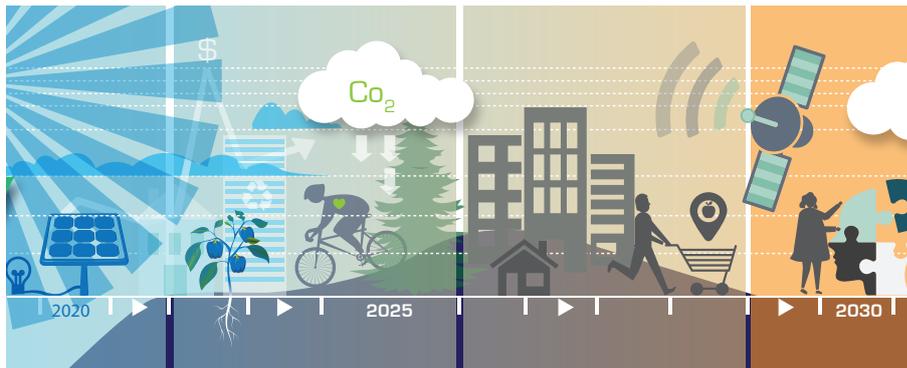




The Australian Prevention Partnership Centre
Systems and solutions for better health

The future of chronic disease prevention research

A thematic analysis of trends in the international grey and scientific literature



Purpose of the report

Prevention of chronic disease is a public health priority. It is important to ensure future prevention research is impactful and relevant to the needs of policymakers, practitioners and the community.

This Evidence Brief is based on a review that aims to inform the Australian research agenda and policy priorities through a summary of global trends in prevention research. Its recommendations seek to cement Australia's position as a world leader in prevention policy and research.

Review methods

We conducted a review of 102 peer-reviewed publications and 45 grey literature publications (policy and government documents and reports) published between 2014 and 2019. The literature reviewed was primarily from Australia, the United Kingdom, the European Union, the United States and Canada. An iterative process of thematic analysis was used to identify and map the main topics and themes in the literature.

Opportunities for future prevention research in Australia

- Expand the scope and scale of prevention
- Work with other sectors to find co-benefits
- Increase the use of systems thinking
- Embrace complexity to achieve multiple, mutually enforcing changes
- Move beyond the 'what' to the 'how'
- Provide prevention solutions for policy and practice in the real world
- Address inequities in health
- Fund sustained, meaningful investment in understanding the core drivers of disease
- Overcome the challenges of preventive action
- Support decision making informed by evidence.

Co-benefits of prevention

There is a clear opportunity to identify co-benefits of prevention research and policy across different sectors, for example:



Active travel

- ▲ Increased physical activity
- ▼ Lower carbon emissions
- ◀ Less traffic congestion



Sustainable, equitable food systems

- ♥ Healthier diets
- ▼ Lower carbon emissions
- Greater equity in access



Pollution reduction

- ▼ Fewer respiratory diseases
- ▼ Lower carbon emissions
- ♥ More active travel

Key findings

We identified 26 research topics across the grey and scientific literature, which we arranged into five major themes.

Theme 1: Food production and consumption

- **Diet and nutrition:** Unhealthy diets are a major preventable risk factor for chronic disease. Research is moving from a sole focus on nutrients to a more holistic approach looking at food and eating patterns. There is also a trend toward research into the economic, legal and commercial determinants of diet.
- **Malnutrition in all its forms:** Undernutrition and overnutrition are a significant topic in the prevention literature and are discussed as a top policy priority in international grey literature. This topic is linked with drivers of malnutrition such as food insecurity.
- **Food systems:** The nature of the current food system poses one of the greatest risks to both human and planetary health. The food system is a significant contributor to greenhouse gas emissions. A systems approach is needed to align agriculture, food production and retail, trade, economics, public health and environment to improve diets.
- **Agriculture:** Bringing together the nutrition and agriculture sectors could achieve significant gains for chronic disease prevention by addressing both undernutrition and overnutrition as well as more sustainable food and agricultural practices.



Theme 2: Place and spaces

- **Built environment:** Research into the built environment reflects a shift towards population-level strategies and approaches for physical activity and chronic disease prevention. There is a need to better quantify the impact of the built environment on physical activity levels.
- **Urban health and cities:** Research in this area ranges from the impact of cities on physical activity levels to heat islands and noise stress. More research is needed into how the physical design of cities can help reduce physical inactivity and mitigate climate change, and to measure the benefit and impact of healthy urban planning policies.
- **Transport:** Transport interventions involve multisectoral and cross-sectoral engagement and collaborations. More research is needed into incentives and policy levers to encourage active transport infrastructure; and the different mixes of transport investment that “could increase physical activity and reduce air pollution.
- **Physical activity:** Population-based strategies for supporting physical activity that address the built environment, urban planning and active transport could reap co-benefits such as carbon emission reduction. However, there is a gap between the research and policy literature, with few grey literature publications including physical activity as a specific risk factor for chronic disease.

Background

- Chronic diseases including heart disease, stroke, cancer, diabetes and chronic respiratory conditions, are responsible for 73.4% of deaths globally, and reduce quality of life for millions of Australians.
- A third of Australia’s chronic disease burden could be prevented by addressing risk factors such as poor nutrition, physical inactivity, smoking and harmful alcohol use.
- The Australian Government has committed to long-term thinking about prevention via a National Preventive Health Strategy and by investing in prevention research.

Theme 3: Environment and health

- **Air pollution:** The grey literature identifies air pollution as a priority area for prevention but this is not being translated into policy, with respiratory diseases largely absent from major policy documents and frameworks. Research highlights that air pollution is both a cause of climate change and is exacerbated by climate change. There is significant need for high quality epidemiological evidence to better demonstrate the longer term impact of air pollution on human health.
- **Planetary health:** Inter- and multi-disciplinary research into planetary health offers opportunities to highlight the co-benefits of addressing both climate change and health.
- **Climate change:** Climate change is regarded as a defining health issue for the 21st century in much of the grey literature, and a growing body of international evidence points to the link between climate change and chronic disease. The climate change and prevention research agendas can align around renewable energy, improved urban planning, and healthier, more sustainable diets.

Theme 4: Expanded determinants of health

- **Social determinants:** Both the grey and the scientific literature focus on identifying and addressing the 'causes of the causes' of chronic disease, including persistent health inequities. There is a need for collaborative, co-designed research to investigate how 'ecological' determinants such as climate change exacerbate existing or new patterns of social inequality and health inequities.
- **Commercial and corporate determinants:** There is a growing area of prevention research focusing on commercial drivers of ill health, such as the manufacturing, sale and promotion of unhealthy products. This aligns with an emerging body of research into the corporate determinants of health.
- **Economic determinants:** There is a significant and expanding evidence base around fiscal interventions such as taxes on tobacco or high sugar products, and subsidies for production of healthier food. There is an evidence gap around behavioural economics approaches to different chronic disease risk factors.
- **Legal determinants:** There is growing interest from researchers in the use of law and regulation to address preventive health priorities.

Theme 5: Personalised prevention

- **Digital health:** There has been a strong research focus on eHealth, apps and wearable technologies to support health. However, some literature argues that there is too great a focus on innovative technologies, with insufficient evidence of the benefits, harms or effectiveness of digital health interventions.
- **Precision medicine:** There is much interest in using new diagnostic technology, AI and multiple data sources to target personalised preventive interventions. More research is needed into whether this will improve prevention, or whether precision medicine could result in unintended consequences and exacerbate existing health inequities.
- **Big data:** Using big data is seen as a major priority for chronic disease prevention in the 21st century. However, research to-date also raises questions about issues such as privacy, security and confidentiality to privacy, security and confidentiality.

Other topics to consider for future prevention research

The review identified eight other topics that are the focus of prevention research internationally:

Tobacco and alcohol

Multisectoral approach

Life-course approach

Mental health

Systems thinking

Implementation
and/or evaluation
challenges

Low and
middle-income
countries

Evidence gaps

Recommendations for prevention research investment in Australia

Expand the scope and scale of prevention



Many of the greatest gains for prevention are to be found outside the health sector. Prevention research must work more closely with urban planning, food systems and public health regulation and law. We must broaden our scope to incorporate the health of the planet – an approach that reflects the global policy shift to the Sustainable Development Goals. There is a clear opportunity to identify co-benefits of interventions across different sectors, including those of addressing air pollution and reducing greenhouse gas emissions for climate change mitigation.

Increase the use of systems thinking



Systems thinking is being used locally, nationally and globally, with a quarter of all scientific prevention literature referring to systems and complexity. Systems thinking presents the opportunity to strategically align and integrate goals with other disciplines and sectors for mutual benefit. There is need for increased capacity in Australia to use tools such as systems dynamic modelling to support and inform policy making.

Move beyond the 'what' to the 'how'



Prevention research to date has comprehensively highlighted what to do – but not necessarily how to do it. Over the next decade, we must focus more on implementation and evaluation in the real world. When combined with an expanded scope and systems approaches, this will require prevention research to move beyond traditional domains and sectors. We will need to expand the borders of inter-disciplinary and cross-disciplinary research, and adjust research funding mechanisms and priorities.

Address inequities in health



To fully understand and address the core drivers of chronic disease prevention, research must continue and enhance the focus on health and social inequities. Health and social equity should span all research themes. A systems approach is needed to understand how inequities intersect to fully grasp the complexity of chronic disease prevention.

Overcome the challenges of preventive action



Effective preventive action can be challenging for society and governments. There are complex political and economic drivers of chronic disease. Addressing these requires effective action informed by the best available evidence and prevention research.



Current and future trends in chronic disease prevention research is a literature review undertaken to support prevention policy and research in Australia. For more detailed findings and evidence, you can access the full report at: preventioncentre.org.au

A complete list of references supporting this document can be found in the report 'Current and future trends in prevention research' at preventioncentre.org.au



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