



Interventions to increase Active Travel

Active travel is used to describe walking and cycling for purposeful journeys to a destination, alone or in combination with public transport. Levels of active travel in Wales are currently low compared to other countries in Europe^a. Increasing active travel is a key priority in Wales, contributing to the achievement of all seven of Wales' well-being goals.^b This topic evidence summary aims to identify and explore the following questions:

1. What are the most effective universal or targeted/selective group interventions for increasing active travel in the general population?
2. What interventions lead to a modal shift in the general population's transport use, for example limiting or decreasing car use and/or increasing use of cycling, walking or public transport?

✓ **This summary is designed to:**

- Support those making decisions about national or local policies or action
- Support exploratory conversations about interventions, programmes and services by:
 - Showcasing the types of interventions that have been researched
 - Highlighting the types of interventions that show promising results and are worthy of further-context specific exploration
 - Highlighting the types of interventions less likely to be supported by the evidence and that should be avoided at this time.

✗ **This summary is not designed to:**

- Give detailed quality and contextual assessment of the evidence base for each intervention and should not be used alone to allocate resources
- Consider competing priorities, adaptation to local context, effect sizes nor costs
- Cover all possible interventions.

Based on data extracted from the sources identified, interventions have been categorised into those which the evidence suggests may be effective, may be ineffective and those for which the evidence is inconclusive (see grading key p.2).

Many of the studies identified also included other outcomes such as increases in physical activity which have not been reported on in this topic evidence summary. It is therefore suggested that if you plan on implementing any of these interventions, that you further scrutinise the evidence base to identify any unintended consequences, or any positive changes in other areas or outcomes (for example, in reducing congestion, reducing road traffic accidents or increasing overall physical activity levels).

^a Welsh Government (2021). Active Travel Act Guidance, July 2021. Cardiff: Welsh Government. <https://gov.wales/sites/default/files/publications/2022-01/active-travel-act-guidance.pdf>

^b Welsh Government (2021). Active Travel Act Guidance, July 2021. Cardiff: Welsh Government. <https://gov.wales/sites/default/files/publications/2022-01/active-travel-act-guidance.pdf>



About this document

The statements below have been compiled using evidence from 87 primary studies which met our inclusion criteria for this topic evidence summary^c. To be considered for inclusion they had to include an outcome measure of active travel (such as walking or cycling) for a purposeful journey to a destination, or a modal shift in transport (for example, a decrease in car use with corresponding increase in walking). Statements have been categorised according to setting:

1. [Interventions in the general population and/or community](#)
2. [School travel initiatives](#)
3. [Workplace travel initiatives](#)

Evidence Grading Key:

The evidence suggests the intervention could be implemented:	
The intervention is supported by good or moderate quality evidence of its effectiveness	
Explanation: Majority of studies are appraised as being of good or moderate quality and are showing an effect in favour of the intervention	Further considerations: Further context-specific exploration needed (generalisability to Wales). Consider thorough evaluation if implementing these types of programmes
Further research needed:	
The evidence base for this intervention is made up of largely poor quality studies	
Explanation: Majority of studies are appraised as being of poor quality, but are still showing an effect in favour of the intervention OR Majority of studies are appraised as being of poor quality and of no effect	Further considerations: More robust primary research and thorough evaluation needed
Further research needed:	
The evidence base is inconsistent. There may be some evidence supporting the use of this intervention, but it is not conclusive	
Explanation: The results of studies are inconsistent with no clear majority in favour or not in favour of the intervention, regardless of quality	Further considerations: More robust primary research and thorough evaluation needed
Further research needed:	
There is a lack of evidence for this intervention	
Explanation: Only one study has been identified for this intervention (regardless of quality)	Further considerations: More primary research and thorough evaluation needed
The evidence suggests the intervention should not be implemented:	
There is good or moderate quality evidence to suggest that this intervention is likely to be ineffective	
Explanation: Majority of studies are appraised as being of good or moderate quality but show no effect of the intervention	Further considerations: These interventions are less likely to be supported by evidence and should be avoided at this time

^c Some studies may appear in more than one statement if they assess multiple interventions.



Interventions in the general population and/or community		Multicomponent town or region-wide initiatives (such as cycling demonstration towns) may increase cycling to school or cycling to work. ^{18, 32, 69}
		Behavioural interventions that use education or promotion may increase active travel. ^{11, 15, 25, 41, 61, 63, 71, 82, 83}
		Multicomponent community interventions consisting of built environment / infrastructure improvements and non-infrastructure behaviour change initiatives have an inconsistent evidence base. ^{37, 46, 48}
		Multicomponent interventions to enhance public transport routes and infrastructure and improve walking and cycling links may increase active travel, but the evidence is largely of poor quality. ^{8, 35, 36, 60, 68}
		Interventions to improve the connectivity of areas by creating/upgrading walking and cycling links have an inconsistent evidence base. ^{28, 30, 33, 34, 39, 47}
		Interventions that enhance rail routes/infrastructure to increase active travel have an inconsistent evidence base. ^{6, 9}
		Multicomponent neighbourhood interventions aimed at increasing active travel have an inconsistent evidence base. ^{13, 27, 45}
School travel Initiatives		Walking school bus interventions may be effective in increasing levels of walking to school in children. ^{3, 43, 49, 56, 57, 64, 84}
		Interventions promoting cycling to school have an inconsistent evidence base. ^{20, 21, 24, 26, 55, 64, 66, 79, 80}
		Behaviour change interventions incorporating cross-curriculum learning into school travel plans may increase active travel to school, but the evidence is largely of poor quality. ^{29, 42, 53, 54, 64, 74, 75, 76, 81, 85}
		Initiatives similar to safe routes to school programmes that promote active travel to school may increase active travel to school but the evidence is largely of poor quality. ^{5, 10, 12, 14, 19, 22, 23, 37, 38, 40, 48, 50, 51, 52, 64, 65, 67, 72, 73, 77, 78, 86, 87}
		Designated active travel to school days plus additional promotional components are lacking in evidence. ¹²
		Incentive-motivated approaches to promote active travel to school have an inconsistent evidence base. ^{17, 31, 64}
Workplace travel initiatives		National media campaigns targeting workers may be effective at increasing active travel to work. ^{58, 59}
		Multicomponent initiatives consisting of built environment or infrastructure changes and workplace incentives and/or restrictions to encourage active travel to work have an inconsistent evidence base. ^{1, 7, 16, 70}
		Workplace behaviour change initiatives to increase active travel have an inconsistent evidence base. ^{2, 4, 62}
		Interventions to change workplace parking policies to encourage active travel to work are lacking in evidence. ⁴⁵



Interventions in the general population and/or community

Multicomponent town or region-wide initiatives (such as cycling demonstration towns) may increase cycling to school or cycling to work ^{18, 32, 69}

Intervention: Three moderate quality studies evaluated cycling demonstration town interventions. These aimed to stimulate levels of cycling through a multicomponent approach. Components included upgrades to physical infrastructure (such as new cycling facilities) to increase access to public transport, or within schools, and behaviour change elements such as cycle training schemes and promotional marketing. One study also included 'Bike it' officers in schools.

Evidence quality: All three studies reported increases in cycling for active travel to work or school, although the statistical significance was unclear in one study.

Generalisability: Two of the studies were conducted in the UK and one was conducted in the USA. Therefore, the interventions could be partially generalisable to Wales, but the contextual environment of the different countries should be considered.

If proceeding with this intervention: It is suggested that a detailed examination of the evidence base is conducted, taking into account intervention context, to support design and implementation. A thorough evaluation of impact should also be conducted.

Behavioural interventions that use education or promotion may increase active travel. ^{11, 15, 25, 41, 61, 63, 71, 82, 83}

Intervention: Nine studies (two good, six moderate, and one poor quality) were identified examining behavioural interventions. All studies aimed to increase active travel through education and promotion and were non-infrastructure in nature. Intervention features varied between studies. Education features included distribution of educational material and resource packs, seminars, and training of eco-travel coordinators. Promotion features were celebration events, led walks, distribution of promotional material and individualised travel marketing strategies. Other behaviour change techniques were used in some studies (such as prompts and goal setting).

Evidence quality: Overall, the majority of studies showed an effect in favour of the intervention across a range of active travel outcomes (such as purposeful walking and cycling). However, it should be noted that four studies out nine (one high quality and three moderate quality) did not report whether their findings were statistically significant.



Generalisability: Four studies were conducted in the UK, three in Australia, one in the USA and one in Japan. Therefore, the interventions could be partially generalisable to Wales, but the contextual environment of the different countries should be considered.

If proceeding with this intervention: It is suggested that a detailed examination of the evidence base is conducted, taking into account intervention context, to support design and implementation. A thorough evaluation of impact should also be conducted.

Multicomponent community interventions consisting of built environment / infrastructure improvements and non-infrastructure behaviour change initiatives

have an inconsistent evidence base.^{37, 46, 48}

Intervention: Three studies (one moderate quality, two poor quality) explored multicomponent community-wide interventions. One focused on increasing walking and the other two on increasing active travel and reducing private car travel. Intervention components included features such as improving walking and cycling routes, promotional activities and campaigns, and walking groups with added incentives for participation/meeting goals. Other components included promotional days (such as smart commute days) and funding for improvements to infrastructure (e.g., bike racks, pavements). One study also included a safe routes to school programme as part of the wider community intervention.

Evidence quality: The studies varied in quality and reported mixed effectiveness for active travel outcomes.

Generalisability: Two studies were conducted in the USA and one in Ireland so further consideration needs to be given to whether these interventions would be generalisable to Wales.

If proceeding with this intervention: It is suggested that further robust research and thorough evaluation of impact is needed.

Multicomponent interventions to enhance public transport routes and infrastructure and improve walking and cycling links (such as traffic-free routes, bike lanes, and improving pavements) may increase active travel, but the evidence is largely of poor quality.^{8, 35, 36, 60, 68}

Intervention: Five poor quality studies investigated the effectiveness of three multicomponent built environment interventions. The studies investigated the effect of public



transport route enhancement with improved walking and cycling links on active travel outcomes. Three of the studies evaluated the same intervention (the Cambridge guided busway; a dedicated bus-only route on a purpose built track) but at different time points and using different outcome measures. Although, the components of the interventions differed, all combined public transport improvements (such as train line extensions, new residential 'TRAX' stops or bus networks) with improved cycling and walking links (such as traffic-free walking and cycling routes, improved footpaths, and new bike lanes).

Evidence quality: The majority of studies showed an effect in favour of the intervention for at least one measure of active travel; however, all the studies were rated as poor quality.

Generalisability: Two studies took place in the USA, with the three examining the Cambridge guided busway taking place in the UK. Therefore, the interventions could be partially generalisable to Wales, but the contextual environment of the different countries should be considered.

If proceeding with this intervention: It is suggested that further robust research and thorough evaluation of impact is needed.

Interventions to improve the connectivity of areas by creating/upgrading walking and cycling links have an inconsistent evidence base.^{28, 30, 33, 34, 39, 47}

Intervention: Six poor quality studies looked at improving cycle and walking links. All sought to increase connectivity of areas (such as neighbourhoods linking to commercial areas) by improving infrastructure. Intervention components included construction of traffic-free pathways and bridges and improving on- and off-street cycle lanes.

Evidence quality: Results were inconsistent with three studies reporting significant positive effects for active travel outcomes. However, all studies were appraised as poor quality.

Generalisability: Five of the six studies were conducted in the USA, with one study conducted in the UK. Therefore, the interventions could be partially generalisable to Wales, but the contextual environment of the different countries should be considered.

If proceeding with this intervention: It is suggested that further robust research and thorough evaluation of impact is needed.



Interventions that enhance rail routes/infrastructure to increase active travel have an inconsistent evidence base.^{6, 9}

Intervention: Two studies (one moderate and one poor quality) evaluated enhancements to public transport rail routes. One moderate quality study examined the effect of a new rail line and one poor quality study looked at adding a new rail stop to an existing route.

Evidence quality: Both the results and quality of the included studies were inconsistent. One study found no significant effect of the addition of a new rail line on active travel outcomes, and the other found a significant increase in active travel outcomes from adding a new rail stop.

Generalisability: Both studies were conducted in the USA so further consideration should be given to whether they would be generalisable to Wales.

If proceeding with this intervention: It is suggested that further robust research and thorough evaluation of impact is needed.

Multicomponent neighbourhood interventions aimed at increasing active travel have an inconsistent evidence base.^{13, 27, 45}

Intervention: Three studies (two moderate, one poor quality) examined multicomponent neighbourhood interventions. Two were derived from the same intervention with differing aims, outcome measures and durations. All studies were multicomponent in nature and features across the interventions included: 1) constructing walkable neighbourhoods with easy access to public transport, schools, public and recreational facilities, 2) plenty of open spaces and parkland, 3) increasing surveillance on streets, parks, and activity hubs.

Evidence quality: Results were inconsistent. One study showed a significant increase in active travel to physical activity locations, whereas the two studies that were linked showed no significant effect on increasing walking for transport.

Generalisability: Two studies took place in Australia and one in the USA. Therefore, the interventions could be partially generalisable to Wales, but the contextual environment of the different countries should be considered

If proceeding with this intervention: It is suggested that further robust research and thorough evaluation of impact is needed.



Interventions in specific settings:

School travel initiatives

Walking school bus interventions may be effective in increasing levels of walking to school in children.^{3, 43, 49, 56, 57, 64, 84}

Intervention: Seven studies (one good, four moderate and two poor quality) investigated the effectiveness of a walking school bus intervention. The intervention comprised of groups of children walking to school chaperoned by a number of volunteer parents. The studies implemented a wide range of actions alongside this, including informally organised walking groups by parent volunteers, policy changes in schools encouraging modal shift from car to walking, involvement of local authority highway departments for route planning, infrastructure improvements like street lighting, promotional events and incentives.

Evidence quality: The majority of studies were of good or moderate quality, and all favoured the intervention, however it should be noted that four out of the seven studies (three moderate quality, one poor quality) did not report whether their findings were statistically significant.

Generalisability: Three studies were conducted in the UK, one in the USA and one in Belgium. The intervention is therefore likely generalisable to Wales, but further context-specific exploration should be considered.

If proceeding with this intervention: It is suggested that a detailed examination of the evidence base is conducted, taking into account intervention context, to support design and implementation. A thorough evaluation of impact should also be conducted.

Interventions promoting cycling to school have an inconsistent evidence base.^{20, 21, 24,}

^{26, 55, 64, 66, 79, 80}

Intervention: Nine studies (seven moderate and two poor quality) looked at the effectiveness of interventions exclusively promoting cycling to school. Embedded within the school travel plan, these studies implemented a wide range of interventions that varied in their complexity. This included simple interventions such as bicycle trains of children cycling to school under adult supervision, to more complex multicomponent interventions like Sustrans demonstration projects that incorporate extensive infrastructural improvements and behaviour change strategies. Infrastructure changes included improvements to cycling paths, installation of bike racks and separate entrances for cyclists and safer access to



schools by bicycle within the school. Behaviour change components included safety education, changing the curriculum, utilising learning tools, organising promotional days and promotional events, and incentivising uptake of cycling.

Evidence Quality: The majority of studies are of moderate quality and suggest that such interventions are effective at increasing the uptake of cycling to school in school-aged children. However, only the most recent two studies reported whether their findings were statistically significant. Of these, one study found a significant increase in mean percentage of daily commutes to school by cycling in the intervention group compared to control. The second found that the intervention had no significant effect on cycling to school. Further examination of the remaining seven studies which did not report significance may provide more certainty into the effect of this intervention.

Generalisability: Seven studies were conducted in the UK, one in the USA, and another in Belgium. Therefore, the intervention could be partially generalisable to Wales, but further context-specific exploration should be considered.

If proceeding with this intervention: It is suggested that further exploration of the evidence base to provide more certainty of the effectiveness of the intervention, or further robust research and thorough evaluation of impact is needed.

Behaviour change interventions incorporating cross-curriculum learning into school travel plans may increase active travel to school, but the evidence is largely of poor quality.^{29, 42, 53, 54, 64, 74, 75, 76, 81, 85}

Intervention: Ten studies (three moderate and seven poor quality) evaluated the effectiveness of interventions embedding behaviour change in school travel plans through cross-curricular learning. The studies implemented behaviour change strategies with classroom-based education. These included training teachers to conduct lessons and activities focusing on the health benefits of physical activity, environmental awareness and road safety training; education packs for children and their parents; promotional materials including campaign website, leaflets on benefits of walking/cycling, banners, stickers, certificates; as well as teaching students self-monitoring, goal setting and setting up social support systems.

Evidence quality: The studies showed an overall effect in favour of the intervention; however, most were of poor methodological quality.

Generalisability: Four studies were conducted in the UK, two in Spain, and one each in Germany, France, Australia and Brazil. Therefore, the intervention could be partially generalisable to Wales, but further context-specific exploration should be considered.



If proceeding with this intervention: It is suggested that further robust research and thorough evaluation of impact is needed.

Initiatives similar to safe routes to school programmes that promote active travel to school may increase active travel to school but the evidence is largely of poor quality.^{5, 10,}

12, 14, 19, 22, 23, 37, 38, 40, 48, 50, 51, 52, 64, 65, 67, 72, 73, 77, 78, 86, 87

Intervention: Twenty-two studies (nine moderate quality and 13 poor quality) examined the effectiveness of the Safe Routes to School (SRTS) programme or similar multicomponent initiatives. SRTS is a national programme promoting safe options for walking and cycling to school in the USA. The interventions in this category consisted of policy changes at local/regional levels and upgrades to physical infrastructure, along with behaviour change strategies to improve access to and attitude towards active travel in school-going children. These included funding/ grants for schools; improvements of cycling and walking paths; enforcement of speed reduction zones, traffic signals and car drop off zones; installation of bike racks, lockers in schools and shelters; safety education; curriculum; tools; organising promotion days and promotion events; and incentivising uptake of active travel. Such initiatives also involve delivering a range of associated school travel initiatives, such as walking buses, or cycling promotion. Most studies (USA and non-USA) were large multi-school evaluations (primary and/or secondary schools) with one USA study evaluating 125 SRTS projects across 350 schools. All of those in the USA examined the SRTS programme, with some comparing it to other programmes or additional components.

Evidence quality: The majority of studies showed an effect in favour of the intervention, but many did not report whether their findings were statistically significant. Most studies were also poor quality.

Generalisability: Seven studies were conducted in the USA, five in the UK, four in Australia, two in Canada, two in Denmark and one each in New Zealand and Ireland. Therefore, the intervention could be partially generalisable to Wales, but further context-specific exploration should be considered.

If proceeding with this intervention: It is suggested that further robust research and thorough evaluation of impact is needed.



Designated active travel to school days plus additional promotional components are lacking in evidence.¹²

Intervention: One poor quality study assessed the effectiveness of a dedicated active travel day celebrating the safe routes to school programme at a state-wide level in the USA, combined with additional school-level strategies to promote active travel in one school. The active travel day was promoted state-wide via the media, but the intervention school used additional strategies to encourage active travel to school on the active travel day. These included regular morning announcements in the school, written reminders for parents, recorded telephone messages to student's homes and giving a participation sticker to those who actively travelled to school on the event day.

Evidence quality: The study quality was poor but did find a statistically significant increase in active travel at the intervention school compared to control schools on the event day.

Generalisability: The intervention took place in the USA, therefore further context-specific exploration should be considered.

If proceeding with this intervention: It is suggested that further robust research and thorough evaluation be undertaken to address the gap in the evidence base.

Incentive-motivated approaches to promote active travel to school have an inconsistent evidence base.^{17, 31, 64}

Intervention: Three poor quality studies assessed the effectiveness of incentive-motivated approaches to encourage active travel in school children. Two studies evaluated schemes incentivising highest individual and/ or class attainment of active travel. The incentives included stickers, badges, certificates, prizes or entry in weekly prize draws for gift vouchers. The third study assessed the effectiveness of a technology-based intervention that used competitions where schools competed against each other, with the winning school receiving funding to spend on sports equipment, books, or resources. The schools were also able to compete against other groups participating in the intervention including local workplaces for weekly spot prizes donated by local businesses. In addition to using incentives, this study also employed a series of regular promotional events to promote interest in the scheme and encourage participation.

Evidence quality: All the included studies were of poor quality and the results were inconsistent, with one suggesting the intervention increased walking to school, but not reporting on whether the effect was statistically significant.



Generalisability: The included studies were all conducted in the UK, suggesting the intervention could be generalisable to Wales.

If proceeding with this intervention: It is suggested that further robust research and thorough evaluation of impact is needed.

Workplace travel initiatives

National media campaigns targeting workers may be effective at increasing active travel to work.^{58, 59}

Intervention: two moderate quality studies looked at national media campaigns targeting workers. Both evaluated the annual Australia Walk to Work Day, but in different years. The Walk to Work Day media campaign is an annual event in Australia where the public are encouraged to cycle or walk to work.

Evidence quality: Both studies were moderate quality and found a significant effect on active travel outcomes (walking combined with public transport, and health enhancing active commuting).

Generalisability: Both studies took place in Australia so the generalisability of these findings to Wales needs further investigation.

If proceeding with this intervention: It is suggested that a detailed examination of the evidence base is conducted, taking into account intervention context, to support design and implementation. A thorough evaluation of impact should also be conducted.

Multicomponent initiatives consisting of built environment or infrastructure changes and workplace incentives and/or restrictions to encourage active travel to work have an inconsistent evidence base.^{1, 7, 16, 70}

Intervention: Four studies (one moderate quality, three poor quality) explored multicomponent workplace initiatives. The components of the interventions differed but included elements such as introducing a new public transport express route, improvements to walking and cycling paths, limiting parking spaces or permits, increasing parking charges, improving changing facilities for walkers and cyclists, secure cycle storage, discounted or free public transport and subsidised cycle purchase schemes.



Evidence quality: The results of the included studies were inconsistent, with most measuring multiple active travel outcomes separately (cycling, walking etc.) and finding the intervention was effective for some outcomes but not others. The majority of studies were poor quality.

Generalisability: The studies were conducted in the UK, Canada, Australia and Finland. Therefore, the intervention could be partially generalisable to Wales, but further context-specific exploration should be considered.

If proceeding with this intervention: It is suggested that further robust research and thorough evaluation of impact is needed.

Workplace behaviour change initiatives to increase active travel have an inconsistent evidence base.^{2, 4, 62}

Intervention: Three studies (one good, two poor quality) were identified on workplace behaviour change initiatives to increase active travel. Intervention durations ranged from ten weeks to six months and included differing components, such as: the distribution of active travel-related promotional and educational materials, SMS and email prompting, and training of 'Walk to Work' promoters.

Evidence quality: Both the results and the quality of the included studies were mixed.

Generalisability: The findings are from interventions undertaken in the UK and are likely generalisable to the Welsh context.

If proceeding with this intervention: It is suggested further robust research and evaluation be undertaken.

Interventions to change workplace parking policies to encourage active travel to work are lacking in evidence.⁴⁵

Intervention: One poor quality study that focused on workplace parking policies and active travel was identified. This intervention investigated whether 'free', 'paid' or 'no' workplace parking at different workplaces affected commuting behaviour, and how changes in these policies subsequently affected active travel.



GIG
CYMRU
NHS
WALES

Iechyd Cyhoeddus
Cymru
Public Health
Wales

Gwasanaeth Tystiolaeth
Evidence Service

Evidence quality: The intervention found no significant effect for active travel in workplaces transitioning from 'free' to 'paid' or 'no' parking. However, relaxation of parking policies was associated with a higher proportion of trips made by motor vehicles.

Generalisability: The findings are from a UK-based intervention are therefore likely to be generalisable to the Welsh context.

If proceeding with this intervention: It is suggested that further robust research and thorough evaluation be undertaken to address the gap in the evidence base.



Methods

A systematic search of reliable robust evidence sources (sources which use appropriate and well-executed methods to gather evidence) was undertaken (list available on request). Relevant reviews identified from the search were screened for eligibility against the topic evidence summary inclusion criteria.

The robust source search and screening identified the following eight systematic reviews to be relevant:

- Baker, P.R.A., et al., Community wide interventions for increasing physical activity. Cochrane Database of Systematic Reviews, 2015(1).
- Haynes, C., et al., Evidence statements on the effectiveness of local interventions to promote cycling and walking for recreational and travel purposes. 2012, NICE: London.
- Hosking, J., et al., Organisational travel plans for improving health. Cochrane Database of Systematic Reviews, 2010(3).
- Johnson, M., et al., Synthesis of evidence relating to barriers and facilitators to implementing interventions that promote cycling and walking, and to carrying out cycling and walking for recreational and travel purposes. Sheffield: School of Health and Related Research, The University of Sheffield, 2012.
- NICE, Physical activity and the environment update. Effectiveness and cost effectiveness evidence review 3: Park, Neighbourhood and Multicomponent Interventions. 2018, NICE: London.
- NICE, Physical activity and the environment update Effectiveness and cost effectiveness Evidence review 1: public transport. 2018, NICE: London.
- NICE, Physical activity and the environment update Effectiveness and cost effectiveness Evidence review 2: 'Ciclovia' and Street Closures, Trails and Safe Routes to Schools. 2018, NICE: London.
- NICE, Physical activity and children Review 5: Intervention Review: Children and Active Travel. 2008, NICE Public Health Collaborating Centre - Physical Activity: London.

Data from the primary studies included in the reviews which met the inclusion criteria for this summary was extracted into a spreadsheet (available on request). This includes greater detail about the sources identified which were then used to compile the topic evidence statements. The quality appraisal scores from the systematic review authors were also extracted, along



with the tool used. In total, 55 studies included in the systematic reviews met the inclusion criteria for this topic evidence summary.

A top-up search of MEDLINE for primary studies published since 2016 was also conducted, to ensure the evidence base examined was up to date. Search results from this top-up search were screened for eligibility against the topic evidence summaries inclusion criteria. Thirty-two relevant primary studies were identified from the top-up search. Data was extracted into the spreadsheet, and studies were quality assessed using the EPHPP tool^d.

In total, evidence from 87 studies were included in this topic evidence summary.

When compiling the evidence statements, consideration was given to the study design/quality (as reported by the systematic review authors), along with the effect for active travel outcomes. Further information on the methods used for this topic evidence summary, along with a list of the specific outcomes that met our inclusion criteria can be found in the topic evidence summary protocol (available on request).

PLEASE NOTE: A limited number of sources were searched for this evidence summary. Therefore, the included evidence may not cover the totality of the evidence base and new and innovative interventions may have been missed.

^d Effective Public Healthcare Panacea Project. Quality assessment tool for quantitative studies. Canada. <https://www.ephpp.ca/quality-assessment-tool-for-quantitative-studies/> [Last accessed: 24/08/22]



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