

Public Health Benefits of Active Travel to rail stations in Scotland

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To find out more, please contact: monitoring@sustrans.org.uk

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Public Health Benefits Summary

Data Summary:

- In total, 42% of journeys to railway stations in Scotland were made using active transport.
- When extended to capture all journeys in a year, this equates to just under 26.7 million active travel journeys (21.7 million walking journeys and 5 million cycling journeys) to stations in 2022
- This also equates to 73,000 active travel journeys per day.

Public health benefits:

- Active travel to stations by rail passengers prevents over 600 premature deaths per year due to increased physical activity.
- Active travel also saves the NHS just over £80 million in treatment costs for diseases related to inactivity over the next 10 years, which equates to a reduction of 7,600 cases of diseases related to inactivity, including type 2 diabetes, coronary heart disease, stroke, breast cancer, colorectal cancer, dementia, depression, and hip fracture.
- In total, 11,000 Quality-Adjusted Life Years (QALYs) are gained, and 12,000 Disability-Adjusted Life Years (DALYs) are avoided through active travel to stations over 10 years.

Notes:

- The estimated values were calculated using the World Health Organization's HEAT methodology (Health Economic Assessment Tool for walking and cycling) and Sport England's MOVES methodology (Model for estimating the Outcomes and Values in the Economics of Sport).
- HEAT and MOVES support assessments of the health and economic impacts of walking and cycling on premature mortality through changes in physical activity levels, exposure to air pollution while walking or cycling, and risk of fatal crashes in traffic.

- Data is based on the Autumn 2022 survey of passengers logging into station Wi-Fi, gathered by ScotRail's market insight team.
- ScotRail is the publicly owned company operating rail services in Scotland. It is owned by the Scottish Government and overseen by Scottish Rail Holdings Limited (SRH Ltd).
- The report was prepared by Sustrans' Research & Monitoring Unit.

Travel to rail stations in Scotland

ScotRail projects around 64 million journeys for the 2022 calendar year. A survey conducted online at ScotRail stations asked passenger how they travelled to the station. The survey was conducted across the rail network in stations in varying urban classifications to capture as representative a sample as possible. The results are show in Table 1.

Table 1: Mode of travel to ScotRail stations

Mode of travel	Reported number of journeys	Percentage of journeys
Bicycle	2,967	8%
Bus/Coach	5,614	15%
Car (driver)	7,041	18%
Car (passenger)	3,841	10%
Other	5,868	15%
Walk	13,014	34%
Total	38,345	100%

In total, 42% of journeys to stations were made using active transport. When extended to capture all journeys in a year, this equates to just under 26.7 million active travel journeys (21.7 million walking journeys and 5 million cycling journeys) to stations in 2022, or 73,000 active travel journeys per day.

Public health benefits of active travel

Active travel to stations by passengers prevents over 600 premature deaths per year due to increased physical activity.

Active travel also saves the NHS just over £80 million in treatment costs for diseases related to inactivity over the next 10 years, which equates to a reduction of 7,600 cases of diseases related to inactivity, including type 2 diabetes, coronary heart disease, stroke, breast cancer, colorectal cancer, dementia, depression, and hip fracture.

In total, 11,000 Quality-Adjusted Life Years (QALYs) are gained, and 12,000 Disability-Adjusted Life Years (DALYs) are avoided through active travel to ScotRail stations over the next 10 years.

Calculations of the public health benefit of the active travel trips to ScotRail stations were performed using the WHO's HEAT¹ tool and Sport England's MOVES² tool.

¹ <https://www.who.int/tools/heat-for-walking-and-cycling>

² <https://www.sportengland.org/guidance-and-support/measuring-impact?section=moves>

Methodology and model assumptions

This appendix details assumptions and inputs used to generate the above results. It should be noted that the estimates provided by these tools are based on these assumptions; some degree of uncertainty is unavoidable.

Passenger numbers

ScotRail estimates that 64 million journeys were taken on its network in 2022. This was divided by 365 to find the average daily number of journeys (about 175,000). This average was used as the population for the HEAT and MOVES analyses.

Population data

The adult population of Scotland was taken from the 2011 Census. The census data breaks down the adult population into 5-year bands – it was assumed that the proportion of ScotRail users in each age band are the same as that in the general population.

Active journey distance

Distance traveled to the station was not captured in the ScotRail survey. National averages from the 2011 National Travel Survey were used for calculations related to distance or time spent performing active travel.

Health Economic Assessment Tool (HEAT) for walking and cycling

HEAT estimates the health and economic impacts of cycling and walking. The tool provides a measure of the impacts of active transport on premature mortality. HEAT can assess the impact of increased physical travel, decreased exposure to air pollution, risk of fatal crashes in traffic, and reductions in carbon emissions. This assessment only presents the results of the assessment based on increased physical travel. HEAT uses sub-national data for all-cause mortality³ and Value of Statistical Life (VSL) as default. We did not change any of the default assumptions.

³ <https://vizhub.healthdata.org/gbd-results/>

Model for estimating the Outcomes and Values in the Economics of Sport (MOVES)

Sport England's MOVES tool is based on the evidence showing that increased physical activity lowers the risk of developing various diseases, such as cardiovascular disease and diabetes. The tool estimates savings to the NHS based on the reduction of cases of these diseases from increases in exercise. The tool also provides measures to evaluate the cost-benefit of sport and exercise programmes. Cost-benefit measures are not reported here as currently there is no programme being implemented. Calculations are based on starting level of activity, type and intensity of activity, frequency and time of activity, and age group. Starting activity level was assumed to be low (defined as "Reported 30-59 minutes per week of moderate physical activity, 15-29 minutes per week of vigorous physical activity or an equivalent combination of these"). For both cycling and walking, we assumed the lowest intensity of activity. Duration was calculated based on data from the 2011 National Travel Survey. Frequency was assumed to be 5 days per week. The proportion of users of active travel in each age group was assumed to be the same as that in the general population. All other default options (willingness to pay for a QALY, discount rate for costs and outcomes, and annual drop-off) were kept.