



HBSC Briefing Paper 26

Active Travel to School

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Active travel is an important source of moderate to vigorous physical activity (MVPA) for young people¹. Active commuting to school is associated with healthy body composition², greater cardiovascular fitness³ and improved cognitive performance in school⁴.

Summary of key findings

- Around 50% of Scottish school children report that their journey to school is predominantly active.
- Active travel to school is more common amongst primary-school pupils
- Active travel to school is less frequent among young people in more affluent households.
- 37% of adolescents with a 5 minute (or less) journey to school travel via car, bus or other motorised transport.
- A very small percentage (2%) of Scottish adolescents travel to school by bicycle.

The Scottish context

The five year review of Health Scotland's 'Let's Make Scotland More Active' strategy⁵ found little improvement in active travel in the general population between 2003 and 2009. Subsequent strategies such as the Scottish Government's 'Obesity Route Map Action Plan'⁶ recognise the importance of transforming every-day sedentary behaviour into activities such as walking or cycling. The Cycling Action Plan for Scotland⁷ also aims to encourage the use of bicycles for everyday travel as well as targeting increased safety for cyclists on Scottish roads. This Briefing Paper examines determinants and outcomes of active travel to school amongst adolescents in Scotland in order to assist further policy development in this area.

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Gender and age

A lower proportion of secondary school pupils (13- and 15-year olds) walk or cycle to school (42%), compared to primary pupils (61%). Little difference is seen between 13- and 15-year olds.

Overall, there is little difference between boys and girls in active travel (50% and 47%, respectively). There is also no gender difference within each school grade (Figure 1).

A gender difference is seen in the prevalence of cycling, such that boys are more likely than girls to cycle to school (4% versus 1%, respectively). Little gender difference is seen in the prevalence of walking to school.

For each age group there has been little change in the prevalence of active travel to school since the 2006 HBSC survey in Scotland.

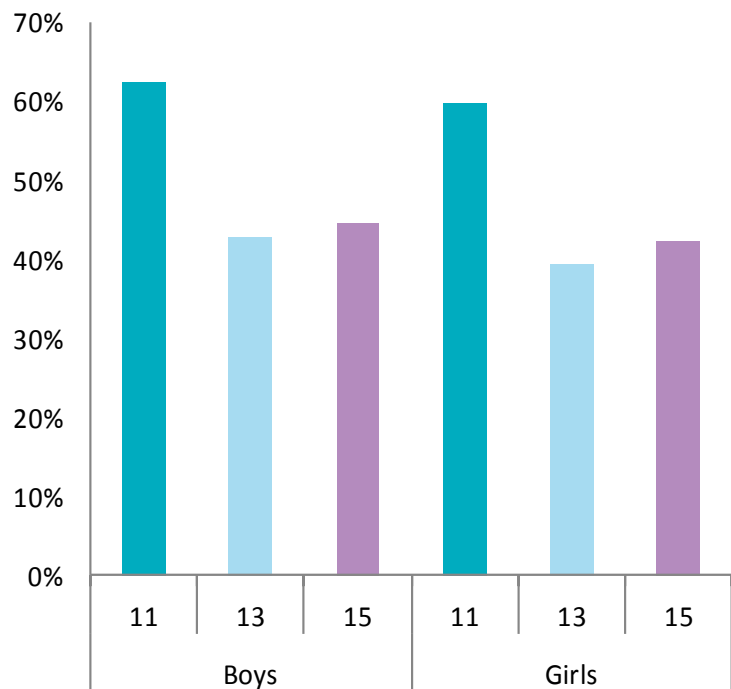


Figure 1: Proportion of adolescents reporting active travel to school by age and gender

Family affluence

Active travel to school is more common amongst adolescents in low affluence families (58%) compared to medium (48%) and high affluence families (40%), as categorised by the Family Affluence Scale⁸. This relationship may be explained in part by family car ownership: 71% of those with no family car travel actively to school, compared to 55% of those with one and 41% of those with two or more family cars.

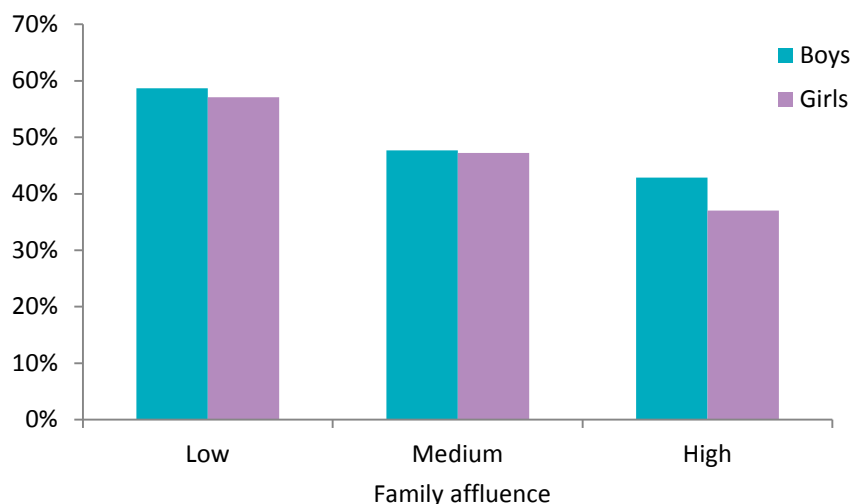


Figure 2: Proportion of adolescents reporting active travel to school (walking or cycling) by gender and family affluence.

Urban/rural classification and journey time

Whilst 46% of secondary pupils in large urban areas walk or cycle to school, only 30% attending school in remote rural areas do so. A similar, but less pronounced difference exists among primary school pupils (Figure 3).*

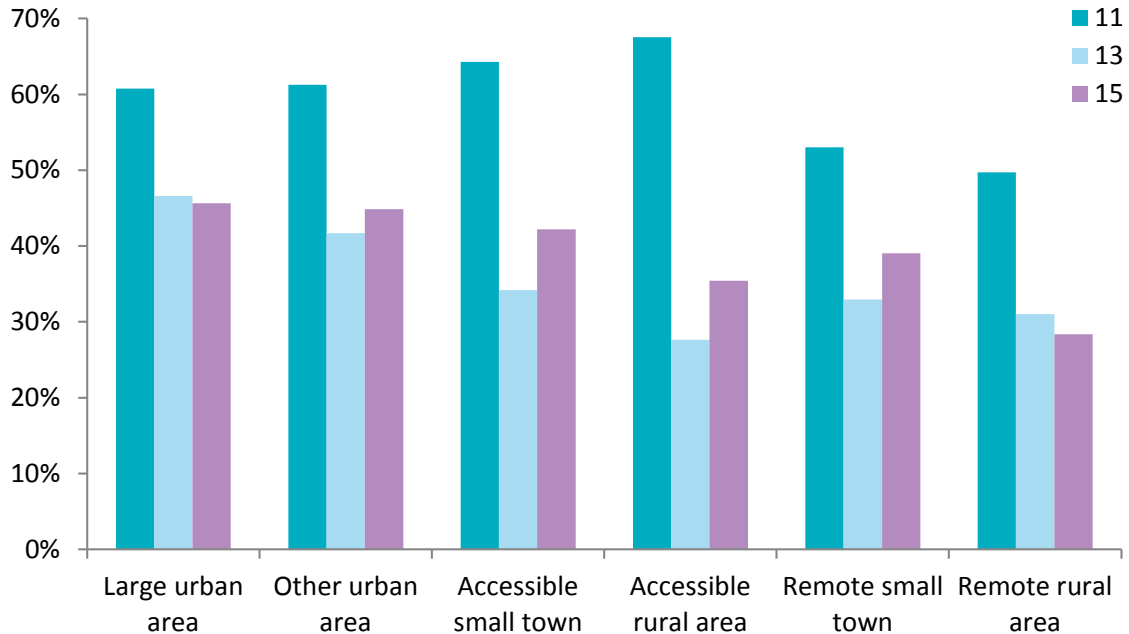


Figure 3: Proportion of adolescents reporting active travel to school by age and urban/rural classification

Those with shorter journeys to school are more likely to walk or cycle. However, over a third (37%) of adolescents whose journey takes less than five minutes travel to school via motorised transport. This figure grows to 51% of those whose journey takes 5-15 minutes.

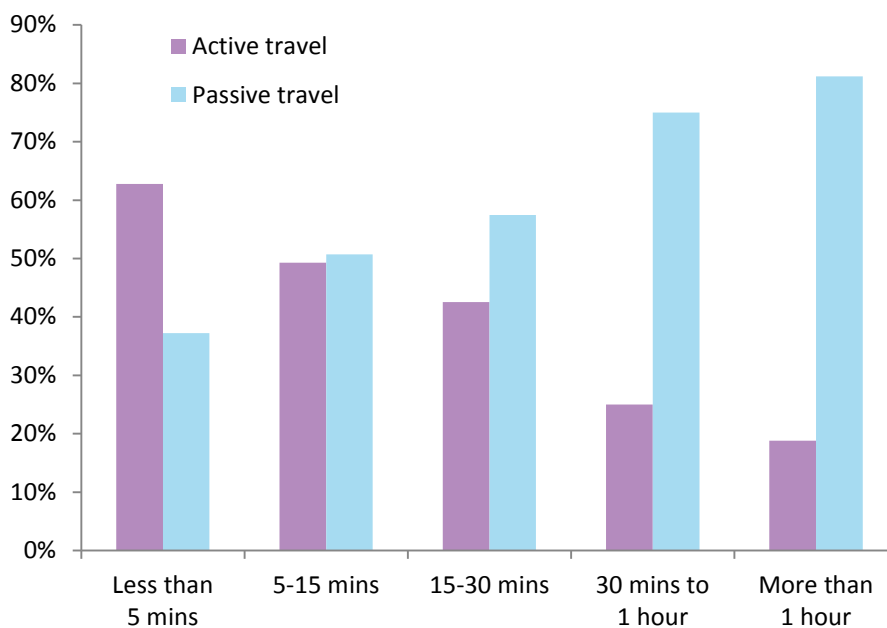


Figure 4: Proportion of adolescents reporting active and passive travel to school by journey time

* Pupils' school postcode was used to assign an urban/rural classification.

Associations with physical activity

The majority (54%) of Scottish adolescents do not engage in moderate to vigorous physical activity (MVPA) for over 60 minutes at least 5 days a week. However, secondary (but not primary) school pupils who travel to school via active means are more likely to engage in moderate activity this frequently.

Active and passive travellers are, however, equally likely to engage in 60+ minutes of MVPA 7 days a week. Active travel to school shows little association with engagement in vigorous physical activity.

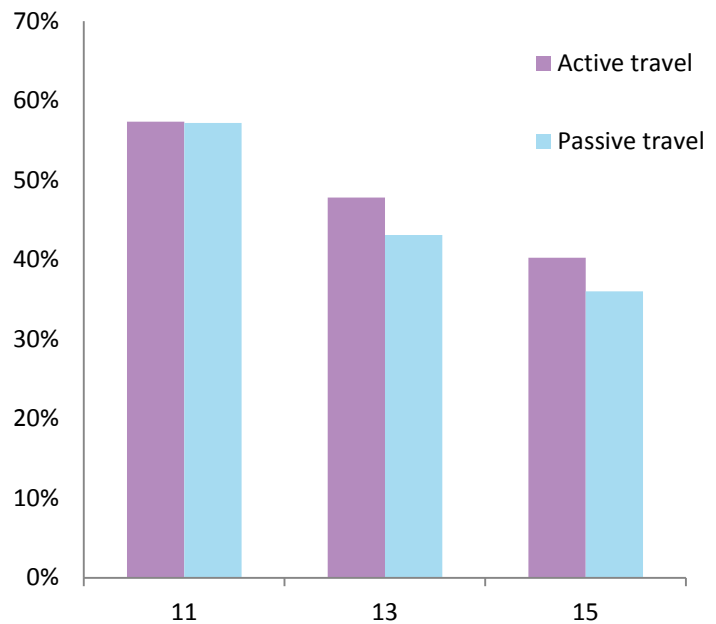


Figure 5: Proportion engaging in one hour of MVPA 5 days a week by travel method and age

Background



Motorised transport to school is increasingly common, despite journey distances remaining suitable for walking and cycling⁹. Forty-four percent of primary and 26% of secondary students were driven to school by car in 2012 as opposed to 38% and 20%, respectively, between 1995 and 1997¹⁰. A corresponding fall in the number of school children walking to school was seen over this period and levels of cycling to school have remained consistently low in the UK.

Methods

Between January and June 2014, a nationally representative sample of 10,839 Scottish school children (aged 11, 13 and 15 years) completed the Health Behaviour in School-aged Children (HBSC) survey as part of the HBSC: WHO Collaborative Cross-National Study in 43 countries¹¹. This Briefing Paper uses HBSC Scotland data to describe patterns of active travel to school, examine potential determinants of active travel, and explore differences in method of travelling to school across key socio-demographic groups. The impacts of active travel on adolescents' physical activity levels are also investigated.**

Discussion of key findings

Findings from the Scottish HBSC survey show that adolescents who walk or cycle to school are more likely to engage in moderate activity at least 5 days a week, suggesting that active travel can make an important contribution to weekday MVPA. A lack of association with vigorous physical activity suggests that active travel does not necessarily act as a stimulus to further activity throughout the day.

Active travel to school may be primarily determined by practical considerations. For instance, adolescents from more affluent families are less likely to walk or cycle to school which may be partly due to family car ownership. Policy campaigns may be required to support or encourage reduced usage of personal motor vehicles for school journeys for this group. Secondary school children living in remote rural areas are also less likely to walk or cycle to school and therefore alternative opportunities for physical activity must be encouraged among these groups.

The transition to secondary school appears to be a window of opportunity for encouraging active travel. It is possible that physical activity levels could be increased by encouraging adolescents to walk or cycle as part of a journey via public transport, for example by getting off the bus a station early. There should be a focus on encouraging secondary school girls to travel actively since their overall levels of MVPA are low compared to other groups¹¹.

There has been no improvement in active travel to school amongst Scottish adolescents in the past decade, despite investment in this area⁶. A key policy intervention should be to reduce the prevalence of short passive journeys. Those whose journey takes between 5 and 15 minutes are an important target, as over half of this group travel to school passively. Whilst some of these journeys may not be suitable for walking, many are likely to fall within 5 miles (assuming 10 mins at 30mph), a distance which is regarded as suitable for cycling⁹. These findings highlight the importance of policies which facilitate cycling to school as currently a very small proportion of Scottish children (2%) use this method, compared to 22% of German adolescents¹² and over 35% in the Netherlands¹³. Whilst further investigation into the barriers preventing active travel to school in Scotland is required, action taken to create safe and accessible walking and cycling routes is likely to improve levels of physical activity in Scotland.

** Adolescents' method of travel to school was coded as 'active' (walking or cycling) versus 'passive' (bus, train, underground, boat, car, motorcycle, moped or other).

References

1. Jago, R., Wood, L., Sebire, S. J., Edwards, M. J., Davies, B., Banfield, K. . . . Montgomery, A. A. (2014). School travel mode, parenting practices and physical activity among UK Year 5 and 6 children. *BMC Public Health*, 16(14), 370.
2. Lubans, D. R., Boreham, C. A., Kelly, P. & Foster, C. E. (2011). The relationship between active travel to school and health-related fitness in children and adolescents: a systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, 8(5).
3. Cooper, A. R., Wedderkopp, N., Wang, H., Andersen, L. B., Froberg, K. & Page, A. S. (2006). Active travel to school and cardiovascular fitness in Danish children and adolescents. *Medicine and Science in Sports and Exercise*, 38(10), 1724-31.
4. Martinez-Gomez, D., Ruiz, J. R., Gomez-Martinez, S., Chillon, P., Rey-Lopez, J. P., Diaz, L. E., . . . Marcos, A. (2011). Active commuting to school and cognitive performance in adolescents: the AVENA study. *Archives of Pediatrics and Adolescent Medicine*, 165(4), 300-5.
5. NHS Health Scotland (2009). Five-year review of 'Let's Make Scotland More Active' – A strategy for physical activity. Retrieved from <http://www.healthscotland.com/uploads/documents/1150-HS%20PA%205yr%20Review%20Final.pdf>
6. Scottish Government. (2011). Obesity route map - Action plan. Retrieved from <http://www.scotland.gov.uk/Resource/Doc/346007/0115166.pdf>
7. Scottish Government. (2013). Cycling action plan for Scotland. Retrieved from <http://www.scotland.gov.uk/Resource/Doc/316212/0100657.pdf>
8. Currie, C., Molcho, M., Boyce, W., Holstein, B., Torsheim, T., & Richter, M. (2008). Researching health inequalities in adolescents: the development of the Health Behaviour in School-Aged Children (HBSC) family affluence scale. *Social Science and Medicine*, 66, 1429-1436.
9. Paths for all (2012). Active travel, active Scotland. Retrieved from http://www.pathsforall.org.uk/component/option,com_docman/Itemid,537/gid,784/task,doc_download/
10. Department for Transport (2012). National Travel Survey: 2012. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/243957/nts2012-01.pdf
11. Currie, C., Zanotti, C., Morgan, A., Currie, D., de Looze, M., Roberts, C., Samdal, O., Smith, O. R. F. & Barnekow, V. (2012). Social determinants of health and well-being among young people. HBSC international report from the 2009/2010 survey. Retrieved from <http://www.euro.who.int/en/what-we-do/health-topics/Life-stages/childand-adolescent-health/publications/2012/social-determinants-of-health-and-well-being-among-young-people.-health-behaviour-in-school-aged-children-hbhc-study>.
12. Reimers, A. K., Jekauc, D., Peterhans, E., Wagner, M. O. & Woll, A. (2013). Prevalence and socio-demographic correlates of active commuting to school in a nationwide representative sample of German adolescents. *Preventive Medicine*, 56(1), 64-69.
13. Bere, E., van der Horst, K., Oenema, A., Prins, R. & Brug, J. (2008). Socio-demographic factors as correlates of active commuting to school in Rotterdam, the Netherlands. *Preventive Medicine*, 47(4), 412-6.

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