



Nutrition and Health among young people in Scotland

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Introduction

Eating well is a long-term investment in health, and habits formed in childhood and adolescence are thought to track into adulthood, influencing the risk of major chronic diseases (MacPherson et al, 1995). The Scottish national diet has been the focus of increasing government attention over the last two decades and has been repeatedly identified as a key priority area, particularly among young people (Scottish Executive, 2003; 2007; Scottish Government, 2008). Recent policy documents in Scotland have highlighted the importance of nutrition in tackling obesity (Scottish Government, 2008) and a National Food and Drink Policy for Scotland was launched in June 2009 (Scottish Government, 2009).

Breakfast consumption is an important component of nutrition, and as part of a healthy diet and lifestyle, can positively impact children's health and well-being (Rampersaud et al, 2005). Skipping breakfast is associated with poorer nutritional habits (Sjoberg et al, 2003), including increased consumption of snacks and larger meal portions for the rest of the day (Bellisle et al., 1998) as well as increased risk of overweight (Berkey et al, 2003). By contrast, eating breakfast everyday is associated with having a healthy body weight, due most likely to a more even distribution of energy intake across meals throughout the day (Dubois et al, 2007). Evidence also suggests that breakfast consumption may improve cognitive function related to memory, test grades, and school attendance (Rampersaud et al, 2005). It has a short-term effect in improving selected learning skills, especially work memory (Cueto, 2001).

Fruit and vegetables are vital components of a healthy diet and protect against certain diseases such as heart disease and some cancers (Department of Health, 2000). Despite this, however, the majority of children and adolescents from Western countries eat less than the recommended amount of fruits and vegetables (Yngve et al, 2005). Furthermore, links have been made to other health-related behaviours. For example, low fruit and vegetable consumption among adolescents has previously been associated with lower physical activity levels (Pate et al, 1996). Common snack foods among young people include sugary drinks, crisps, sweets and biscuits. Evidence has linked high intake of sugary snacks with

dental caries (Sheiham & Watt, 2000) as well as increased risk of overweight (Nicklas et al, 2003). Furthermore, high TV viewing rates have been associated with higher rates of daily consumption of sugared drinks and sweets (Vereecken et al, 2006).

This *seventeenth* Briefing Paper in the HBSC series aims to examine nutrition and health among young people in Scotland; specifically in relation to breakfast consumption, lunchtime at school, and the frequency in consumption of different food types (e.g. fruit and vegetables; sweets and sugary drinks). Associations are explored between nutritional behaviours and school performance, perceived health and physical activity. The survey methodology is described in the Technical Appendix.

Summary of main findings

- Girls are more likely to eat fruit and vegetables than boys, whereas boys are more likely to eat chips, biscuits and white bread. There are no gender differences in consumption of brown bread, sweets or crisps. Over a quarter of 11–15 year olds consume sweets and crisps once a day or more.
- Boys are more likely than girls to eat breakfast everyday on schooldays. There is a gradual decline in breakfast consumption with age. Boys and girls who eat breakfast everyday on school days are more likely to rate their school performance as 'good or very good', and more likely to rate their health as 'excellent or good'.
- Pupils who skip breakfast everyday on schooldays are more likely to consume sugary drinks and snack type foods (e.g. sweets, crisps) once a day or more.
- Pupils who consume fruit and vegetables once a day or more are more likely to meet physical activity guidelines than those who eat them less than once a day.

What are young people in Scotland eating?

Figures 1 and 2 show the percentage of boys and girls eating a range of food and drinks. As shown in Figure 1, girls are more likely to eat fruit and vegetables than boys. Around two-fifths of girls eat fruit and vegetables (42.2% and 43.4% respectively) at least once a day, compared to a third (34.9% and 32.9%) of boys. Consumption

of white bread is more common than brown bread among both genders, although there is only a significant gender difference in white bread consumption, with boys (42.3%) more likely to eat than girls (37.9%). Boys are more likely to eat chips and biscuits (13.9% and 20.2%), compared with girls (11.6% and 15.3%) but there is no significant gender difference in consumption of sweets or crisps. Figure 2 shows that girls are more likely to drink water (54.0%) than boys (46.6%), whereas boys are more likely to drink milk (full fat or skimmed) and sugary drinks (Coke or other soft drinks that contain sugar) than girls; 32.0% of boys compared to 25.4% of girls consume sugary drinks at least once a day.

Figure 1: Food consumption among 11–15 year olds by gender

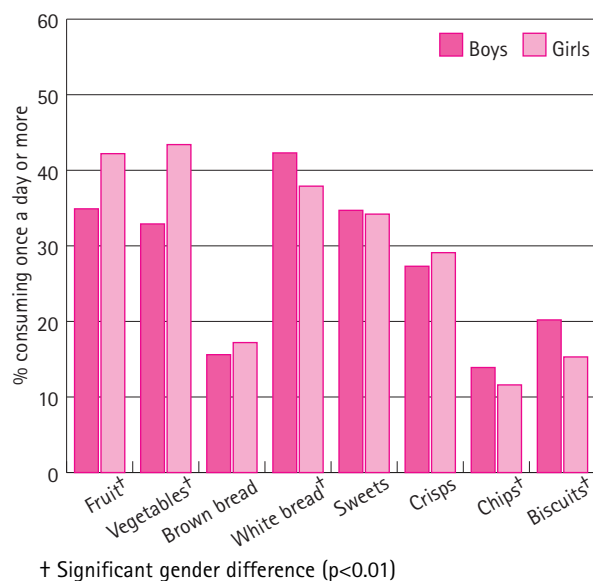
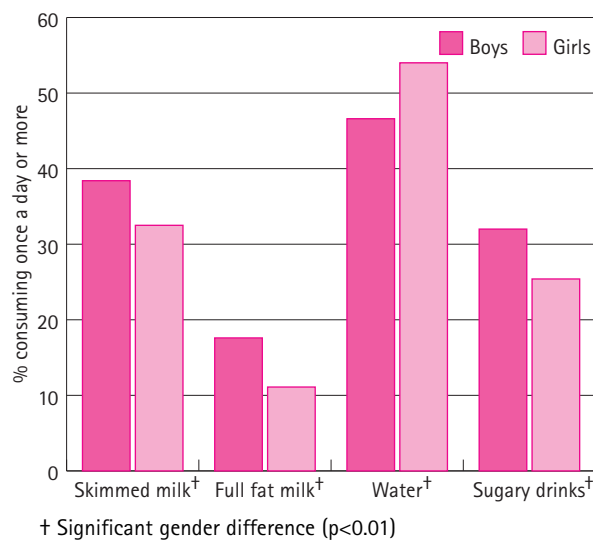


Figure 2: Drink consumption among 11–15 year olds by gender



Eating Breakfast

Although there is no gender difference in breakfast consumption at age 11, girls are less likely than boys at ages 13 and 15 years to eat breakfast every morning on school days. Figure 3 shows the gradual decline in daily breakfast consumption with age, with 58.0% of boys

and 44.8% of girls consuming breakfast at age 15 compared with 79.3% and 75.3% of 11-year old boys and girls respectively.

Figure 3: Daily breakfast consumption on school days by age and gender

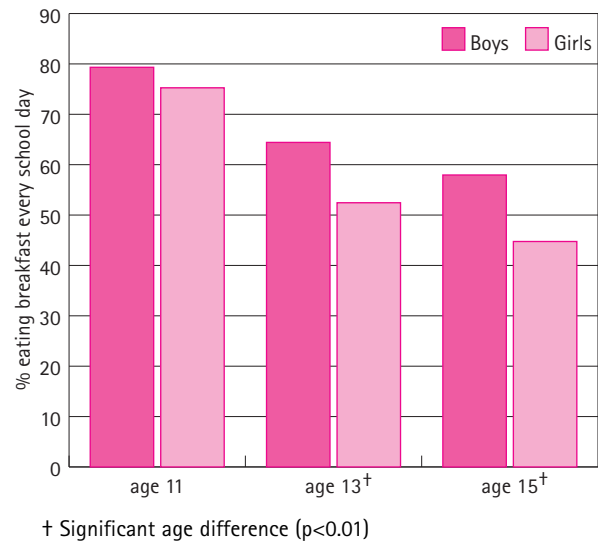


Figure 4 shows the association between breakfast consumption and consumption of snack foods. Those young people who never eat breakfast on schooldays are more likely to consume sweets, sugary drinks and crisps daily than those who eat breakfast one day a week or more on schooldays. The most notable difference occurs with consumption of sugary drinks, with 44.4% of pupils who never eat breakfast consuming sugary drinks once a day or more, compared to only a quarter (25.1%) of those who eat breakfast one day a week or more.

Figure 4: Association between skipping breakfast and sugary drink/snack food consumption

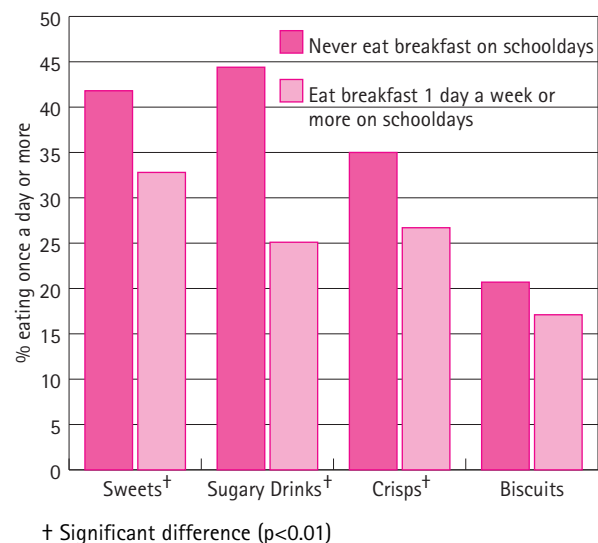
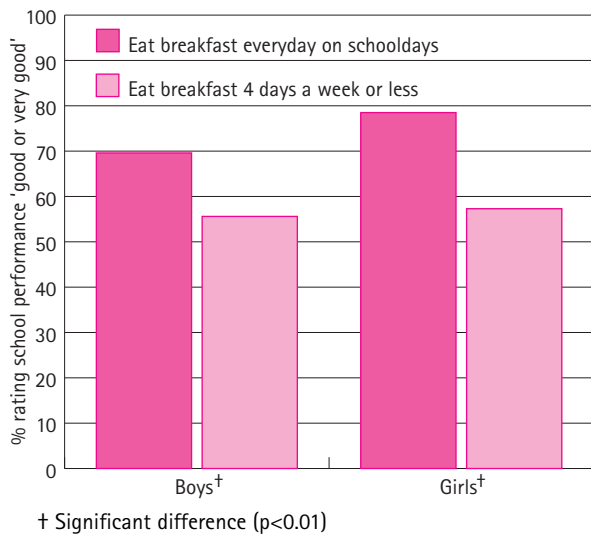


Figure 5 shows the relationship between breakfast consumption and reported school performance among 11–15 year olds. It shows that pupils consuming breakfast everyday on schooldays are more likely to

rate their school performance as 'good or very good' than those who eat breakfast four days a week or less. This is evident among both genders; 69.6% of boys and 78.5% girls who eat breakfast everyday rate their school performance as 'good or very good', compared to 55.6% and 57.3% respectively who eat breakfast four days a week or less.

Figure 5: Association between daily breakfast eating and school performance among 11–15 year olds by gender



Lunch during the School Week

Figure 6: What pupils do for lunch on school days by age

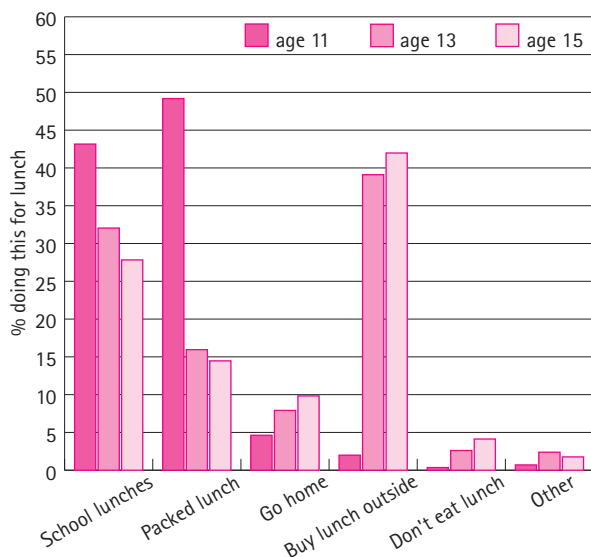
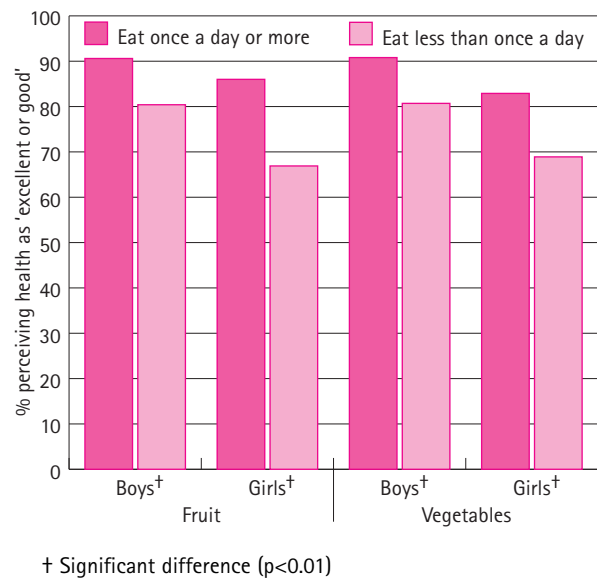


Figure 6 shows that at age 11 almost all pupils eat either a packed lunch (49.2%) or a school dinner (43.2%) on schooldays. Among 13 and 15 year olds, the most common option for lunch is buying it from outside school (local shop, café or van), with 39.1% and 42.0% doing this respectively; followed by eating school lunches (32.0% and 27.8%). Eating a packed lunch is far less common among secondary school pupils. Only 16.0% of 13 year olds and 14.5% of 15 year olds eat a packed lunch. The proportion of pupils reporting not eating lunch at all increases with age, with 4.1% of 15 year olds doing so.

Fruit and Vegetable Consumption and Perceived Health

Young people were asked how they perceived their own health. Results show there is a significant relationship between fruit and vegetable consumption and perceived health. Among both boys and girls, those who consume fruit or vegetables once a day or more are more likely to perceive their health as 'excellent or good'. Figure 7 shows that 90.6% of boys who consume fruit or vegetables once a day or more, perceive their health to be 'excellent or good' compared to just over 80% who consume them less than once a day. This is similar among girls, with over four-fifths of those eating fruit or vegetables (86.0% and 82.9% respectively) once a day or more perceiving their health to be 'excellent or good' compared to around two-thirds (66.9% and 68.9% respectively) who consume them less than once a day.

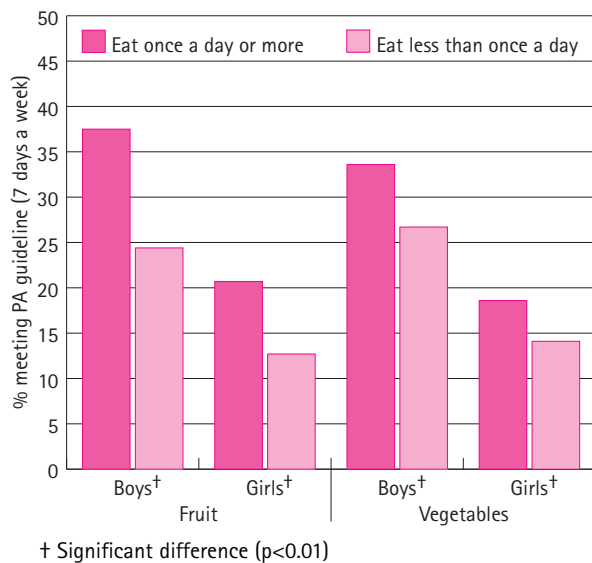
Figure 7: Associations between daily fruit and vegetable consumption and perceived health among 11–15 year olds



Fruit and Vegetable Consumption and Physical Activity

Young people were asked about the amount of physical activity they took part in and associations between eating habits and physical activity participation were investigated. Among both boys and girls, those consuming fruit or vegetables once a day or more are more likely to meet the 7 days a week physical activity guideline than those eating them less than once a day. As shown in Figure 8, among boys eating fruit or vegetables once a day or more, 37.5% and 33.6% respectively meet the physical activity guideline, compared with only a quarter (24.4 and 26.7%) of those who eat these less than once a day. Likewise, among girls, 20.7% and 18.6% of those who eat daily fruit and vegetables respectively meet the physical activity guideline, compared to just 12.7% and 14.1% respectively of those who eat fruit and vegetable less than once a day.

Figure 8: Fruit and vegetable consumption and physical activity among 11–15 year olds



Discussion

This briefing paper has demonstrated how young people's eating behaviours are associated with other areas of their lives, such as school performance, perceptions of health and engagement in other healthy behaviours. Furthermore, engaging in certain eating behaviours may also impact on other eating habits, such as the association between skipping breakfast and increased snack food consumption.

In line with previous research, girls were shown to have higher consumption of fruit and vegetables than boys (Inchley et al, 2001). A review of quantitative studies in fruit and vegetable consumption among children and adolescents showed girls consistently reporting higher or more frequent intake of fruit and/or vegetables than boys (Rasmussen et al, 2006). This briefing paper demonstrates that young people who have regular consumption of fruit and vegetables are more likely to rate their health as 'excellent or good'. Previous research has identified that young people do, in general, have a significant amount of knowledge regarding nutrition, and believe that healthy eating involves moderation, balance, and variety (Croll et al, 2001). Results in this study show that those eating more fruit and vegetables are also more likely to be physically active. Associations between these behaviours are important given the emphasis of both physical activity and nutrition as key policy targets in tackling childhood obesity.

Frequency of breakfast consumption appears to decline with age among children and adolescents, and confirms that intervention efforts are required that promote breakfast consumption across childhood and adolescence, particularly across the primary-secondary school transition and the secondary school years. Furthermore, information on where adolescents are getting their lunch on school days, shows that there is an increase in the choices made over food as adolescents become older, as shown by the increased proportion

getting their lunch from outside school at ages 13 and 15. Evidence from the Consumer Focus Scotland 'Out to Lunch' report (2008) suggests that several factors influence young people's choice to leave school for lunch, including being with friends, independence, exercise, being away from the school environment and buying perceived better quality/value for money food. Although statutory requirements have now been introduced for nutritional content of school meals, these are not benefiting the high proportion of young people who get their lunch elsewhere. This highlights the importance of educating young people about their nutritional choices as they move through the secondary school years.

This paper has presented information on the frequency of consumption of certain foods among young people in Scotland, including breakfast, and how these nutritional habits are related to other areas of their lives. It should be acknowledged, however, that nutrition among young people may be influenced by a wider range of factors including, for example, family structure, eating family meals and socio-economic status. The subjective nature of young people's self-reporting in relation to their nutrition behaviours should also be considered.

These results highlight the importance of young people's nutrition in relation to well-being, positive health behaviours such as physical activity, and school performance. Gender and age differences are apparent in food choices, with young people already engaging in less healthy eating patterns (e.g. skipping breakfast and lower fruit and vegetable consumption) appearing to be most at risk. Interventions to promote breakfast consumption and fruit and vegetable intake should especially be targeted at adolescents in Scotland.

Technical Appendix

Scotland, along with 40 other countries in Europe and North America participated in the 2005/2006 Health Behaviour in School-Aged Children (HBSC): WHO Collaborative Cross-National Survey (Currie, Todd & Smith, 2003: HBSC Briefing Paper 1). Previous surveys in Scotland were conducted in 1989/90, 1993/94, 1997/98 and 2001/2002 and findings from these have been published in a series of international and Scottish reports and briefing papers listed at the end of this document and can be found at: www.education.ed.ac.uk/cahru/publications/. Key findings from the 2005/2006 cross-national survey have been published in the international report *Inequalities in Young People's Health* (Currie et al, 2008).

The 2006 HBSC survey in Scotland

The 2006 HBSC survey was carried out in 300 schools across Scotland. Pupils from mixed ability classes anonymously completed questionnaires in the classroom. The sample was nationally representative and included pupils from Primary 7 (11-year-olds, n=1785), Secondary 2 (13-year-olds, n=2309) and Secondary 4 (15-year-olds, n=2306) giving a total sample of 6400. On completion of fieldwork, national data files were prepared using the standard

documentation procedures of the HBSC International Protocol and submitted to the HBSC International Data Bank at the University of Bergen, Norway. Data files were checked, cleaned and returned to countries for approval prior to their placement in the international file. Results from the 2005/2006 HBSC international survey represent more than 200,000 young people in 41 countries. Further details can be found in *Inequalities in Young People's Health* (Currie et al, 2008).

Measures used in this briefing paper

Consumption of foods

Children were asked about how regularly they consumed various foods and drinks. *How many times a week do you usually eat the following things?* Fruit / Vegetables / Brown bread / White bread / Sweets / Crisps / Chips / Biscuits (*Never / Less than once a month / Once a week / 2-4 days a week / 5-6 days a week / Once a day, every day / Every day, more than once*).

How many times a week do you usually drink the following things? Water / Low fat or semi-skimmed milk / Whole or full fat milk / Coke or other soft drinks that contain sugar (*Never / Less than once a week / Once a week / 2-4 times a week / 5-6 times a week / Once a day, every day / Every day, more than once*).

Breakfast Consumption

Children were asked how often they usually ate breakfast on weekdays. *How often do you usually have breakfast (more than a glass of milk or fruit juice)? On weekdays? (I never have breakfast during weekdays / one day / two days / three days / four days / five days)*.

Lunch on Schooldays

Children were asked what they usually did for lunch on school days. *On most school days, what do you do for lunch? (School lunches in the dining room or canteen / Packed lunch in school / Go home for lunch / Buy lunch from local shop, café or van / I don't eat lunch / other)*.

Academic achievement

Children were asked how they rated their own school performance. *In your opinion, what does your class teacher(s) think about your school performance compared to your classmates? (Very good / Good / Average / Below average)*.

Self-Rated Health

Children were asked about their perceived level of health. *Would you say your health is...? (Excellent / Good / Fair / Poor)*.

Meeting Scottish Government Physical Activity Guidelines

Children were asked about their physical activity levels. *Over the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day? (0 days / 1 day / 2 days / 3 days / 4 days / 5 days / 6 days / 7 days)*.

Acknowledgements

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HBSC publications and HBSC information

Further information on the international report from the 2005/6 survey can be obtained from the International Study website www.hbsc.org. The International Coordinating Centre for the HBSC Study is the Child and Adolescent Health Research Unit (CAHRU), The University of Edinburgh.

HBSC Briefing Papers from earlier surveys include:

Briefing Paper 1: Introduction, background and dissemination of the 2002 HBSC survey in Scotland.

Briefing Paper 2: Mental well-being among schoolchildren in Scotland: age and gender patterns, trends and cross-national comparisons.

Briefing Paper 3: Gender Matters: Physical activity patterns of schoolchildren in Scotland.

Briefing Paper 4: Mental-health and well-being in the context of school: Young people in Scotland.

Briefing Paper 5: How are Scotland's young people doing? A cross-national perspective on physical and emotional well-being.

Briefing Paper 6: How are Scotland's young people doing? A cross-national perspective on health-related risk.

Briefing Paper 7: How are Scotland's young people doing? A cross-national perspective on physical activity, TV viewing, eating habits, body image and oral hygiene.

Briefing Paper 8: Bullying and fighting among schoolchildren in Scotland: age and gender patterns, trends and cross-national comparisons.

Briefing Paper 9: Social Context of Bullying Behaviours.

Briefing Paper 10: Bullying: Health, Well-Being and Risk Behaviours.

Briefing Paper 11: Family affluence and health among schoolchildren.

Briefing Paper 12: Family structure and relationships and health among schoolchildren.

Briefing Paper 13: Perceptions of school and health of schoolchildren.

Briefing Paper 14: Mental well-being of young people in Scotland: 1994-2006.

Briefing Paper 15: Key findings from the 2006 Scottish Health Behaviour in School-aged Children Study.

Briefing Paper 16: Oral Health among young people in Scotland

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