Physical activity and the environment

Review One:

TRANSPORT

NICE guideline PH8 (published January 2008) has been updated and replaced by NG90.

New recommendations have been added on strategies, policies and plans to increase physical activity in the local environment (1.1.1 to 1.1.3); active travel (1.2.1 to 1.2.4 and 1.2.6 to 1.2.9); public open spaces (1.3.1 to 1.3.3). NICE has deleted some recommendations from the 2008 guideline because the evidence has been reviewed and the recommendations have been updated.

This evidence review is relevant to the updated guideline.

See the guideline for more details.

NICE Public Health Collaborating Centre – Physical activity

5 Sep 2006

Executive Summary

This report examines the evidence for the effectiveness of transport interventions in increasing physical activity.

Studies were included in the review if they assessed the effect of an intervention related to modifying the transport environment (systems concerned with the movement of people from origin to destination). The outcome of the intervention had to include one measure of physical activity behaviour (including walking/cycling/modal shift).

All intervention study designs were included except studies that examined correlates of transport behaviour.

Twenty six studies were included, comprising 20 before and after measures studies (of which 3 used a comparison or control area) and 6 studies presenting only data from after the intervention.

The studies covered six main areas:

- Traffic calming
- Multi use trails
- Closing or restricting use of roads
- Road user charging
- Cycle infrastructure
- Safe routes to school

Traffic calming

The evidence from five studies (one (2++), two (2-) , one (3+) and one (3-) quality) tends to suggest that traffic calming can lead to small self-reported and observed increases in walking and cycling (including children's play) both in the short and in the long term. However, three studies (one 2+), two (2-) reported either no significant change in self reported and observed levels of walking or cycling, or slight declines in walking and cycling in the short and long term.

The evidence is applicable to the UK.

The evidence from one (2++), two (2-) and one (3+) quality studies suggests that traffic calming interventions may be useful in enabling children specifically to benefit from physical activity through play outdoors in the short and long term.

2. Multi-use trails

Evidence from three studies (one (2++) and two (2+) quality) suggests that introduction of multi-use trails can lead to increases in levels of walking and cycling in both the short and long term. However, one US (2++) quality study found decreases in walking and cycling following the introduction of a multi-use trail.

The evidence from the UK studies is applicable to the UK while the evidence from the US and Australian studies may not be directly applicable.

There is some evidence to suggest that the setting of the delivery of the intervention may influence its effectiveness in the short term and long term. Specifically, trails located closer to population centres may be better used.

3. Closing or restricting use of roads.

There is evidence from three (2-) quality studies to suggest that closing or reducing the capacity of roads can lead to long term increases in levels of walking within the area of the scheme. One (2-) quality study suggests that closing or reducing the capacity of roads can lead to increases in cycling.

Evidence from three (2-) quality studies would suggest that it is important that a wider range of measures is introduced to support road closures.

There is some evidence to suggest that the setting of the delivery of the intervention through location in city or town centres can lead to short term increases in cycling and long term increases in walking.

There is evidence from two (2-) quality studies that closing or restricting use of roads can result in a decrease in road traffic casualties.

There is some evidence to suggest that more intense interventions can lead to long term increases in walking and cycling.
This evidence is likely to be applicable in the UK, with appropriate adaptations.

4. Road user charging

There is evidence from one (2++) and one (2-) quality studies to suggest that introduction of road user charging schemes and changes to the road system can lead to short term increases in levels of walking and long term increases in cycling within the area of the scheme.

There was evidence of either no change or a decrease in road traffic casualties as a result of the road user charging interventions.

The evidence comes from UK studies and so is directly applicable.

5. Cycle infrastructure

Evidence from one (2+), three (2-), one (3++), and two (3-) quality studies suggests that the introduction of cycle infrastructure can lead to long term increases in levels of cycling within the area of the scheme.

Cycle infrastructure interventions may result in important positive public health outcomes alongside increasing cycling, notably a reduction in cycle casualties.

It appears that cycle infrastructure in both urban and rural areas can be effective in increasing cycling.

It is likely that this evidence is applicable to the UK, with appropriate modification for existing infrastructure and cultural issues.

6. Safe routes to school

There is evidence from one (2+) and one (3+) quality studies to suggest that introduction of safe routes to schools schemes can lead to short term increases in levels of walking and cycling within the area of the scheme.

This evidence may be applicable to the UK with some caution.

Included studies

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