Executive Summary

Evidence Collections for Climate and Health

This project developed two evidence collections on behaviour 'shifts' that sit at the intersection of population health and climate change: making diets healthier and more sustainable and promoting active travel.

Emerging insights

FEED-Food Environment Evidence Directory

The FEED was created through identifying and mapping 160 reviews looking at interventions and policies aiming to influence people's consumption patterns.

The evidence landscape showed:

- We identified few reviews that explicitly looked at both sustainability and consumption or health outcomes, perhaps reflecting that this is a more recent research field compared to broader questions about dietary shifts.
- Most literature we identified had a focus on interventions in specific settings (like education, or healthcare).
- 'Children' and 'Adolescents' appear to be the most studied subpopulations.
- Other vulnerable populations (e.g. low-income groups, ethnic minorities) seem to be the least studied subpopulation in the literature on interventions to shift diets.

The FEED underlays two interactive and open access tools, the Map (Figure 1 below) and the Visualizer, which enables users to explore the underlying directory in further detail. Users can begin their search for literature that may be relevant to shifting diets towards healthier and more sustainable options.

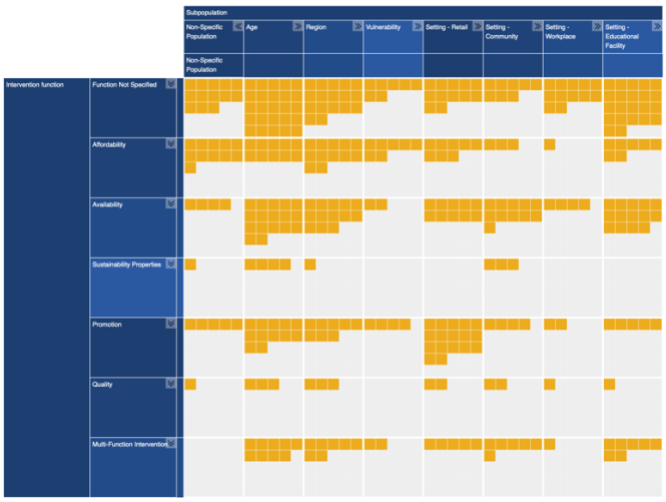

Figure 1: Screenshot of the FEED Map

Active Travel Evidence Collection

Increasing active travel offers the potential for large health and climate benefits. The three rapid reviews that form the Active Travel Evidence Collection provide, based on a participatory prioritisation exercise, evidence on ***effective policy framing, local economic impacts,*** and the effectiveness of changes to ***planning policy***, aiming to guide effective active travel policy at a local level. Notably, these reviews found:

- When local authorities are communicating about car demand management, if this is linked to changes in wider issues (like health or the economy) the connections to these need to be understood up front or to be made clear to people; they cannot be assumed. Communications should also address fairness, equity and effectiveness concerns openly and transparently.
- Concerns about impacts of active travel interventions on the local economy appear unfounded, with interventions most likely to produce positive change or none at all. Active travel investments generally offer a positive return, driven by public health gains which can offer significant savings for the local NHS.
- Planning policy can help increase active travel, but complementary challenges of translating policy to action, including provision of funding, must be addressed for benefits to be realised. Comprehensive, urban-wide planning approach may mitigate the risk of localised increases being offset by greater car use in other areas.

While important, policy alone will not be sufficient to achieve local action on active travel. Evidence-based active travel policy needs to be supported by appropriate funding, political willpower, and sufficient community engagement to achieve action at a local level.

Background

Climate change poses an increasing risk to human health globally, including within the United Kingdom. [1] Adverse health outcomes are associated with the risks of climate change and rising global temperature. [2-4] The 2022 Climate Risk Assessment and 2023 National Risk Register highlight the risks that severe weather events and harmful greenhouse gas emissions pose to the UK population. [5, 6] These risks are expected to intensify and disproportionately impact vulnerable populations such as the elderly, children and those living in deprived areas. [1, 4, 7]

The climate mitigation strategies necessary to address climate change and achieve the UK's goal to achieve net zero by 2050 also provide an opportunity to target rising health inequalities and public health challenges. These challenges include obesity, chronic diseases, and premature mortality for which unhealthy diets and physical inactivity are two key risk factors [8]. As detailed in the 2023 UKHSA *Heath Effects for Climate Change in the UK* report transport and food are two sectors that provide 'win-win' opportunities for health and the climate crisis. [1]

Individual-level behaviour change is needed to address these challenges, however existing health research suggests that upstream policy interventions provide the most effective and equitable way to achieve behaviour change.

Aim

This project aims to contribute to a shared evidence base for integrated and equity-focused policies and interventions to promote improved population health and climate mitigation, looking towards population level interventions. Within this scope the aim was to fill evidence gaps across two policy fields:

1. **Healthy and sustainable diets** (focusing on interventions or policies in the food environment).

2. **Active travel** (targeting sub-national level interventions and policies).

Methods

Two different methodological approaches were taken for the evidence collections.

For the first evidence collection, the Food Environment Evidence Directory (FEED), a top-down approach was used, starting with identification of relevant literature through comprehensive literature search methodology.

A total of 160 publications were identified for inclusion following the screening process. Extracted data from publications regarding interventions were coded into 'intervention function' and 'subpopulation' and used as a basis for the creation of two tools, the FEED MAP and FEED visualiser. These tools enable users to view the landscape of the literature and explore it in further detail, according to their own queries.

The Active Travel Evidence Collection was created using a bottom-up approach. The first step of this collection involved exploring the UK policy landscape and consultation with active travel stakeholders in the UK. These processes helped identify broad policy-relevant evidence gaps that were formulated into three focussed evidence questions.

- **Review 1:** What framing should Local Authorities use when discussing 'push' interventions to promote modal shift away from car use to active travel (such as road user charges, vehicle emission zones, re-prioritisation of parking spaces) to effectively communicate with the public?

- **Review 2**: What are the local economic impacts of active travel interventions or shifts to active travel? (including what is the local economic spend of car users versus active travel users in the UK?)

- **Review 3:** Does emphasising active travel in planning policy result in increased active travel?

Three rapid evidence reviews were completed to try answer these questions. The reviews were concise summaries, created using AI-supported methods and targeted at a policy audience.

Limitations

FEED

The evidence synthesis does not indicate effectiveness of different interventions in shifting diets to be healthier and sustainable nor does it highlight the sample size of primary evidence, number of studies and outcomes of each study included in the reviews.

The inclusion criteria for the FEED included only consolidated evidence from before January 2023. This means that the tools do not directly include primary evidence, although they allow access to primary evidence through the cited studies and policies included in publications. In addition, more recent primary studies may be missing from the evidence base.

Active Travel Evidence Collection

The rapid format and use of novel AI search tools within the evidence reviews means that some relevant papers may have been omitted, although they attempted to be as comprehensive as possible. Additionally, the algorithms used by the AI search tools are not publicly available, potentially limiting the replicability of the search strategy and introducing unknown bias.

Grey literature was included despite the potential increased risk of bias from these sources. The rapid reviews revealed a lack of directly relevant, high-quality evidence, although formal quality assessments were limited due to time constraints.

Links to the Evidence Collections

FEED

- FEED Map
- FEED Visualiser

Active Travel

- Rapid review 1: Framing modal shift 'push' interventions for effective communication
- Rapid review 2: Local economic impacts
- Rapid review 3: Active travel in planning policy

References

1. UK Health Security Agency. Health Effects of Climate Change in the UK. 2023. Report No.: GOV-14571. Available from: https://www.gov.uk/government/publications/climate-change-health-effects-in-the-uk.
2. Climate Change Committee. Independent Assessment of UK Climate Risk (CCRA3): Summary for England. Climate Change Committee; 2021b. Available from: https://www.ukclimaterisk.org/independent-assessment-ccra3/national-summaries/.
3. Manisalidis I, Stavropoulou E, Stavropoulos A, Bezirtzoglou E. Environmental and Health Impacts of Air Pollution: A Review. Frontiers in Public Health. 2020;8.
4. Romanello M, Napoli CD, Green C, Kennard H, Lampard P, Scamman D, et al. The 2023 report of the Lancet Countdown on health and climate change: the imperative for a health-centred response in a world facing irreversible harms. The Lancet. 2023;402(10419):2346-94.
5. UK Government. UK Climate Change Risk Assessment 2022. 2022. Available from: https://assets.publishing.service.gov.uk/media/61e54d8f8fa8f505985ef3c7/climate-change-risk-assessment-2022.pdf.
6. UK Government. National Risk Register. 2023. Available from: https://assets.publishing.service.gov.uk/media/64ca1dfe19f5622669f3c1b1/2023_NATIONAL_RISK_REGISTER_NRR.pdf.
7. Environment Agency. Living better with a changing climate. Report to Ministers under the Climate Change Act. Bristol 2021.
8. WHO. Guidelines on physical activity and sedentary behaviour. Geneva: World Health Organization; 2020 [cited 2022 Oct 13].

Authors

Rebecca Newbould, Rachel Juel, Aparna Dasaraju, Sarah Whitmee, Robert Hughes

For further information please email rebecca.newbould@lshtm.ac.uk

Funding

This project is funded by the NIHR Public Health Policy Research Unit (PH-PRU). This project is funded by the NIHR. The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.