

Physical activity and dietary interventions to prevent Type 2 Diabetes: An evidence gap map



VIII CONGRESSO BRASILEIRO DE MEDICINA DO ESTILO DE VIDA

I CONGRESSO LUSO-BRASILEIRO DE MEDICINA DO ESTILO DE VIDA

Ostolin¹, T.L.V.D.P.; Pagano¹, R.; Fonseca¹, D.C.; Martins¹, A.L.F.; Alves¹, B.S.; Santana¹, A.B.N.; De Oliveira¹, L.T.; Menezes², V.M.; De Almeida², J.C.; Pinheiro³, M.C.D.A.; Rogero³, M.M.; Sanchez¹, J.G.; Figueiró¹, M.F.; Bersch-Ferreira¹, A.C.

¹BP – A Beneficência Portuguesa de São Paulo, São Paulo, Brasil; ²Universidade Federal do Rio Grande do Sul, Rio Grande do Sul, Brasil; ³Universidade de São Paulo, São Paulo, Brasil.

Introduction



Type 2 diabetes mellitus (T2DM), one of the most prevalent chronic non-communicable diseases, remains a major global health concern. Lifestyle interventions, particularly healthy dietary patterns and regular physical activity, play a pivotal role in T2DM prevention.

Objective

To develop an evidence gap map of the effectiveness of Physical Activity and Dietary Interventions for T2DM Prevention based on the high-quality systematic reviews.

Methods

[PROSPERO CRD42023422444]

Databases

Epistemonikos, PubMed, Cochrane Library, Embase, BVS, Portal de teses e dissertações da Capes, Google Scholar

Eligibility Criteria

High-quality systematic reviews with meta-analyses of randomized controlled trials

Screening

Independent reviewers

Data collection

REDCap®

Confidence Level

AMSTAR 2



Results

Across the evidence matrix, 48 findings were identified: **13 inconclusive, 13 positive, 12 null, 8 not reported, and 3 potentially positive.** Combined dietary and physical activity interventions yielded 10 positive or potentially positive effects, particularly for clinical, anthropometric, and epidemiological outcomes.

Table 2. Main associations between interventions and outcomes based on the evidence map analysis.

Interventions categories	High quality systematic reviews	Outcomes categories				
		Anthropometric outcomes	Epidemiological outcomes	Clinical outcomes	Economic outcomes	Well-being and quality of life
Dietary interventions	Dietary interventions	3	6	4	1	1
	Physical activity interventions	3	5	4	1	1
Diet + Physical Activity	Diet + Physical Activity	5	8	4	1	1
	Physical activity interventions	Not informed, 4	Well-being and quality of life, economic and epidemiological			
Physical activity interventions	Physical activity interventions	No effect, 4	Anthropometric and clinical			
	Physical activity interventions	Inconclusive, 3	Epidemiological			
	Physical activity interventions	Positive, 4	Anthropometric and clinical			
	Physical activity interventions	Not informed, 3	Epidemiological, economic and clinical			
Diet + Physical Activity	Diet + Physical Activity	No effect, 4	Anthropometric and clinical			
	Diet + Physical Activity	Inconclusive, 6	Well-being and quality of life, epidemiological and clinical			
	Diet + Physical Activity	Positive, 1	Clinical			
	Diet + Physical Activity	Not informed, 1	Epidemiological			
Dietary interventions	Dietary interventions	No effect, 4	Epidemiological and clinical			
	Dietary interventions	Inconclusive, 4	Well-being and quality of life, epidemiological and economic			
	Dietary interventions	Potentially Positive, 3	Anthropometric and clinical			
	Dietary interventions	Positive, 7	Epidemiological, anthropometric and clinical			

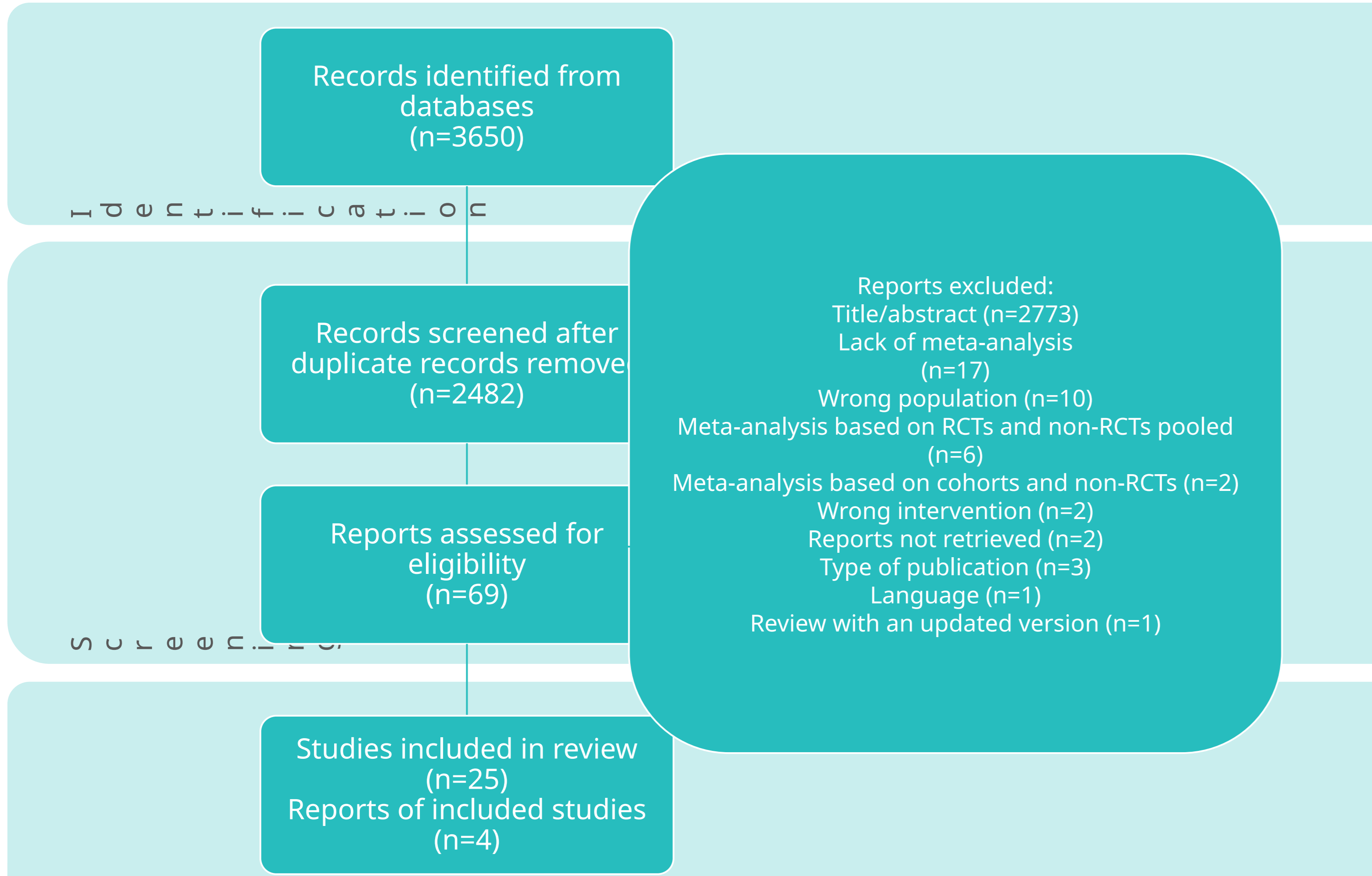


Figure 1. Flowchart of the evidence gap map.

Over 3,500 citations were identified, but only four systematic reviews (published between 2007 and 2020) met the inclusion criteria (1-4). On average, each review analyzed eight studies (range: 3-12). The most often assessed outcomes were **glycemic profile, body weight, and T2DM incidence**, corresponding to the clinical, anthropometric, and epidemiological categories, respectively.

Combined dietary and physical activity interventions demonstrate beneficial effects, most notably on anthropometric indicators, biomarker profiles, and T2DM incidence. These findings reinforce the importance of combined lifestyle interventions for individuals at elevated risk of T2DM.

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