contrast to the local rate which has fallen overall by one percentage point, from 23% in 2002/03 to 22% in 2021/22. This amounts to a gap of 10% between local and national rates in 2021/22, compared to a gap of only 4% back in 2002/03.

Figure 11: Babies exclusively breastfed at 6-8 weeks, 2018/19-20/21:
Percentage of all babies with valid feeding status recorded, by council area
(95% confidence intervals shown)



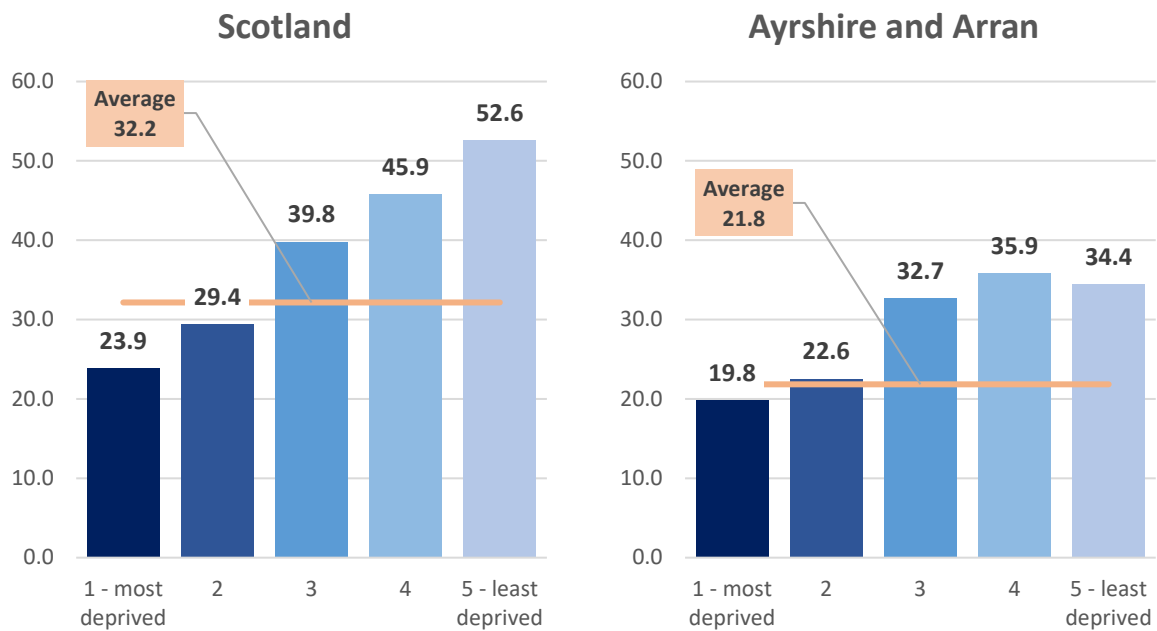
Source: Child Health Systems Programme Pre-school (CHSP-PS); accessed via ScotPHO area profiles, October 2023

Figure 11 shows breakdown, by Scottish council area, of exclusive breastfeeding rates at 6-8 week review. In the period 2018/19-20/21, the local figures were as follows (in decreasing order of magnitude): 22.6% in South Ayrshire (ranked eighth lowest in Scotland); 18.9% in North (ranked fifth lowest in Scotland); and 18.7% in East (ranked fourth lowest in Scotland). All local council areas generated rates that fell significantly below the national comparator (32.3%), demonstrating that the low rates for Ayrshire and Arran as a whole are an East, North and South issue. Further analysis at intermediate geography level revealed that the more deprived parts of Ayrshire and Arran were contributing substantially to the low rate seen at health board area level.

Inequalities in exclusive breastfeeding

Figure 12 shows breakdown, in 2021/22, of exclusive breastfeeding figures at 6-8 weeks by SIMD category in Scotland and Ayrshire and Arran.

Figure 12: Babies exclusively breastfed at 6-8 weeks, Scotland and Ayrshire and Arran, 2021/22: Percentage of total number of babies reviewed, by SIMD category



Source: Public Health Scotland; Infant feeding statistics dashboard, accessed October 2023
[Dashboard - Infant feeding statistics - Financial year 2021 to 2022 - Infant feeding statistics - Publications - Public Health Scotland](#)

At Scottish level, results show a pronounced stepwise increase in rates of exclusive breastfeeding with decreasing levels of socioeconomic deprivation. There is a marked 29-percentage point difference between least and most deprived categories, so that the percentage of mothers exclusively breastfeeding their infants at 6-8 weeks in the least deprived areas is 2.2 times greater than that of mothers in the most deprived areas.

While the local pattern follows the Scottish pattern over the first four deprivation categories, from SIMD 1 to SIMD 4, the result for SIMD 5 in Ayrshire and Arran is an unexpected drop, of one and a half percentage points, down from that of SIMD 4.

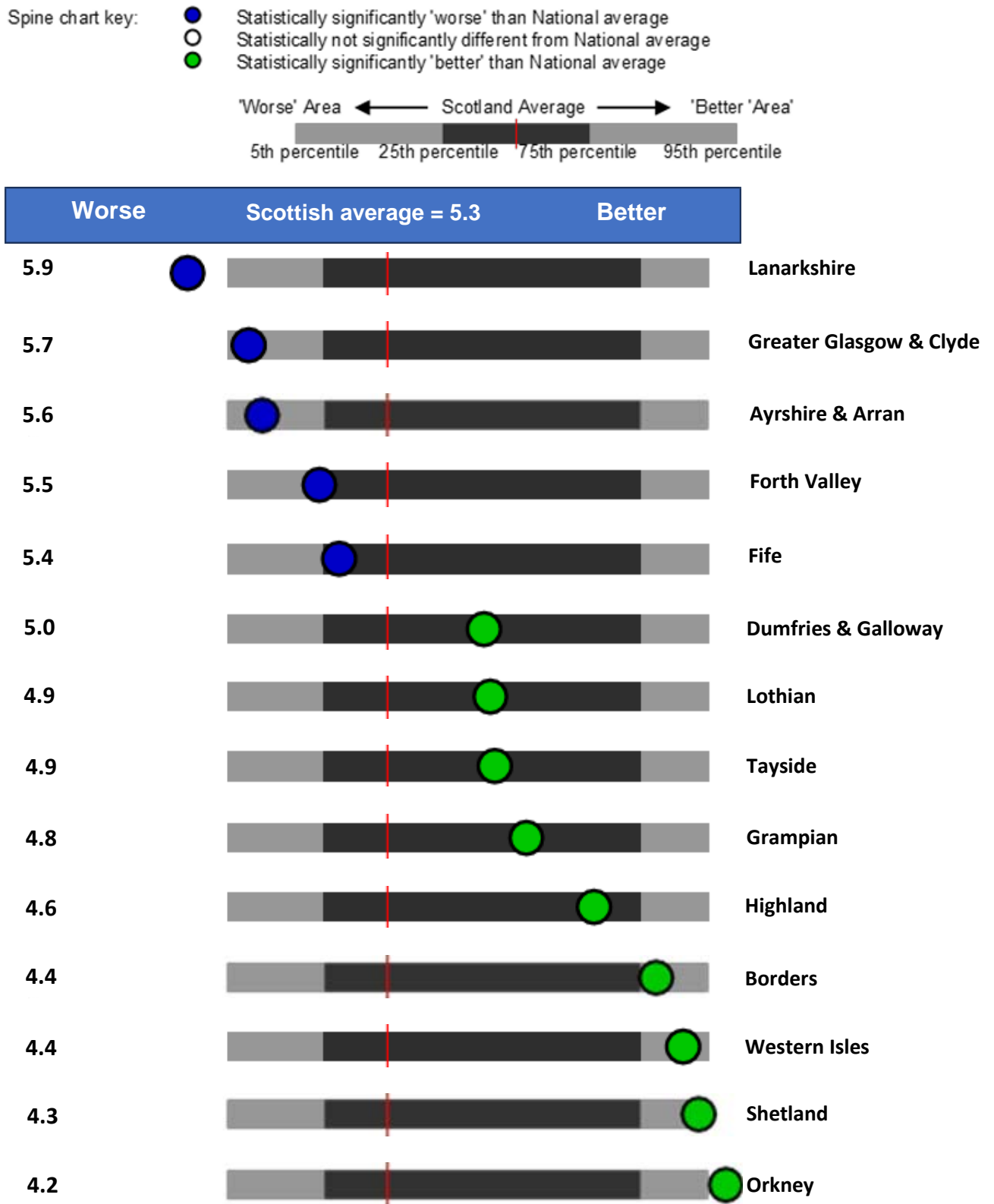
Consequently, the disparity between most and least deprived reports is less marked locally than nationally – amounting to a 15-percentage point difference, which although sizeable is far less pronounced than that for Scotland as a whole. In Ayrshire and Arran, the percentage of mothers exclusively breastfeeding their infants at 6-8 weeks in the least deprived areas is 1.7 times greater than that of mothers in the most deprived areas.

Finally, exclusive breastfeeding rates within SIMD 1 to SIMD 4 categories were three to ten percentage points lower locally than nationally, while the corresponding gap in SIMD 5 (least deprived) was a notable 18-percentage points.

Type 2 diabetes

The prevalence of type 2 diabetes in Scotland has risen steadily over the last decade. Figure 13 shows prevalence of type 2 diabetes by NHS Board area. Rates shown are age-sex standardised and per 100 population. The rates range from 4.2 per 100 in Orkney to 5.9 per 100 in Lanarkshire, and the Scottish average was 5.3 per 100. The rate in Ayrshire and Arran was third highest in Scotland at 5.6 per 100 and significantly worse than the national comparator. The numerator for the local rate was 23,546, denoting the number of people in Ayrshire and Arran identified as having type 2 diabetes.

Figure 13: Prevalence of type 2 diabetes, all persons, 2021: Age-sex standardised rate per 100 population



Source: Scottish Diabetes Group
[Diabetes-Scottish-Diabetes-Survey-2021-final-version.pdf \(diabetesinscotland.org.uk\)](https://diabetesinscotland.org.uk/Diabetes-Scottish-Diabetes-Survey-2021-final-version.pdf)

General practice data on the prevalence of pre-diabetes among the population in Ayrshire and Arran was retrieved in August 2023 and is the most up to date available. Estimates for all 53 practices showed that in 2022/23, approximately 736 people were diagnosed with pre-diabetes, bringing the total number of people living with pre-diabetes in Ayrshire and Arran to a total of approximately 6,029.

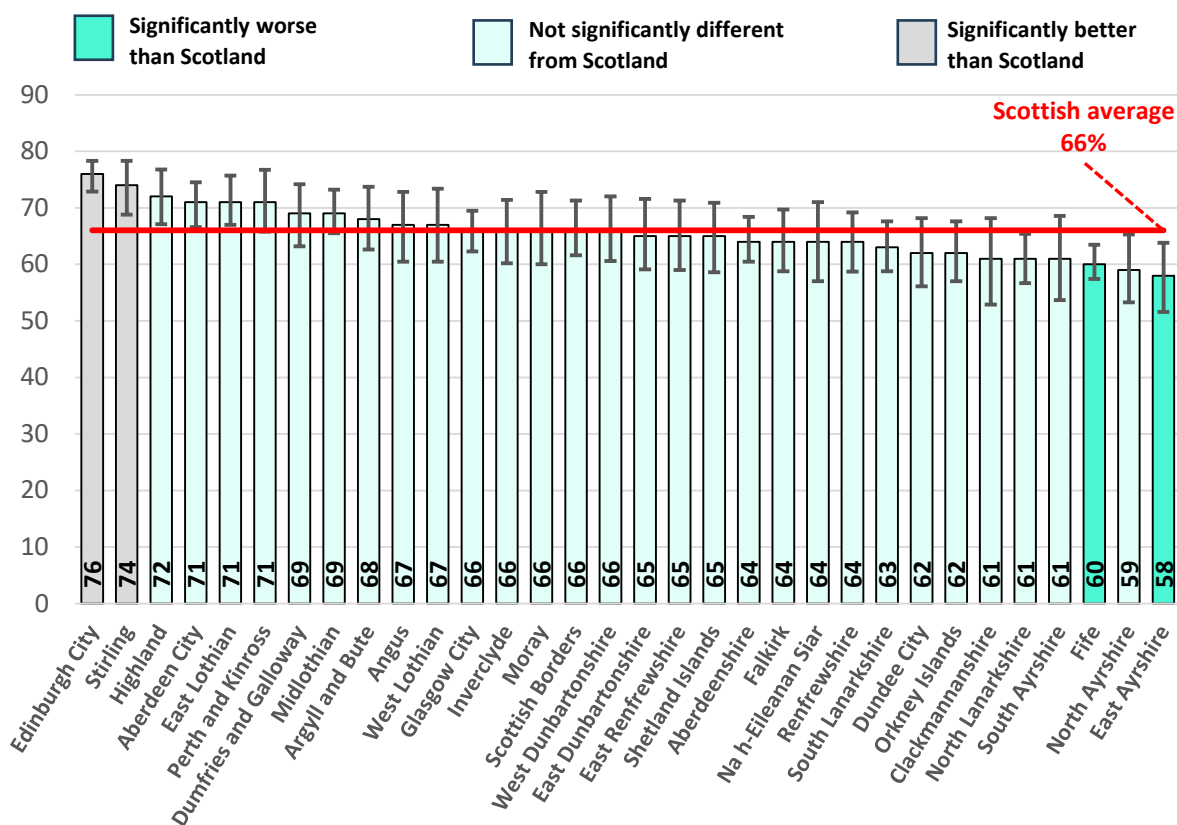
Physical activity

In July 2011, the Chief Medical Officers of each of the four UK countries agreed and introduced revised guidelines on physical activity. As a result, trends are available from 2012 onwards. The current activity guidelines advise adults to accumulate 150 minutes of moderate activity or 75 minutes of vigorous activity per week or an equivalent combination of both, in bouts of 10 minutes or more.

From self-reported data published in the Scottish Health Survey (SHeS), the estimated percentage of adults in Scotland meeting physical activity guidelines, over the period from 2017 to 2021, was 66% (95% CI: 65.2%, 67.2%). This compares to 59% (95% CI: 55.6%, 63.0%) in Ayrshire and Arran, being the lowest rate generated among all 14 NHS Board areas in Scotland. This disparity of seven percentage points was found to be statistically significant. Fife was the only other NHS Board area yielding a report (of 60%) which was significantly lower than the Scottish average; and Lothian was the only NHS Board area generating a report (of 73%) which was significantly higher than the national comparator.

Examination of the data by council area revealed that the problem of relatively diminished levels of meeting physical activity guidelines in Ayrshire and Arran appears to be a problem shared across all three local authority areas (Figure 14). Reports for the three areas were as follows, in order of decreasing magnitude – 61% in South (95% CI: 53.7%, 68.6%); 59% in North (95% CI: 53.3%, 65.3%); and 58% in East (95% CI: 51.6%, 63.8%). Reports in the three areas were among the four lowest in Scotland, along with that of the Fife council area. In addition, the East report was significantly lower than the Scottish average.

Figure 14: Physical activity - meet UK guidelines, aged 16+, 2017-21:
Percentage of adults surveyed, by council area (95% confidence intervals shown)



Source: Scottish Health Survey; accessed October 2023

Some distinctions between genders in relation to their meeting physical activity guidelines were found in the 2017-21 reports. In particular, men in Ayrshire and Arran yielded a report significantly lower than the average for all Scottish men (62% v. 71%). And while the female report was comparatively low in Ayrshire and Arran, it was not significantly different from the average for all Scottish women (57% v. 62%). Moreover, these statistics reveal a wide margin of nine percentage points between Scottish men and women meeting the guidelines, compared to a narrower margin of five percentage points between local men and women.

Finally, when these results are considered alongside the adult obesity results presented above, the elevated levels of adult obesity and reduced levels of meeting physical activity guidelines would suggest, in tandem, that sedentary lifestyle issues

among local adults may have contributed in some fashion to the obesity levels experienced in Ayrshire and Arran.

Impact and causes of overweight and obesity



Impact and causes of overweight and obesity

Impact of overweight and obesity on health

Overweight and obesity have a significant impact on physical and mental health and wellbeing (Figure 15). Studies have shown children living with obesity are more likely to have poorer physical and psychological health, and they are more likely to be absent from school than children in the healthy weight range. These negative consequences are likely to persist into adulthood, posing a further risk to health. In addition, children who are above a healthy weight are at increased risk of having a high BMI in adulthood (SIGN, 2010).

Figure 15: consequences of overweight and obesity



Adults living with obesity are more likely to suffer from a range of conditions including type 2 diabetes, cardiovascular disease, hypertension, 13 types of cancer, musculoskeletal problems, Alzheimer's disease and dementia, mental health

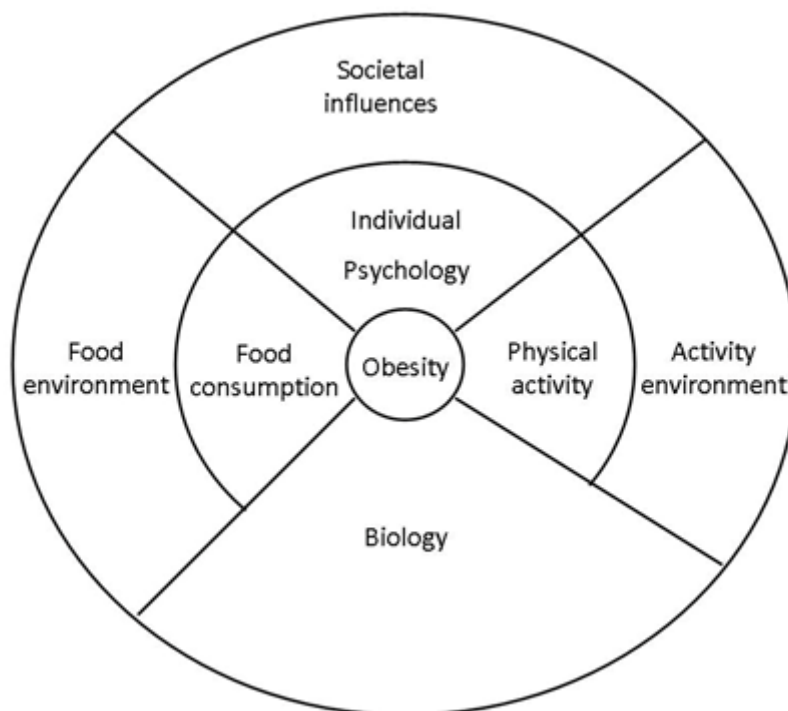
problems, and premature death (Obesity Action Scotland, 2023). Obesity in pregnancy poses increased risk of serious adverse outcomes including miscarriage, congenital conditions, gestational diabetes, postpartum haemorrhage, pre-eclampsia, higher caesarean section rate and complications during birth (Public Health Scotland, 2022).

Economic impact of overweight and obesity

The economic implications of obesity are considerable and go beyond the direct costs to the NHS. It is estimated that the annual cost to NHS Scotland of treating conditions related to living with overweight or obesity in 2022 was £776 million. However, the wider total costs to the Scottish economy was estimated to be £5.3 billion, which equates to 3% of Scotland's GDP (Nesta 2023).

Causes of overweight and obesity

Figure 16: causes of overweight and obesity



Source: Foresight, 2007

Obesity has no single cause and is the result of a number of complex factors operating at different stages of life including:

Biological factors – research findings point to certain genetic characteristics which may increase an individual’s susceptibility to obesity. It is suggested this genetic susceptibility would need to be coupled with other contributing factors, such as a diet high in calories and low rates of physical activity, to have a significant effect on weight.

Impact of early life and growth patterns – evidence suggests that babies who are breastfed are less likely to have obesity as older children and adolescents (Horta et al, 2023). It is well established that breastfed babies show slower growth rates than formula fed babies as they are able to control the amount of milk they consume, therefore, they may learn to self-regulate their energy intake better.

Food consumption and food environment – dietary risk factors for obesity are diets low in fibre and energy dense diets from regular consumption of foods high in fat and sugar-rich drinks, particularly in large volumes. A typical diet in Scotland is one that is too high in fat, sugar and salt, and too low in fruit and vegetables, fish and complex carbohydrates including dietary fibre. What surrounds us in our environment, shapes us. Data from Food Standards Scotland demonstrates that eating out of home is associated with the risk of obesity as a result of foods bought often having a higher calorie content than foods eaten at home. Foods eaten out of home are often larger in portion size and are typically high in fat, sugar and/or salt. In 2021, people in Scotland made an average of three visits per week to out of home outlets and the average spend per trip was £5.58. The majority of visits (74%) were to quick service outlets, cafes, bakery and coffee shops, convenience stores and supermarket front of store and cafes. Full service restaurants, pubs and bars accounted for a small proportion of visits (7%) (Food Standards Scotland, 2021). Commercial practices such as in-store positioning and marketing of food and drinks including price discounts, special offers, packaging and product size; television advertising and sponsorship, all have an influence on food and drink consumption.

Physical activity and activity environment – *“If physical activity were a drug, we would refer to it as a miracle cure, due to the great many illnesses it can prevent and help treat.”* (UK Chief Medical Officers, 2019). Being physically active is one of the

most important things we can do to maintain our physical and mental health, a few examples of the benefits of participating in regular physical activity include up to 50% lower risk of type 2 diabetes, 50% lower risk of colon cancer, up to an 83% lower risk of osteoarthritis as well as improving sleep, lowering stress levels and helping maintain a healthy weight (2018 Physical Activity Guidelines Advisory Committee). Over the last few decades society has changed in that there has been a general reduction in energy expenditure. This is largely as a result of changes to employment which mean that many more people are now employed in sedentary jobs. In addition, a rise in car ownership and technological advances has led to more labour-saving devices being used in homes and workplaces.

Individual choices and societal influences – individual choices of food and activity behaviours are determined by many factors including parental and family influence, personal beliefs and attitudes, religious and cultural background, the control or perceived control people have over their health and wellbeing, education, income, where people live, their motivation to take up physical activity opportunities and to access healthier food and drinks. Wider environmental factors include way that towns and cities are configured, for example the location of housing estates, the availability of safe, well-lit walk and cycle ways, the positioning of ‘out of town’ retail outlets, the prominence of escalators rather than stairs, and the proliferation of fast food outlets. While some of these influences are the within the control of local authorities, they are not simple to change.

Links to type 2 diabetes

Living with overweight or obesity is a significant risk factor for the development of type 2 diabetes. Over 87% of people with type 2 diabetes are above a healthy weight (Scottish Government, 2018a). It is estimated that 9% of NHS expenditure is attributable to the cost of treating type 2 diabetes and complications associated with type 2 diabetes. There is substantial evidence that behavioural interventions which support people to lose weight and increase their physical activity, can significantly reduce type 2 diabetes and other connected morbidities. Women with obesity during pregnancy are at high risk of developing gestational diabetes and have poorer pregnancy outcomes than women within a healthy weight range. Furthermore, half

of women diagnosed with gestational diabetes develop type 2 diabetes within five years of the birth of their baby (Scottish Government, 2018a).

National and local policy drivers



National and local policy drivers

National policy



Scottish Government and COSLA (Convention of Scottish Local Authorities) affirmed their commitment to improving life expectancy and reducing inequalities through publication of the [Public Health Priorities for Scotland](#) (Scottish Government 2018b). Whilst several of the priorities are interlinked, public health priority 2 and 6 are most relevant to this work:

- A Scotland where we flourish in our early years
- A Scotland where we eat well, have a healthy weight and are physically active.

[A Healthier Future – Scotland’s Diet and Healthy Weight Delivery Plan](#) (2018c) focuses on the prevention and treatment of obesity. The Scottish Government has committed to consulting on proposed regulations to restrict the promotion of less healthy food and drink where they are sold to the public, but will not introduce mandatory calorie labelling in the out of home sector until further evidence on the impact of such measures on people with an eating disorder. In 2018, the UK Government introduced the soft drinks industry levy, or the sugar tax, to help reduce the sugar in soft drinks as a measure to reduce child obesity. Historically, actions to improve weight have tended to focus on changing individual behaviour on diet and physical activity rather than structural changes to the drivers of behaviour. Individual level change relies on a degree of personal agency and therefore may widen inequalities, and lead to weight related stigma. Although individual levels of change are necessary, these should be combined with upstream actions that promote healthier physical and social environments, as such population level policies are

more likely to be effective in improving health than those that focus on individuals (Rutter et al, 2017).

The Diet & Healthy Weight Delivery Plan is complemented by the Scottish Government's [Framework for the Prevention, Early Detection and Early Intervention of Type 2 diabetes](#). The Framework describes the direction and actions required to tackle the growing prevalence of type 2 diabetes. As type 2 diabetes is largely preventable, the plan concentrates on empowering individuals to mitigate their risk of diabetes and minimise the risk of complications through effective self-management.

In 2019, Public Health Scotland published [Standards for the delivery of tier 2 and tier 3 weight management services in Scotland](#). The purpose of the standards is to ensure a consistent, equitable and evidence-based approach to the treatment of overweight and obesity across weight management services in Scotland. The standards are applicable to adults and children aged 2-17 years and to assist Boards to meet the standards, additional funding was provided by Scottish Government.

[A systems-based approach to physical activity in Scotland](#) (Public Health Scotland, 2022) recommends step-wise approach using systems thinking and sets out a range of evidence based actions to increase physical activity at population level. Actions include creating active places for learning across all education settings; prioritising infrastructure for active travel; integration of urban design, transport and land use policies; promoting access to quality green/blue open spaces as well as sport and recreation spaces; integrating physical activity into routine care and clinical pathways; promoting workplace policies to provide opportunities for staff to be more physically active.

[Physical Activity Guidelines](#) are available across the life course including infants, toddlers and pre-school children, children and young people, adults and older adults. The guidelines highlight the importance of participation in a variety of activities on a regular basis, and the risks associated with being sedentary. For children, activities to develop muscle strength and healthy bones are advised, while activities to delay the natural reduction in muscle mass and bone density in older adults for example are recommended.

Implementation of these national frameworks in tandem will ensure that local services to support individuals to eat healthily, achieve a healthier weight, and be more physically active are accessible and acceptable.

Local policy

The Ayrshire Healthy Weight Strategy 2014 – 2024 was approved by Ayrshire and Arran NHS Board and the three Community Planning Partnerships in April 2014. The Strategy was developed by representatives from NHS Ayrshire & Arran, the three local authorities and the North Public Partnership Forum. The vision for the Strategy is to achieve the “healthiest weight possible for everyone in Ayrshire and Arran” and its aim is to halt the rise in the levels of overweight and obesity among children and adults by 2024 and ultimately reduce them. To achieve this aim, an initial pan Ayrshire three action plan was developed comprising of seven key themes:

- Awareness, knowledge, skills and empowerment
- Maternal and infant nutrition
- Availability and affordability of healthier food and drinks
- Active travel and active workplaces
- Built/natural environment and infrastructure for active travel
- Physical activity
- Weight management.

A pan Ayrshire implementation group was set up however when the first three year action plan ended it was agreed a local authority specific group should be set up, and subsequent three year actions plans developed. Work is at various stages with partners in North, East and South Ayrshire to update plans for beyond March 2024.

Implementation of these frameworks locally supports the vision and principles of Caring for Ayrshire ‘that care shall be delivered as close to home as possible, supported by a network of community services with safe, effective and timely access to high quality specialist services for those whose needs cannot be met in the community’. This is done through partnership with community services, weight management providers from local authorities and third sector, social prescribing and clear pathways to specialist services, psychology and bariatric services.

Examples of current work



Examples of current work

Breastfeeding



Promotion and support to initiate and continue breastfeeding is a fundamental area of care delivered by midwifery, health visiting and family nurse teams. Over the last three years maternity services, health visiting and family nurse services, and the Neonatal Unit were each reaccredited by the UNICEF UK Baby Friendly Initiative. Further, in December 2022 health visiting and family nurse partnership services were accredited as a Gold Baby Friendly service. The Baby Friendly Initiative is a staged accreditation programme supporting services to transform their care and implement best practice standards.

This prestigious award is internationally recognised as a mark of quality care; the assessment process has consistently shown that these standards have been maintained across services in Ayrshire. The assessment involves interviews with both staff and mothers. In feedback from all three assessments, staff were particularly commended for work in promoting close and loving relationships between babies and their mothers; their person centred care; and the kindness and consideration shown to mothers.

Over the last four years, Scottish Government funding has been used to develop an integrated infant feeding team bringing together staff from maternity and community infant feeding teams with the Breastfeeding Network. Breastfeeding peer support is offered to all first time mums who are breastfeeding on discharge from Ayrshire Maternity Unit up until their baby reaches the age of 6-8 weeks. NHS Ayrshire & Arran together with the three Health & Social Care Partnerships have committed to permanently fund this work from April 2023, and expand the service to all

breastfeeding mothers. During 2022/23, 611 first time mothers were offered peer support, and of those, 517 (84.6%) engaged with the service. At 6-8 weeks, 253 mothers (48.9%) were exclusively breastfeeding their baby, demonstrating the positive impact of collaborative working between maternity and health visiting services and the third sector.



This complements work to change local cultural attitudes towards breastfeeding by gathering support of local premises, such as cafes, restaurants, health centres, libraries, and so on to welcome mothers who wish to breastfeed when out and about with their baby, as part of the Scottish Breastfeeding Friendly

To date, 190 premises across Ayrshire have signed up to the Breastfeeding Friendly Scotland Scheme.

Where you can get more information

- Information on breastfeeding - [NHS Inform Ready Steady Baby!](#)
- Information on the Ayrshire Breastfeeding Network - [The Breastfeeding Network - Breastfeeding Support in Ayrshire](#)
- Information on the UNICEF Baby Friendly website - [UNICEF The Baby Friendly Initiative](#)
- Information from Parent Club - [ParentClub](#)
- Information on eating well for breastfeeding mothers - [First Steps Nutrition Trust - Eating Well Resources](#)

Improving health and wellbeing in pregnancy in Carrick

Public Health and Dietetic Health Improvement staff are working with North and South Carrick Community Learning Partnerships, Maternity Services and South Ayrshire's Thriving Communities team to support women within the Carrick area of South Ayrshire to improve health and wellbeing during pregnancy.

A needs assessment was undertaken to determine needs of local pregnant women. Women who were pregnant or had recently given birth were invited to complete an online survey. The survey explored a range of issues including current healthy eating knowledge, challenges to healthy eating, access to support or information, and physical activity levels. The survey was open from July to September 2023; 10 women completed the survey. Key points are summarised below:

- Most respondents were confident in looking after their health and wellbeing during pregnancy however they did report they had concerns during this time
- The greatest factors affecting health and wellbeing during pregnancy included mental health and wellbeing and money worries. Domestic violence and lack of childcare were also reported to be impacting factors
- Half of those who responded did not know where to access support/information during pregnancy and would have liked further information/support, with preferred delivery via evening groups within a community venue
- Areas for further support and information provision suggested by respondents included baby development, eating well in pregnancy, weight management, financial support, going home/getting ready for baby and mental/emotional wellbeing
- Most respondents did not report challenges in accessing healthcare services due to travel/remoteness
- Majority did not meet daily recommendation for fruit and vegetable intake
- Each week, respondents were physically active for 30 minutes or more; 7 days (n=3), 5 days (n=2) and 4 days (n=2).

Based on these findings, partners are now working collaboratively to develop a programme designed to improve health and wellbeing of pregnant women living in

the Carrick area, utilising established community-based approaches to engage women. The next steps include agreeing input from relevant teams and establishing available resources to develop and support programme delivery, including staffing and training needs.

Where you can get more information

- Information on eating well during pregnancy - [First Steps Nutrition Trust - Eating Well Resources](#)

Messy Munchers



Messy Munchers is a practical session aimed at parents and carers of young babies, and is delivered by the Dietetic Health Improvement Team.

The aim of the interactive session is to provide key information on starting a baby onto solid foods including when, why and how to wean babies, developmental signs of readiness, appropriate choices and textures, and promoting home cooked foods. Sessions are delivered monthly in targeted areas in each locality across Ayrshire.



Over the last year, 286 parents/carers attended a Messy Muncher session. Data is available for 203 families who attended; of those, 96 (47%) lived in the two most deprived quintiles (SIMD 1 and 2).

The Dietetic Health Improvement team works alongside a range of partners who support families with young children, which provides the opportunity to cascade key weaning messages through training on current recommendations. This year, 54 staff and volunteers have attended a training session.

Where you can get more information

- Information on Messy Munchers and useful resources - [NHS Ayrshire & Arran - Messy Munchers](#)
- More information on the Dietetic Health Improvement Team's work, search Facebook for 'Dietetic Health Improvement Team'
- Information on Food Standards Scotland - [Food Standards Scotland - Nutrition](#)

Supporting community food provision

Within Ayrshire and Arran there are over 60 food larders, 30 food bank centres and many more food provision areas. Over the past year the Dietetic Health Improvement Team have continued to work collaboratively to support food provision across Ayrshire, with the aim of providing information and practical support to enable individuals and families eat well within their budget.

The team deliver training courses to staff and volunteers on eating well on a budget using the CAN (Cheap And Nutritious toolkit). This was tailored with the foods available in food parcels, larders and food banks in mind. Cooking skills workshops are also delivered to key partners which helps them to support others to cook from scratch. Over the past year the team have delivered 'Eating Well' courses to 92 participants and delivered a cooking skills workshops to 34 participants. As a result of this course, four cooking skills groups in the community are being supported.



Two resources have been developed in partnership with the three local authorities, 'How to eat well with limited equipment and money' and 'Eating well on a budget', which complement existing resources such as 'Simple Meal Ideas' (easy canned/packets recipes). All resources have been distributed to foodbanks, food larders and pantries across Ayrshire.

Other initiatives include assessing if and how Best Start Foods can be accessible to young families through the food larders, contributing to community development approaches, participating in community events and awareness weeks such as Malnutrition Awareness Week.

Where you can get more information

- [Simple Meal Ideas - click Here](#)
- [Eating well on a budget](#)
- [How to cook and eat well with limited equipment and money](#)

Further information and support on local food provision:

- [East Ayrshire](#)
- [North Ayrshire](#)
- [South Ayrshire](#)

Child healthy weight programmes



Jumpstart

The Child Healthy Weight team continued to deliver the Jumpstart programme to support children and their families throughout Ayrshire and Arran to achieve a healthy weight. Jumpstart has been in place since 2009 and is a family and community based multi-component programme for children aged five to 17 years with a BMI on or above the 91st centile.

Sessions focus on healthy eating, physical activity and positive behaviour change, with children attending alongside their parents or carers.



Programmes provided include:

- Jumpstart Junior: ages 5-9 years
- Jumpstart Senior: ages 10-13 years
- JumpStart Teens: ages 14-17 years
- JumpStart Plus: children with additional support needs.

Each family is assigned a Health Coach who provides direct support and advice to the family through each phase of the programme. An initial 'well chat' is undertaken with the family and the Health Coach to ascertain the level of support required. The ethos of the programme is to work with the family and agree the level of support required allowing the family to have ownership of support.

Families are offered direct weekly support in the initial phase, consisting of a minimum of eight contact points, which are offered through face to face, video or telephone contact.

At the same time the child/young person can attend community physical activity sessions with the team based on age appropriate fun, interactive play/exercise activities.

On completion of the initial phase, families can choose to exit the programme or continue on to a maintenance phase. The maintenance phase can last up to a further 12 months, with optional catch up meetings held at three, six, nine and twelve months allowing families and Health Coach to assess how things are progressing and to possibly re-assess ongoing support.



Referrals

In 2022/23, 90 families were referred to the Jumpstart programme. The highest proportion of referrals were for children aged 5-9 years (n=39, 43.3%); 31 (34.4%) were for children aged 10-13 years; and 20 (22.2%) for children aged 14-17 years. A higher proportion of referrals were for boys (n=51 56.7%) compared to 39 (43.3%) of referrals for girls. Fourteen (15.5%) children referred had additional support needs. BMI centile was available at referral for 48 children; of those 42 children had a BMI on or above the 99.6th centile, meaning that from a clinical perspective, they were defined as having severe obesity. Six children had a BMI between 91st or less than 99.6th centile, defining them as clinically overweight.

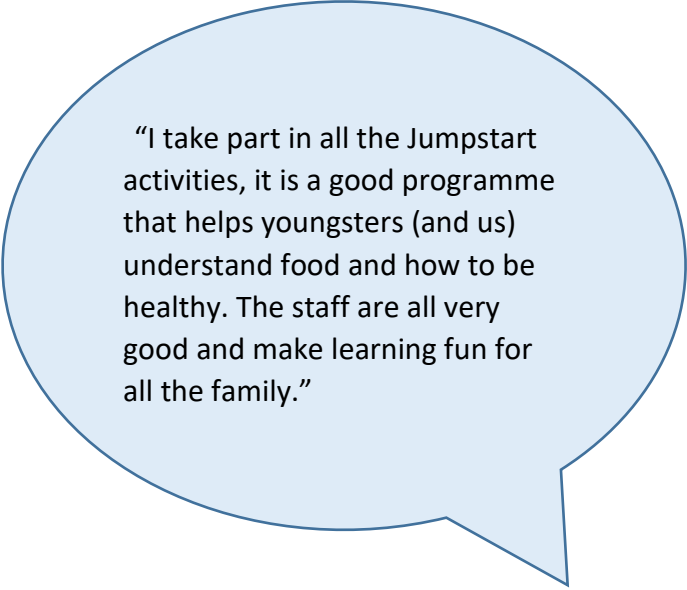
Table 2: Number of children referred to Jumpstart in 2022/23 by local authority and age

	Number of referrals	Age 5-9 years	Age 10-13 years	Age 14-17 years
East Ayrshire	26	8	13	5
North Ayrshire	33	15	10	8
South Ayrshire	31	16	8	7
Total	90	39	31	20

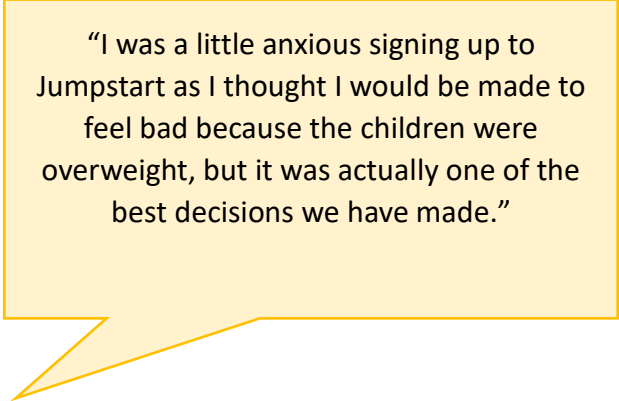
The referrals received by locality were fairly evenly split with 26 (28.8%) children from East Ayrshire; 33 (36.6%) from North Ayrshire; and 31 (34.4%) from South Ayrshire. Over three quarters of referrals were for families living in the two most deprived areas of Ayrshire (SIMD 1 and 2) (n=69, 76.6%). School nurses were the most frequent referrers to the programme (n= 28, 31.1%) followed by GPs (n=19, 21.1%); self-referrals (n=16, 17.8%); dietitians (n=12, 13.3%) and Paediatrics (n=9, 10%). Social Services and Health Visitors also referred families (n=6, 6.6% combined).

Of the 90 families referred to the child healthy weight service, 40 (44.5%) completed the initial phase of the programme. Of those, five families have since completed the full 12 months of the programme, while 31 families are currently participating in the maintenance phase, and four families chose to leave the programme on completion of the initial phase as they were happy they had received enough support by that point.


Of the remaining 50 families referred, 17 (18.9%) are currently participating in the initial phase of the programme while 33 (36.7%) families have been withdrawn, either due to not starting the programme despite repeated attempts to engage them (n=25), or dropping out during the initial phase (n=8). Analysis of available data shows that the programme helped families to make positive changes; for example, average BMI remained static among 44 children from assessment to the end of the initial stage of the programme. In addition, average fruit and vegetable consumption and average weekly physical activity levels of children both increased.



“I take part in all the Jumpstart activities, it is a good programme that helps youngsters (and us) understand food and how to be healthy. The staff are all very good and make learning fun for all the family.”



“I was a little anxious signing up to Jumpstart as I thought I would be made to feel bad because the children were overweight, but it was actually one of the best decisions we have made.”



“The programme is good and I especially enjoyed the video calls with Steven, we would toss a coin to see who had to do the fun challenges. Steven let me schedule and run the meetings.”

Feedback from one family with two children aged 11 and 15

Feedback from Mum
<p>“I was a little anxious signing up to Jumpstart as I thought I would be made to feel bad because the children were overweight, but it was actually one of the best decisions we have made. I didn’t think the kids would want to do any exercises as we weren’t an active family but the activities were all made into fun challenges and games and the full family take part and we all have the confidence to go swimming now as well. We’ve worked with Steven (Health Coach) for a wee while now and he is like an extended family member, we laugh and joke with Steven who has encouraged us as a family to enjoy healthier meals and try lots of different foods. I would definitely advise parents who are concerned about their child’s weight or activity level to get in touch with the team, everything is kept confidential and weight is never mentioned to the kids. My daughter enjoys learning about foods and using the NHS scanner app when we go shopping to make sure she is making positive choices. She also loves the weekly activity sessions with Catherine and Ryan (Health Coach Assistants). She enjoys them because it is smaller groups which can be a factor as she has additional needs, the small groups lets her relax and feel more confident at doing movement activities.</p>
Feedback from Dad
<p>“I take part in all the Jumpstart activities, it is a good programme that helps youngsters (and us) understand food and how to be healthy. The staff are all very good and make learning fun for all the family.”</p>
Feedback from Son (aged 15)
<p>“The programme is good and I especially enjoyed the video calls with Steven, we would toss a coin to see who had to do the fun challenges. Steven let me schedule and run the meetings.”</p>

Jumpstart Tots



Jumpstart Tots is a more recently implemented healthy lifestyle programme for families with children aged two to five years who are above a healthy weight (BMI \geq 91st centile). The programme has been rolled out across Ayrshire using a staged approach; beginning in early 2021 with North Ayrshire, followed by East and South Ayrshire.

Jumpstart Tots is delivered on a one-to-one basis and offers families a minimum of eight one hour sessions, however, support can last for up to one year or longer depending on the need. Similar to Jumpstart programme, Jumpstart Tots sessions are planned to suit the needs of each family and may include healthy meal, drink and snack ideas; useful cooking tips; help with menu planning; age appropriate portion sizes; and active play ideas.

Children can be referred into the service by their healthcare provider; this is mainly through health visitors. Key partners such as leisure services are committed to providing ongoing support to enable families to maintain a healthy weight through access to existing services and physical activity programmes in the local community. In addition, a universal group-based programme for children in a small number of early years centres is being tested and increases the focus on local prevention of childhood overweight and obesity by inviting all families to participate. Both programmes are family centred, involving both the parents or carers and their children, with approaches incorporated to involve the whole family.

Referrals

In 2022/23, 28 families were referred to the Jumpstart Tots programme. Half of the children were aged 2-3 years, while the other half were 3½ years or older. A higher proportion of referrals were for girls (n=17) compared to boys (n=11). The majority of children referred had a BMI on or above the 99.6th centile (n=19). In addition, the majority of referrals were for families living in the two most deprived areas of Ayrshire (SIMD 1 and 2) (n=22).

“I’ve found it quite helpful with kids portion sizes... it makes a big difference when you see what a child that age should actually be eating rather than what you’re putting on their plate...I’ve got 6 kids the youngest one is 3, and I’ve never actually thought about portion sizes or how much sugar was in one thing compared to another”

During 2022/23, 19 families completed the Jumpstart Tots programme, and a further 19 were being supported by the early years child healthy weight team at the end of the year. Of the 28 families referred during 2022/23, eight declined to take part and five started the programme but subsequently withdrew. An evaluation of the implementation of the Jumpstart Tots programme was undertaken by a Public Health Research Officer in 2022. Data from the evaluation as well as data from families who completed the programme later in the year after the evaluation concluded, showed that overall the programme had a positive impact on families.

Analysis showed there was a reduction in children’s BMI standard deviation score from referral to the final session of the programme. Positive lifestyle changes from participation in the programme were also reported, such as an increase in fruit and vegetable consumption; lower consumption of fast food and lower consumption of foods high in sugar.

“She’s eating a lot better, eating much better. It helped me as well...meals have changed, even snacks have changed... [child] wouldn’t eat fruit before but she’ll eat it now since the Jumpstart Tots so it’s helped that a lot. It was really good as well, it was a nice experience”

Where you can get more information

- Information on talking to a child about their weight [Parent Club - Talking to Your Child About Weight](#)
- Information on eating well and being active for families [Beatter Health Healthier Families - Easy Ways to Eat Well and Move More](#)
- Information on supporting children and young people's self-esteem [Young Minds - A Guide for Parents and Carers - Self-Esteem and Mental Health](#)

In 2018/19, NHS Ayrshire & Arran was selected as one of three early adopter Boards to support and inform implementation of the national *Framework for the Prevention, Early Detection and Early Intervention of Type 2 diabetes*. Originally the Scottish Government intimated that Boards would receive an annual funding allocation over five years, however given the need for continued action in relation to levels of obesity and type 2 diabetes in Scotland, the Scottish Government has confirmed that funding for diabetes prevention and adult weight management services is planned to continue for the length of this parliamentary term until 2026/27.

The diabetes prevention programme and adult weight management service have been integrated providing flexibility within all of the services, which means that citizens of Ayrshire and Arran can access the right services at the right time optimising the health gain they can achieve.

Diabetes Prevention Service

The Diabetes Prevention service is fully operational across Ayrshire. Healthcare professionals are able to refer people with a diagnosis of pre-diabetes (HbA1c 42-47mmol/mol) as well as those at high risk of developing type 2 diabetes i.e. women with a current Gestational Diabetes (GDM) diagnosis or a history of GDM (<2 years) and those with a diagnosis of polycystic ovarian syndrome.

The Diabetes Prevention Service utilises the "Prevent It" programme and is delivered across Ayrshire in community settings. The programme is delivered primarily as a group based intervention but one to one sessions are available. The programme is largely delivered face to face with virtual or telephone delivery also available. The programme includes an initial consultation with a dietitian, the 'Prevent It' information session, follow up at 6 months and a final review session at 12 months. At each phase of the programme access to other support services is discussed and referrals made or signposting carried out e.g. weight management, activity on prescription,

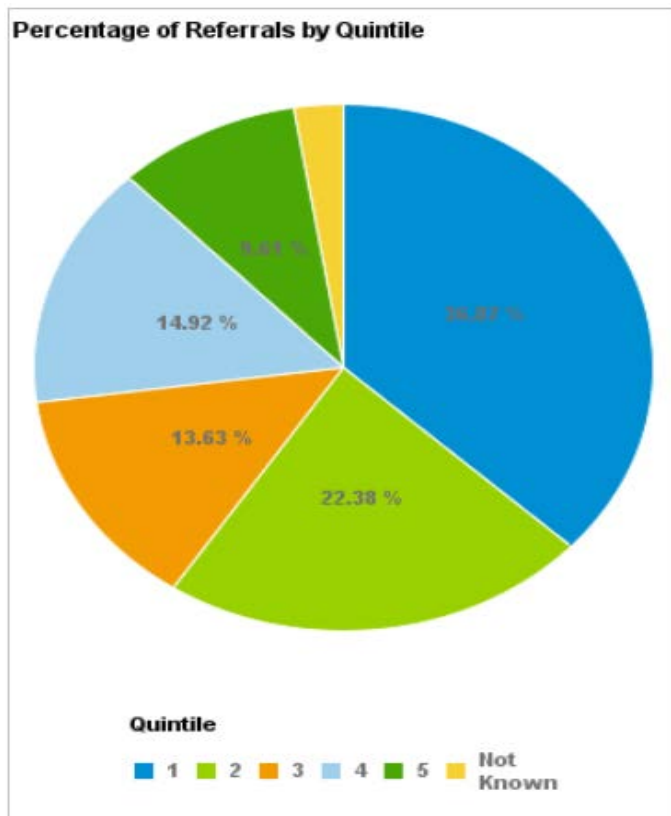
community connectors, community dietitians, smoking cessation etc. For those wishing to self-manage, a fully remote option is available via the 'My Desmond' platform.

Quarterly reporting for current referrals is undertaken which enables trend analysis, engagement with non-referrers and forecasting of service demand to be carried out.

During 2022/23, 648 referrals were accepted by the Diabetes Prevention Service. Of those, 67% (n=434) were female and 33% (n=214) were male. The profile of those referred to the service was as follows:

- Average age: 57 (Range 20-94 years)
- Average BMI: 33.56kg/m² (Range 17.2* – 64.5, n=395) *Note that referrals are accepted for women with GDM or polycystic ovarian syndrome (PCOS) who may not have obesity as a risk factor
- Average HbA1c: 44mmol/mol (Range 34**- 49***) **Women with PCOS may have normal glycaemia levels. ***While the range shows figures in diabetes range, a person may have a fasting blood result in pre-diabetes range
- The majority of people referred were from SIMD 1 and 2 (most deprived) (59.3%)

Figure 17: Referrals to the Diabetes Prevention Service by deprivation



Feedback from participants:

Just to say thank you. The content was great. The visuals were useful and the dietitians were really helpful and encouraging. I have no doubt that I can give it my best effort to lose weight and that they are there for any questions and check ins along the way.

I actually really enjoyed it and was dreading it beforehand. I'm not a group session kind of person but it was good

Overall excellent programme and fully recommended to anyone that's referred to it

I thought the course was excellent and very informative

Found the delivery to be excellent and the dietitian was very approachable and knowledgeable

Outcome measures for the Prevent It programme are challenging to report on as they relate to the behaviour changes that participants implement following the one-off education session. Any such changes may be due to onward referral to services which support participants to change behaviours to reduce their risks for developing type 2 diabetes, for example weight management, smoking cessation or activity on prescription, therefore, the impact of these changes cannot be measured during the time participants are taking part in the programme.

Gestational Diabetes Service

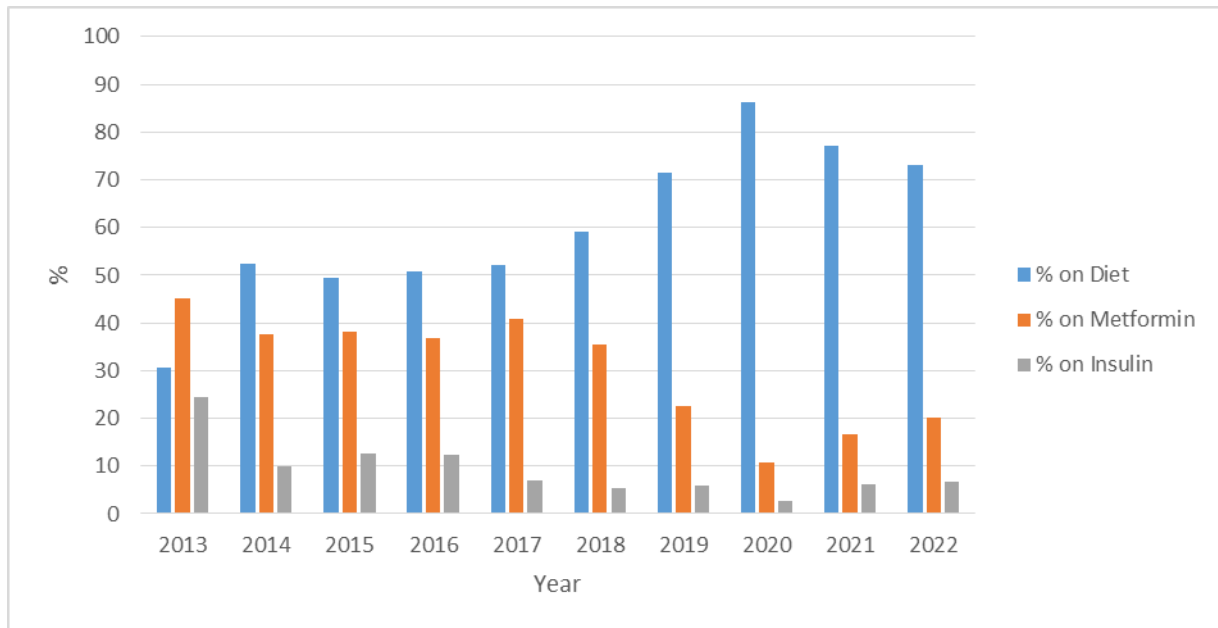
From May 2021, all women have an HbA1c at booking which supports earlier identification of those who may be at risk of developing gestational diabetes or those who may potentially have undiagnosed diabetes. In August 2022, the Oral Glucose Tolerance Test (OGTT) clinic recommenced in its pre-COVID format for women with a BMI greater than 30kg/m² and other risk factors. During the clinic women are invited to participate in a 1.5 hour education session which provides them with information on healthy eating during pregnancy, the risks of type 2 diabetes and how to access the 'Prevent It' diabetes prevention programme post-partum. Attendance at the clinic has been good since its restart and feedback from the women is being sought. Work to reach women who do not access the service has been started with the Safeguarding Midwifery team and opportunities for outreach OGTT clinics are being considered.

Consent for the Diabetes Prevention service to contact women post-partum is sought at the blood glucose meter demonstration appointment following an impaired OGTT. At 16 weeks post-partum, women are contacted via letter by the Diabetes Prevention Service and asked if they would like to opt in to the programme for support.

Between 2013 and 2018, the average number of women who had an OGTT was 698 per year. In 2019, the BMI criteria for an OGTT was lowered from 35kg/m² to 30kg/m² due to receiving diabetes prevention funding from Scottish Government. As a result, the number of women meeting the new criteria has substantially increased; during 2022/23, 1,150 pregnant women had an OGTT.

Figure 18 shows that from 2013 until 2022, there has been an upward trend in the number of women managing their GDM through dietary changes, and a simultaneous decrease in the number of women being treated with oral medication or insulin. The benefits of this are twofold; firstly more women are having less invasive treatment, and secondly there is a cost saving to the organisation.

Figure 18: Management of women with GDM, 2013 to 2022

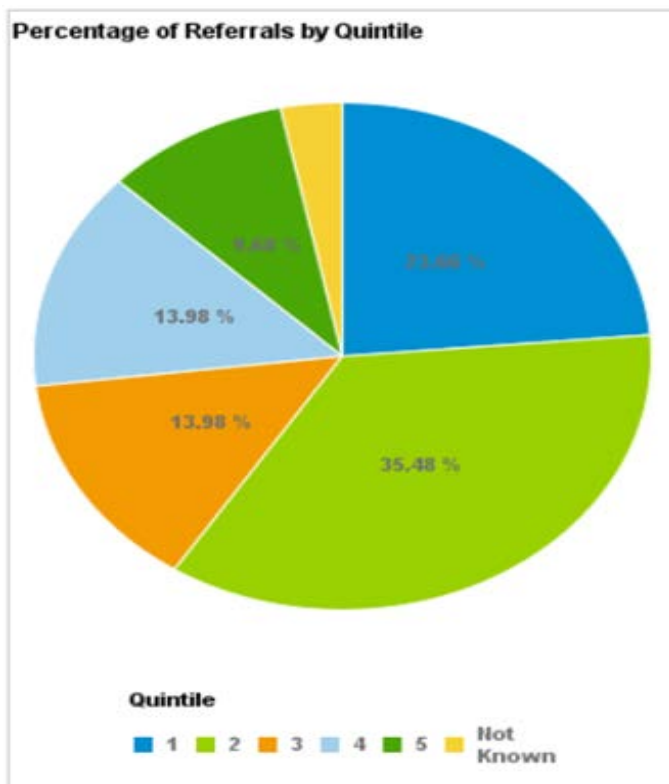


Type 2 Diabetes Remission Service

The type 2 diabetes remission service utilises a programme known as Counterweight Plus which has three phases: total diet replacement, food reintroduction and maintenance. The aim of the programme is to support people who have been diagnosed in the last six years with type 2 diabetes to lose up to 15kg of weight and return normal glycaemic blood results. The programme started accepting referrals from October 2022 from General Practice. In the assessment phase, participants are screened for binge eating, readiness to change and anxiety and depression; they are also given the opportunity to test the liquid replacement products before starting on the TDR phase. Psychological support and coaching is in place for staff, and pathways for people referred or participating in the programme have been established. Plans are in place to develop psychoeducational resources.

Since October 2022, the service has received 116 referrals and to date has accepted 62. There is currently a waiting list for starting the programme so some referrals may not have been processed beyond initial triage. Of the accepted referrals, 58% were for females and 42% for males. More than half of referrals were for those living in SIMD 1 and 2 (most deprived) areas in Ayrshire (n=37, 59.2%), as shown in Figure 19.

Figure 19: Referrals to the Diabetes Remission Service by deprivation



Positive changes in average BMI and HbA1c among participant's from referral and at several key points over the course of the Counterweight Plus programmes can be seen in Table 3.

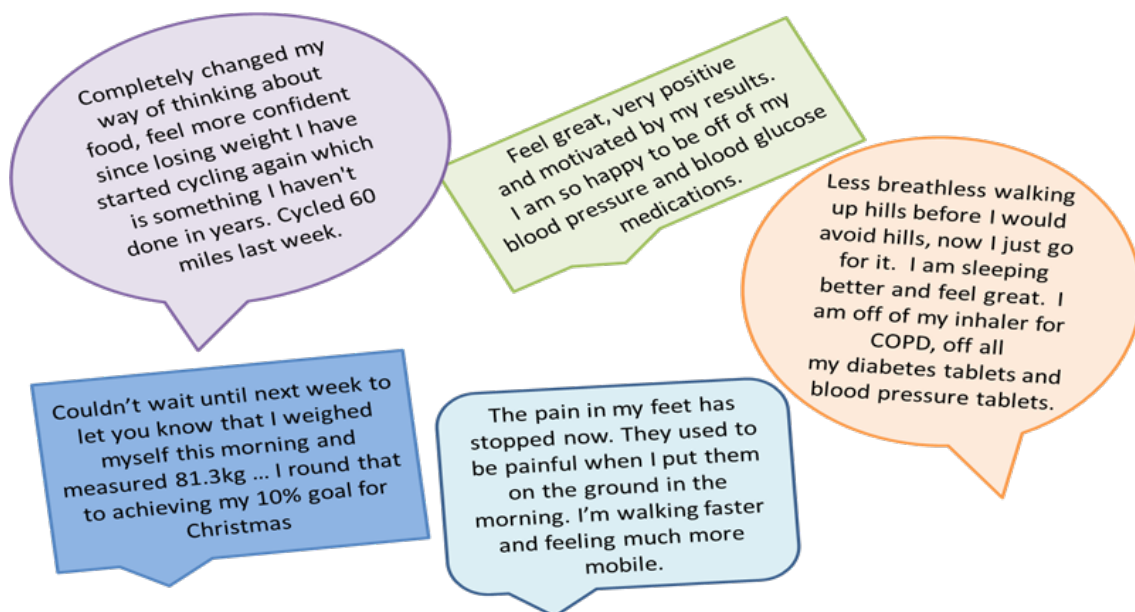
Table 3: BMI and HbA1c among those participating in the Counterweight Plus programme

Programme Phase	No.	BMI(kg/m ²)		HbA1c (mmol/mol)	
		Average	Range	Average	Range
Referral	62	39.6	30.5-58.8	64.74	44*-131
Assessment	45	38.0	30.8-59.2	63.85	45*-131
Start Total Diet Replacement	36	38.3	30.5-57.5	64.19	44-131
End Total Diet Replacement	21	32.9	24.2-43.9	44.12	34-58
End Food Re-Introduction	14	31.0	23.67-42.3	45.36	39-51

* HbA1c of >43mmol/mol on glucose lowering therapy meets acceptance criteria for programme

Of the 14 participants who have completed the food re-introduction phase, three are returning HbA1c results in the type 2 diabetes range and 11 are returning bloods in the type 2 remission range (<48mmol/mol). All participants remain off their diabetes medication.

Feedback from participants:



Adult Weight Management Services

Provision of weight management services currently comprises of:

Tier 1 – Universal Programme/Messaging

- [NHS Inform 12-week programme](#)
- HealthyWeightAyrshire App
- [HealthyWeightAyrshire Facebook](#)

Tier 2 – Weight Management Programme ‘Weigh to Go’ Delivered by Trained Facilitators via Partner Organisations

- 12-week programme covering nutrition, health and wellbeing, and includes activity sessions
- Support for 1 year

Tier 3 – Weight Management Programme delivered by Specialist Team

- 12-week programme which explores factors that influence lifestyle choices and weight, including information, tips and strategies for nutrition, health and wellbeing, activity/cooking sessions, and onward referral to other support services as appropriate
- Support for 1 year

Tier 4 – Bariatric Surgical Service (funded within Acute Services)

- Weight loss surgery for people who meet specific criteria

Tier 2 Adult Weight Management ‘Weigh to Go’



Weigh to Go is suitable for people with a BMI >25 aged 18 or over. It is delivered pan Ayrshire in community settings by trained facilitators. This service is well established with referral routes via healthcare professionals and self-referrals.

Those referred have the opportunity for a consultation with a member of the Adult Weight Management Service to discuss the Weigh to Go

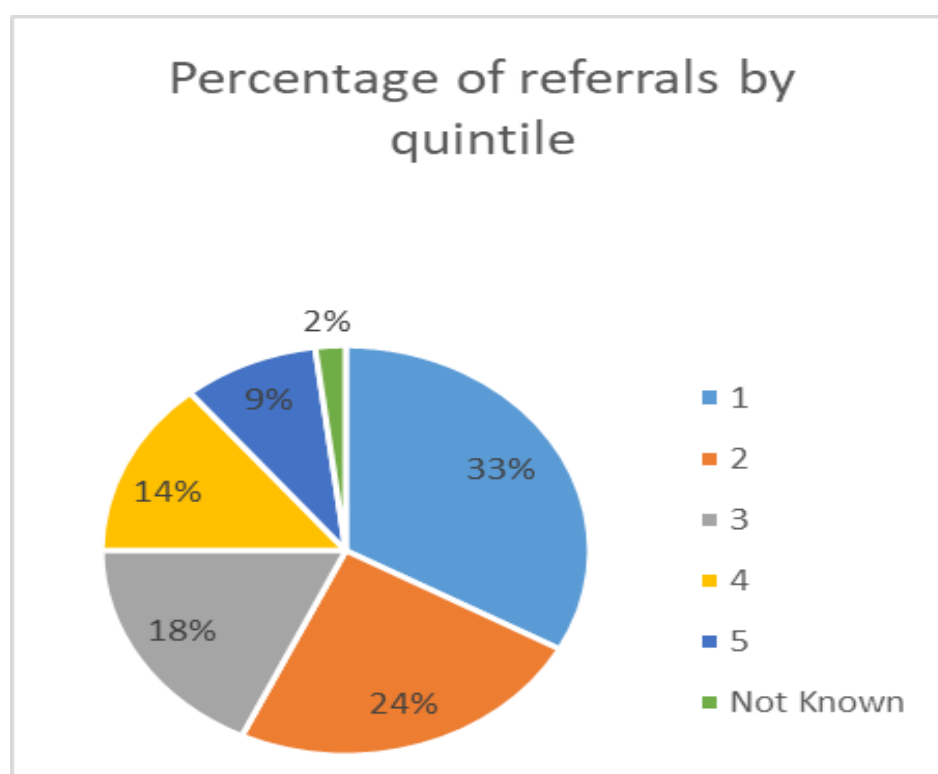
programme and allow the individual the opportunity to ask questions and to make an informed choice about the programme that best suits their needs.

The Weigh to Go programme is largely delivered in a group setting however one to one sessions are available. The programme is delivered primarily face to face but virtual or telephone delivery is available. The programme is delivered by the following providers:

- East Ayrshire: East Ayrshire Council's Vibrant Communities Team, Kilmarnock Football Club's Community Sports Trust and HMP Kilmarnock
- South Ayrshire: South Ayrshire Council's Leisure Team and Ayr United Football Club
- North Ayrshire: KA Leisure, CVO Arran and Kilwinning Community Sports Hub.

During 2022/23, 635 people were referred to Weigh to Go; of those 75% (n=476) were female and 25% (n=159) were male. The average age of individuals was 59 years (range 19-88 years). Data on BMI at referral was available for 427 people; of those the average BMI was 39.6kg/m² (range 22.9-91.0). More than half of referrals were for those living in SIMD 1 and 2 (most deprived) areas in Ayrshire (n=362, 57%), as shown in Figure 20.

Figure 20: Referrals to the Weigh to Go programme by deprivation



Diabetes status was recorded at referral for 502 individuals and was as follows:

Table 4: Diabetes status at referral of those referred to Weigh to Go programme

Diabetes status at referral	No.
Pre-diabetes	83
Type 2 diabetes	59
Type 1 diabetes	6
Other diabetes diagnosis	2
None	352

To date, 214 participants have attended the first session of the Weigh to Go programme (others may be waiting on a programme starting in their area, some may be waiting to be assessed and some may not have opted to join the programme). Seventy participants have completed the programme to date; average BMI at that point was 36.7kg/m² (range 24.2-52.2), and average weight loss was 2.3kg (range -11.3kg to +5.7kg).

Feedback from participants:



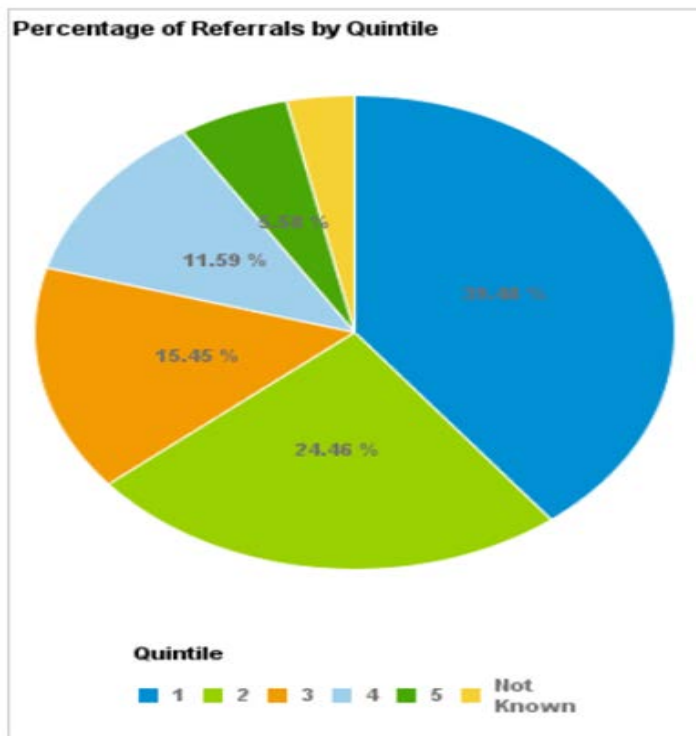
Tier 3 Specialist Weight Management Service

Up until March 2023, the specialist weight management service was delivered in East Ayrshire only as a test of change, however recurring funding has been approved by the three Integration Joint Boards to expand the service across Ayrshire. The tier 3 service is suitable for those aged 18 or over with a BMI ≥ 40 with obesity related health comorbidity, and is delivered by a multidisciplinary team comprising dietetics, psychology, physiotherapy and leisure staff. Referrals are received via healthcare professionals or via self-referral. All those referred have an initial pre-assessment (including psychological and activity screening) with a member of the Adult Weight Management Service prior to entering the year long programme. The specialist weight management service is largely delivered in a group setting however one to one sessions are available in exceptional circumstances. The programme is delivered primarily face to face but virtual or telephone delivery is available.

During 2022/23, 265 people were referred to the specialist weight management programme; of those 78% (n=207) were female and 22% were male (n=58). The average of individuals was 49 years (range 23-78 years). Data on BMI at referral was available for 213 people; of those the average BMI was 46.1kg/m² (range 32.3-

75.4). Almost two thirds of referrals were for those living in SIMD 1 and 2 (most deprived) areas in Ayrshire (n=170, 64%), as shown in Figure 21.

Figure 21: Referrals to specialist weight management service by deprivation



To date, 220 participants have attended the first session of the specialist weight management programme (others may be waiting on a programme starting, some may be waiting to be assessed and some may not have opted to join the programme). Of those who have started, 69 participants have completed a programme; average BMI at that point was 36.7kg/m² (range 24.2-52.2), and average weight loss was 2.1kg (range -11.3kg to +5.7kg).

Diabetes status was recorded at referral for 261 individuals and was as follows:

Table 5: Diabetes status at referral of those referred to specialist weight management programme

Diabetes status at referral	No.
Pre-diabetes	26
Type 2 diabetes	66
Type 1 diabetes	3
None	166

Feedback from participants:



Where you can get more information

- Information on eating healthily - [NHS Inform - Eatwell Guide - How to Eat a Healthy Balanced Diet](#)
- Information on calculating BMI - [NHS - BMI Healthy Weight Calculator](#)
- Information on My Diabetes My Way - [My Diabetes*My Way](#)
- Information from Diabetes Scotland - [Diabetes UK - Diabetes Scotland](#)
- Information on 12 week weight management programme - [NHS Inform - 12 Week Weight Management Programme](#)

- Information on weight stigma - [Public Health Scotland - Challenging Weight Stigma Learning Hub](#)

Diabetic eye screening

Diabetic Eye Screening (DES) is delivered via a national programme for people living with diabetes aged 12 years and over. The screening test consists of a digital photograph taken of each retina. Photographs are analysed for signs of retinopathy, which is damage caused to the blood vessels at the back of the eye by diabetes. Retinopathy can be treated by laser if caught early enough; left untreated it can cause loss of sight.

The DES programme in Ayrshire is delivered using a hybrid model; a mixture of community Optometry and Health Board provision; 39 accredited Optometrists are trained in digital imaging in 26 accredited Optometry Practices in various locations throughout Ayrshire, with additional Health Board provision delivered by 5 medical photographers and 1 medical photography assistant at University Hospitals Ayr and Crosshouse. Further Health Board provision is also available at Ayrshire Central Hospital and is delivered by a hospital DES screener and a senior Optometrist.

In January 2021 biennial screening and Optical Coherence Tomography (OCT) were introduced into the national DES pathway. The biennial screening recall is working well with 43% of people attending for DES screening now in this pathway. OCT is used to provide an additional stage of screening for people with macular oedema and reduces unnecessary referrals to Ophthalmology. OCT went live in Ayrshire in August 2021 (one of the first Boards to fully integrate OCT into their DES pathway) and is provided by the hospital eye screeners at the Health Board clinics.

The Key Performance Indicators (KPIs) for 2022/23 were released on in May 2023 and provide an overview of DES screening activity for the past 12 months. With the introduction of the new DES IT software 'Optomize' in 2020, some changes to the KPIs were required.

KPI headline data for Ayrshire April 2022 – March 2023:

- The invitation rate was 87% compared to 36.6% in Scotland; the target is 100%
- The successful screening rate was 74.5% compared to 78% in Scotland; the target is 80%

- The overall technical failure rate in Ayrshire was 1.74% compared to 2.1% in Scotland; the target is to be as low as possible
- The written report success rate of people screened being sent their results within 20 working days in Ayrshire was 94.9% (the highest in Scotland) compared to 73.7% in Scotland; the target is 95%
- The referral rate for those whose screening outcome was referral to Ophthalmology was 1.7% in Ayrshire compared to 0.3% in Scotland. However, it is noted that Ayrshire are an outlier for Slit Lamp technical failure rate at 9.4% compared to 3.5% in Scotland; the target is 2%. Audits carried out in 2023 highlight that those waiting on cataracts operations is the main contributory factor.

Work commenced in 2021/22 to develop the hybrid model by introducing a DES mobile service to existing community sites that would increase the resilience of the programme and address any inequalities/barriers to screening. As of October 2022, DES is now being delivered in Dalmellington to address this issue with the introduction of mobile screening at the community centre. The number of appointments offered per clinic have increased from 7 to 9 as the clinic beds-in and attendance is approx. 80%. Two appointments are shared with the Community Treatment and Care nurse from the Dalmellington GP Practice allowing these people to receive their diabetic review and eye screening at the one appointment. The screening offered at Dalmellington since October 2022 has seen uptake in this area rise from 48% to 83%, well above the Scottish average.

Additional areas identified for the community mobile service are the Isle of Cumbrae (Millport) and the Garnock Valley area. The planning for Isle of Cumbrae outreach has already commenced and a camera trolley and van hire have also been procured in order to facilitate the mobile screening service.

Going forward, the aim will be to invest in additional Health Board clinics in other areas where there is no existing provision of DES, in order to improve the patient experience by reducing waiting times at the optometry practices and further increase

the resilience of the programme and help to address any inequalities or barriers to screening.

Where you can get more information

- Information about diabetic eye screening (DES) in Scotland - [NHS Inform - Diabetic Eye Screening](#)
- Information from RNIB Scotland - [RNIB - Scotland](#)
- Information from Driver and Vehicle Licensing Agency (DVLA) - [DVLA - Eye Conditions & Driving](#)

Dalmellington Community Health Hub

Dalmellington Community Health Hub was established with the aim to improve access to diabetic eye screening and chronic disease prevention services in rural East Ayrshire. A weekly event is held at Dalmellington community centre where a number of NHS, council and voluntary agencies are available to support people in living healthier lives through delivery of health education measures and improved access to disease prevention services.

A key part of this project is the delivery of DES and community treatment and care nursing services for people living with diabetes within the heart of the community. The prevalence of chronic disease in Dalmellington and surrounding areas is higher than the Scottish average, with 10.9% of the local population registered as living with diabetes compared to 5.9% nationally.

In Dalmellington attendance at DES in 2021 was 45%, well below the national performance standard of 80%. A reason for low appointment uptake was due to the inaccessibility of services, with people previously having to travel approximately an hour by bus to access the services. Following the delivery of DES within Dalmellington attendance at DES has increased by 25% (45% vs 70%).

Examples of the other services present each week include; diabetes prevention, smoking cessation, financial inclusion, oral health, foot checks and weight management services. Social and digital inclusion services deliver weekly sessions to combat loneliness and encourage peer support in the management of chronic diseases.

This project has reduced health inequalities, improving access to services for the local population. Direct referrals to the smoking cessation, financial inclusion, weight management services have increased and the community report easier access to services. Healthy eating and physical activity education days have taken place successfully with good community participation.

Where you can get more information

- Information on Dalmellington Community Health Hub - [NHS Ayrshire & Arran - Dalmellington Health Hub](#)

Physical activity

Leisure services provided by the three local authorities in Ayrshire offer a range of activities to support people to be more active, more often. In addition, Ayrshire has numerous historical and cultural attractions as well as abundance of opportunities in its natural environment and greenspaces for people to become more active, often free of charge. The [Our Natural Health Service Programme](#) supports this concept.

Activities such as walking, cycling, gardening and growing, practical conservation and active travel are all great ways to achieve the 5 Ways to Wellbeing.



Image courtesy of The Conservation Volunteers

Green Health Activity

Evidence shows that contact with nature and being active in the natural environment is good for our health and wellbeing. A key feature of nature based opportunities is that they not only keep people active and improve overall health and wellbeing, but they can also contribute to biodiversity loss and climate change and support routes to employment via volunteering.

The NHS Greenspace Demonstration Project at [University Hospital Ayr & Ailsa](#) (UHA&A), was the first site to enhance its natural space, biodiversity and accessibility; learning from this was then taken to Ayrshire Central Hospital with development of a woodland walk. This has provided excellent spaces for patients, staff and visitors alike to be physically active in the natural environment. Public

Health staff are working in partnership with [The Conservation Volunteers](#) (TCV) who lead the delivery of [Green Gyms](#), Health Walks and Citizen Science sessions at UHA&A. This has built the evidence base on key demographics of those participating in green health on the hospital site. TCV now lead the North Ayrshire Green Health Partnership (detailed below) and 12 staff from Woodland View recently completed walk leader training at The Trinity Active Travel Hub, Irvine, supporting staff to lead regular walking groups on site. Activities delivered by the hub across the local community are also promoted regularly on e-news and daily digest.



[The North Ayrshire Green Health Partnership](#) is one of three nationally funded partnerships (2018-2024) within the Our Natural Health Service Programme, with the aim of getting more people, more active in nature.

It has supported 44 community groups (developing 47 different projects), with around £114K funding to deliver green health activities in North Ayrshire which meet the [5 Ways to Wellbeing](#). The TCV Senior Project Officer develops resources, promotes [Green Health in North Ayrshire](#) and works closely with community groups and a range of Allied Health Professionals and Community Link workers, to increase social prescribing into a range of local nature based activities and health walks. This year's [Green Health Week](#) ended with an event at Eglinton Country Park attracting over 100 people, engaging them in a range of activities such as health walks, bird identification, and mindfulness.



In South Ayrshire, green health activities are being co-ordinated by the Green Health and Active Living subgroup of the South Ayrshire Community Planning Population Health Strategic Delivery Partnership.

The subgroup has created an action plan to deliver four key workstream areas: leadership; research and development; training and education; marketing and communications.

Some of the key actions include obtaining funding for a strategic and an operational officer to take forward green health activities, development of a website, mapping green health activities in South Ayrshire and identifying gaps where new green health initiatives can be developed.

The South Ayrshire Green Health app, hosted on the [NHS Ayrshire & Arran retainer app](#), was developed in partnership with NatureScot and South Ayrshire Council Ranger Service and lists a range of opportunities to get involved in green health in South Ayrshire. The app has been widely marketed with partners and the Green Health and Active Living subgroup are currently exploring ways to encourage health professionals to signpost patients to the green health app, and social prescribing referral opportunities with green health.

There are also great opportunities to visit green sites in East Ayrshire - [Discover East Ayrshire's Great Outdoors | East Ayrshire Leisure Trust](#) our partners East Ayrshire Leisure are committed to maintaining free open access for all to of the open space under their ownership. The #ActiveEA partnership group is an enabler to link East Ayrshire Leisure with a range of different partners who are then able to signpost, refer and/or socially prescribe to these opportunities.

The South Ayrshire Green Health App is here

What is green health?
Green Health is about engaging with nature and spending time outdoors which is good for your physical, mental and emotional health and wellbeing.

What does the app contain?
It's a directory of Green Health activities and groups. The app contains information on what the groups or activities are, where they are and how you can get involved.

How to get the app?
Scan the QR codes to download NHS Ayrshire & Arran app, and search for the Green Health app.

Logos: south AYRSHIRE COUNCIL, NatureScot, NHS Ayrshire & Arran

Active Travel

Active travel refers to making journeys in a way that is physically active. This could be walking, wheeling (using a wheelchair or a mobility aid), cycling, scooting or running. Finding time to be physically active can sometimes be a challenge, however

incorporating it into people's daily routine of getting to and from work and/or other local activities can make it easier to achieve.

NHS Ayrshire & Arran had a Workplace Engagement Officer (WEPO) in post via Sustrans for approx. 9 months from November 2022 until August 2023. This brought Capital Spend of £20K which was used to purchase and install bike shelters at 3 Towns Resource Centre and East Ayrshire Community Hospital. A further bike shelter has been purchased and installed at North Ayr Health Centre using staff lottery funding.



A baseline survey completed in early 2023 showed that 80% of NHS Ayrshire & Arran staff travel alone by car to work, however despite this, 77% of those who participated in the survey stated that physical benefits were the main motivating factor to actively travel to and from work. Further work is required to consider barriers to active travel, of which the most common were: distance to work, weather and feeling unsafe on the roads with motor vehicles.



The WEPO worked closely with staff in the Public Health Department and with the local active travel hubs to deliver three Dr Bike (bike maintenance) sessions at hospital sites across Ayrshire earlier this year. Engagement sessions were also integrated into NHS Ayrshire & Arran’s Corporate Induction programme with support from the North Ayrshire Council’s WEPO.

Personalised Travel plans are available and infographics featuring facilities to support active travel at the main hospital sites were developed and promoted. A video highlighting the facilities available to support active travel at University Hospital Crosshouse has also been created by a Health Improvement Practitioner and colleagues from the Kilmarnock Active Travel Hub.

A [Staff Active Travel Brochure](#) has been developed, and NHS Ayrshire & Arran has Cycle Friendly Employer Status for its three main sites at University Hospital Ayr, University Hospital Crosshouse and Ayrshire Central. NHS Ayrshire & Arran also offers the [Cycle to Work Scheme](#) for staff interested in active travel opportunities allowing access to tax free bikes. Over the last year, 85 staff have submitted an application to the scheme.

NHS Ayrshire & Arran’s Chief Executive is an active travel champion and has created a short film to promote the benefits of active travel. The film can be accessed using the QR code below



Staff health and wellbeing

One of the organisation's key workforce challenges is ensuring staff wellbeing and resilience is intrinsic to what we do, which includes looking after their mental and physical health. NHS Ayrshire & Arran's goal is to provide opportunities for staff to allow them to consider activities that will impact on their lifestyle; an example is a collaboration with an online exercise provider. DoingOurBit is a partnership between leading fitness providers, the Royal Wolverhampton NHS Trust and the Clinical Research Network West Midlands. The company currently has approximately 130 NHS and Social Care organisations signed up in England and Wales, reaching almost 750,000 staff. NHS Ayrshire & Arran would be the first Board in Scotland to sign up for this resource and a positive communication campaign between DoingOurBit and NHS Ayrshire & Arran can be built on this. Staff will be offered free virtual fitness classes as well as a mental wellbeing hub full of helpful resources and videos. In addition, there will be the opportunity for NHS Ayrshire & Arran to use in-house instructors and the potential to link with local gyms. Staff could use this as part of team building activities or build in a stretch or light exercise class at the start or end of a meeting, such as meditation. The final stages are being worked through with the provider and it is hoped that this platform will be available to staff soon.

As part of the organisation's commitment to provide a range of activities aimed at encouraging staff to be more active, the first 'Stair Challenge' was held in January 2023 to encourage teams to take the stairs instead of lifts. By increasing the number of times staff took the stairs, their stair flights were converted into the equivalent of well-known mountains or buildings. The 'Step Challenge' returned in May – June 2023 with teams across the organisation competing to have the highest step count locally, as well as inclusion in the national leader board against other NHS Scotland Boards. Both of these challenges aimed to improve physical and mental health, increase activity levels, and encourage team building.

Where you can get more information

- Information on the benefits of being active - [NHS Inform - Benefits of Exercise](#)
- Information on keeping active - [NHS Inform - Keeping Active Guidelines](#)

Thank you

This report has captured some of the wealth of work that is going on between the public health department and partners in relation to obesity and diabetes prevention. We hope that you have found this a useful overview and that the links can help you find out more about topics of particular interest. Thank you again to all our partners, and the people of Ayrshire and Arran for making this work possible and successful. To those colleagues who contributed to the writing of this report a particular thank you:

- Alan Brown, Health Improvement Officer
- Lyall Cameron, Senior Information Analyst
- Audrey Christie, Business Manager
- Mandy Cliff, Dietetic Assistant Practitioner
- Ashleigh Graham, Health Improvement Dietitian
- Alister Hooke, Senior Public Health Research Officer
- Gillian Jennings, Health Improvement Officer
- Elaine Jocelyn, Dietetic Health Improvement Team Lead
- Kevin Lyle, Health Improvement Officer
- Arlene MacDonald, Dietetic Assistant Practitioner
- Eileen McCutcheon, Health Improvement Officer
- Fiona McIntosh, Senior Graphic Designer
- Rona Osborne, Dietetic Team Lead, Weight Management
- Carolyn Oxenham, Diabetes Prevention Programme Manager
- Lizzie Panagiotidou-Bomprik, Health Improvement Dietitian
- Tracy Scott, Staff Wellbeing Lead
- Diane Smith, Improvement & Development Manager for Screening
- Kelly Taylor, Clinical Research Fellow

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