



LEEDS BECKETT UNIVERSITY
OBESITY INSTITUTE

What does the evidence say? A scoping review of obesity prevention and treatment in children

March 2024

Introduction

- **Aim:** To search the academic literature to retrieve relevant studies that provide evidence on effective modifiable treatments and prevention efforts towards obesity in childhood, aged 0 - 18 years old
- **Rationale:** While many reviews exist, they ubiquitously fail to address the complexity of obesity. They are undertaken in discipline silos, focusing on a single exposure or on a “sub system” of the Foresight map (e.g., built environment) and its relationship with obesity or solo research designs (e.g., randomised control trials) . This review provides an overview of the evidence, from multiple research designs, on modifiable prevention and treatment efforts in children (0-18 years).
- **Design:** The scoping review was informed by the Preferred Reporting Items for Systematic Reviews and Meta-analysis Protocols
- **Main outcome:** The main outcomes assessed was weight status reported as a measure of BMI, BMIsds or BMI percentile

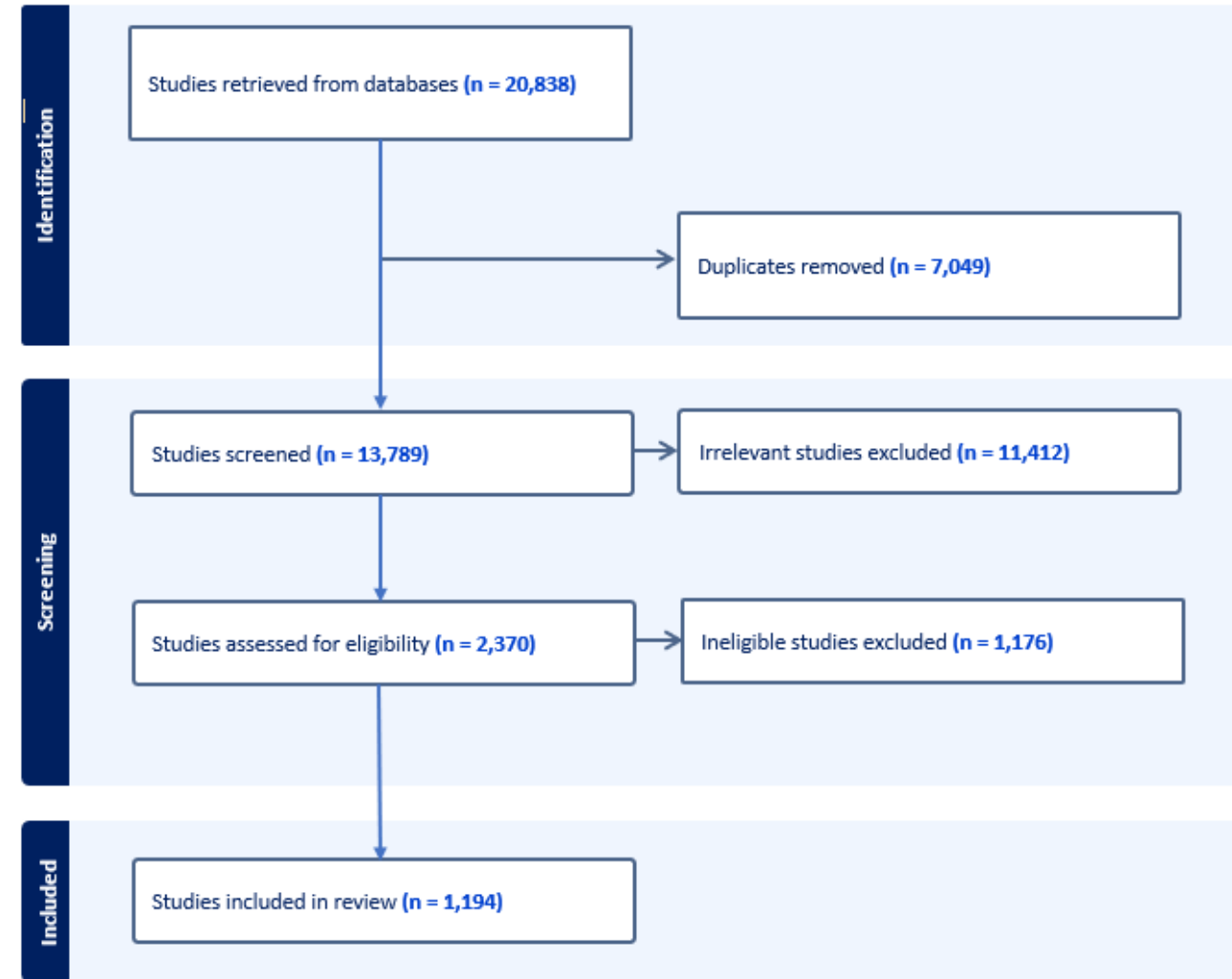
Methods

A search was conducted using **six scientific databases**: PubMed, Psych Info, Cochrane, ERIC, CINAHL and Medline between 2013 and 2023.

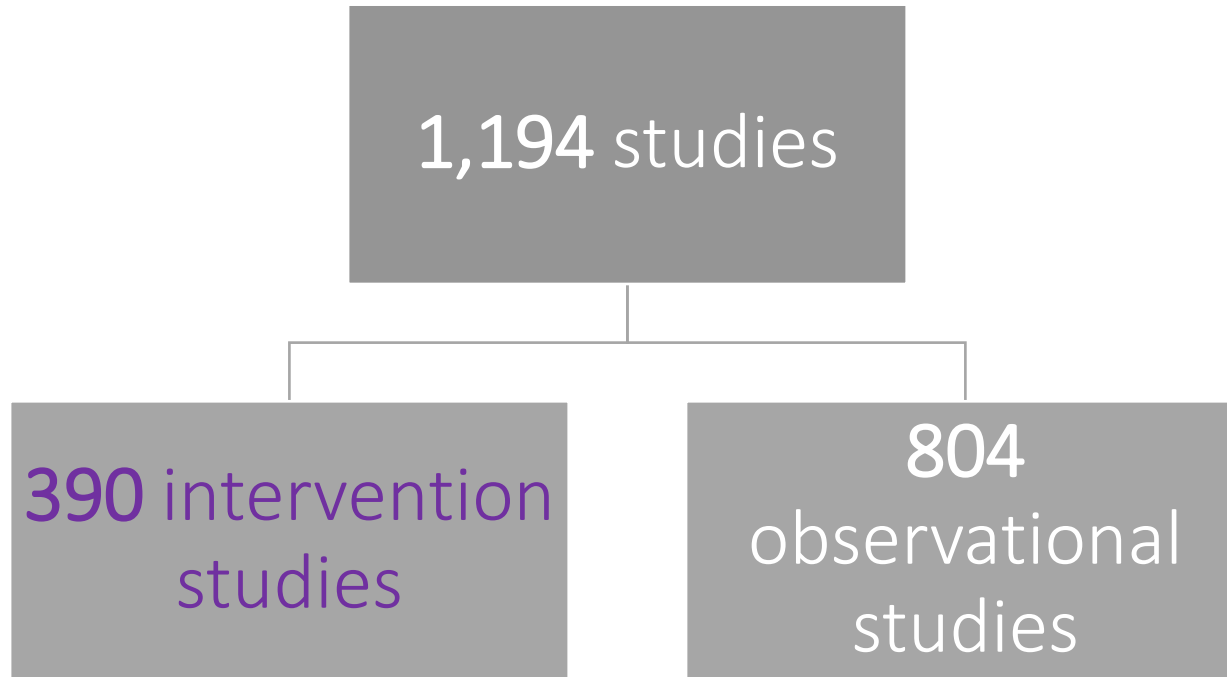
Keywords were drawn from previous relevant literature, including the **Foresight (2007) domains**.

Articles involving **modifiable** associations reported against the **outcome measures of BMI** in any primary, peer-reviewed study using human participants within non-institutionalised living conditions for **children** (aged 0-18 years).

Studies needed to include participants from **UN developed western countries** (Europe, North America, Australia / New Zealand) and be published in the English language.



Findings – included studies



1,994 studies were identified as having an outcome of childhood BMI, BMIsds or BMI percentile.

390 studies had findings from intervention studies.

804 studies reported data from observational studies for example, cross-sectional analysis or longitudinal cohort studies.

Findings will be presented from the intervention studies.

Results Summary for intervention design studies

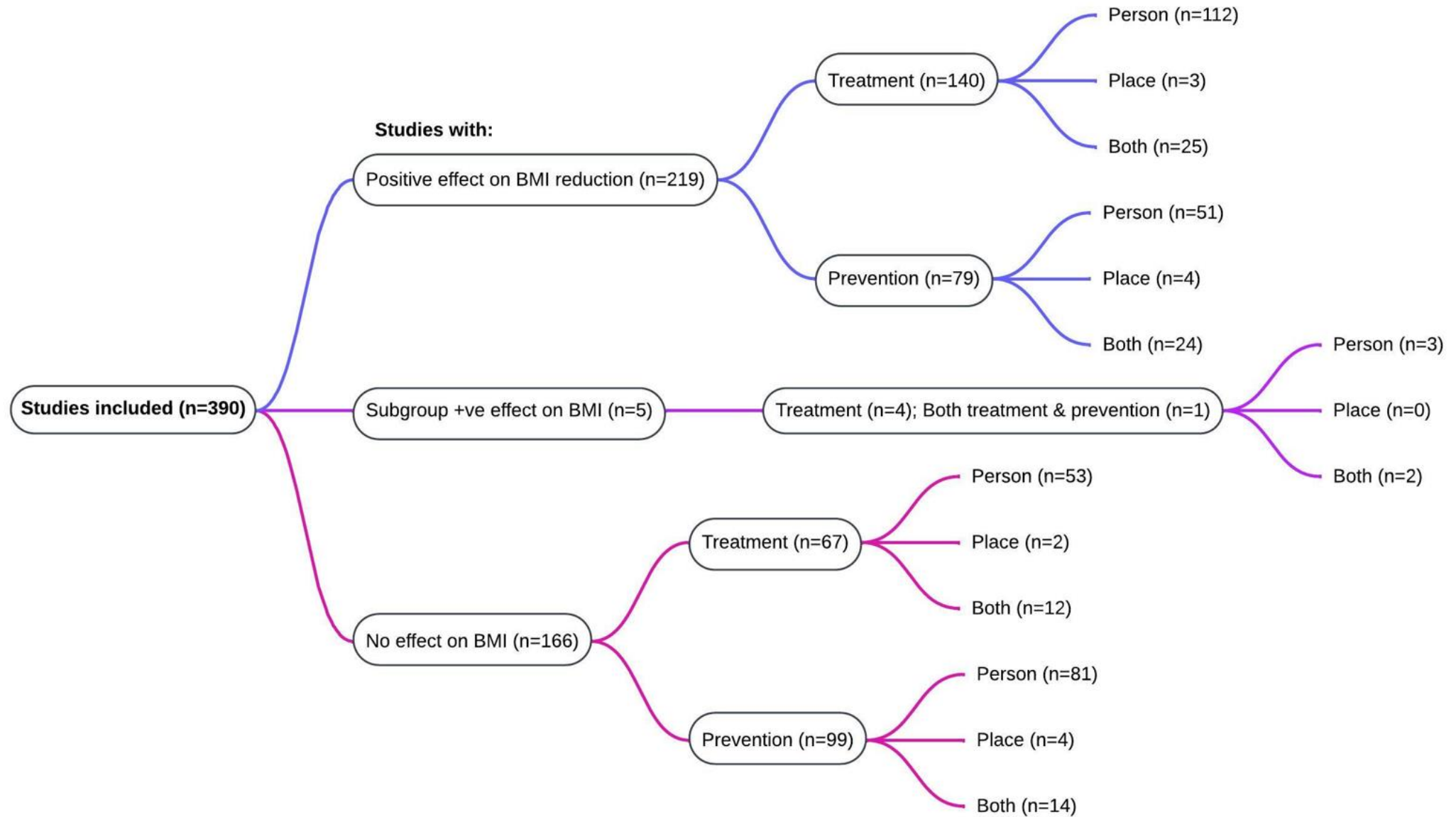
- It is complex!
- There are no clear prevention or treatment strategies for childhood obesity at a person or place level.
- Currently the majority of published studies have considered interventions at a person rather than place level.
- Only 4 out of 390 studies referred to a “whole system” approach to childhood obesity

Practice recommendations and conclusions

- Due to a lack of clear findings within the literature there are no clear recommendations for practice.
- A practice-based approach to prevention and treatment of childhood obesity is recommended

Summary of intervention studies (n=390)

Studies had a positive effect on BMI reduction (n=219)	Treatment (n=140)	Person (n=112)
		Place (n=3)
		Both (n=25)
	Prevention (n=79)	Person (n=51)
		Place (n=4)
		Both (n=24)
Studies with subgroup positive effect on BMI (n=5)	Treatment (n=4)	Person (n=3)
	Both treatment and prevention (n=1)	Place (n=0)
		Both (n=2)
Studies with no effect on BMI (n=166)	Treatment (n=67)	Person (n=53)
		Place (n=2)
		Both (n=12)
	Prevention (n=99)	Person (n=81)
		Place (n=4)
		Both (n=14)



Summary

- Despite a widespread understating that obesity results from many interconnected policy, environmental, social, economic, cultural, behavioural, and biological causes, and requires action from individuals and society across multiple sectors, the research remains, silo driven and does not reflect the complexity of obesity
 - Focuses on a single exposure (e.g., fast food outlets) or a sub-system (e.g., food environment) and its relationship with obesity
- The evidence remains largely generated by tools and methods developed to answer questions about the effectiveness of isolated interventions, commonly grounded in linear models of cause and effect
 - The pathway between a cause (exposure to fast food restaurants) and the outcome (obesity) is assumed to be linear, when it is much more complex than this.
- Heterogeneity between methods should not be overlooked
 - E.g., how the “*food Environment*” is defined and measured differs considerably between studies yet results are compared directly

Summary

- There remains much we do not know about the increasingly diverse and complex issues that transcend disciplinary, sectoral, and geographical boundaries on obesity.
- The complexity of obesity makes research, including evaluation, multifaceted and unstable. Despite the step change in our understanding of the complex aetiology of obesity researchers, policy makers, practitioners, and funders continue to operate in an '*evidence-based*' paradigm which does not recognise the complexity.

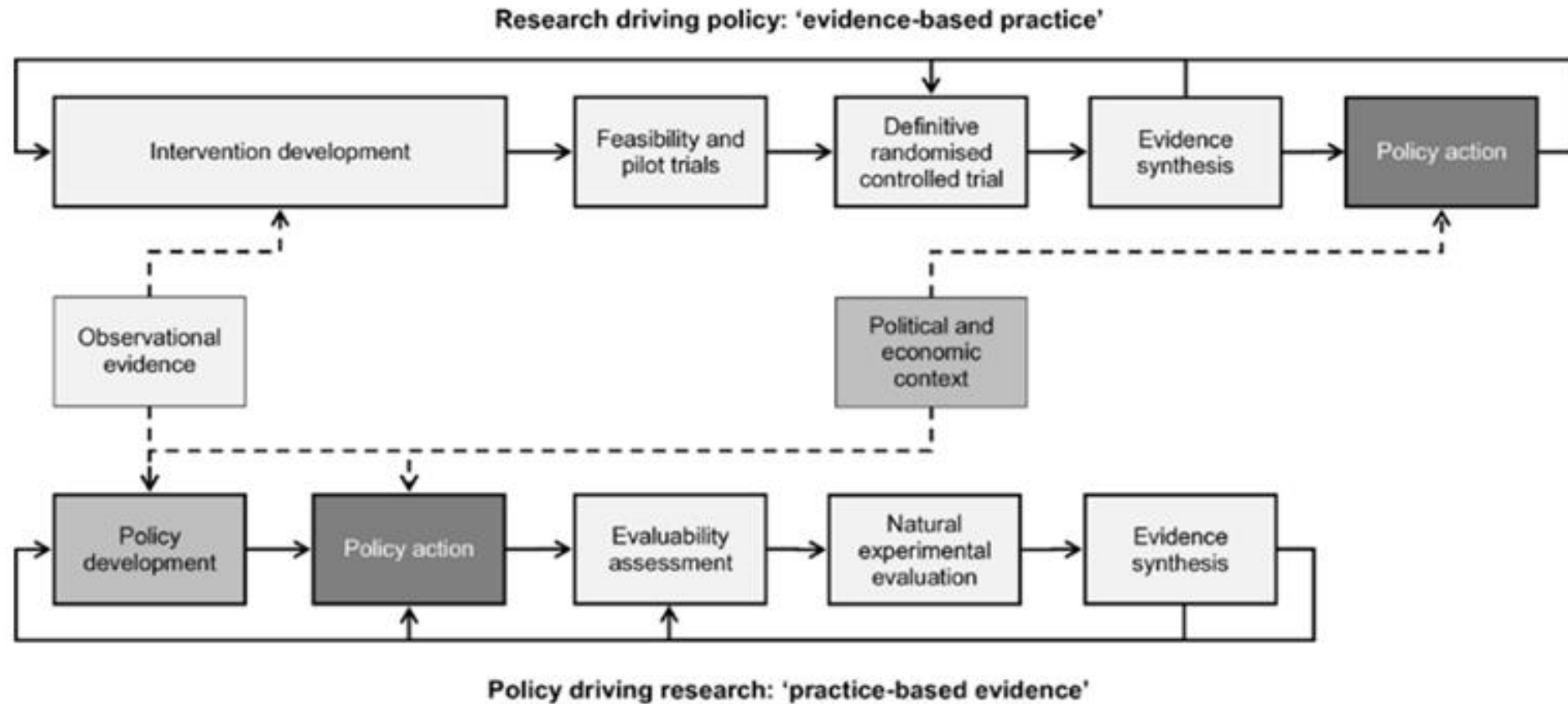


Figure 1 Two complementary modes of evidence generation.

Ogilvie D, Adams J, Bauman A, *et al*

Using natural experimental studies to guide public health action: turning the evidence-based medicine paradigm on its head
J Epidemiol Community Health 2020;**74**:203-208. <https://doi.org/10.1136/jech-2019-213085>

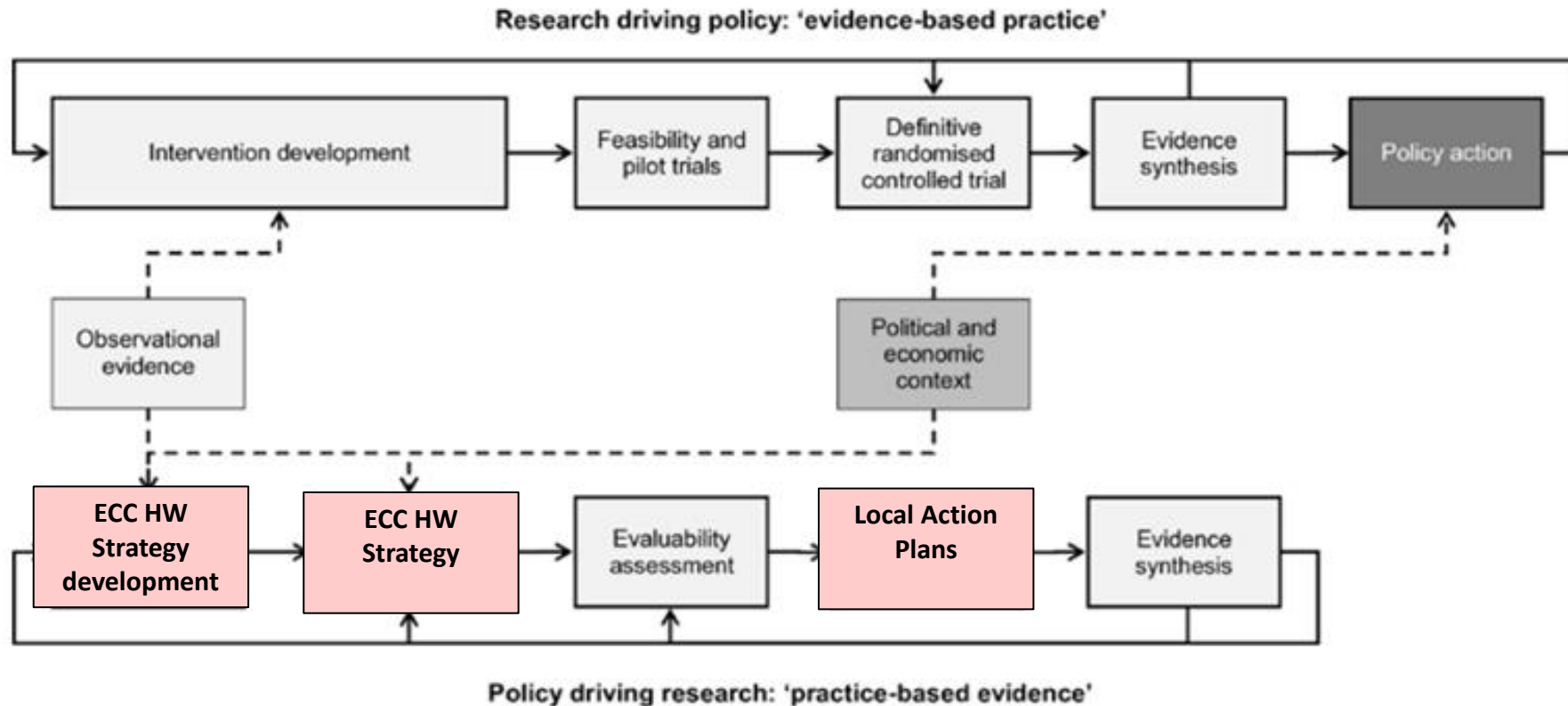


Figure 1 Two complementary modes of evidence generation.

Emphasis shifts to evaluation

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