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Whole-grain intake and risk of disease, mortality and overweight

An umbrella review of recent evidence

Danish Cancer Society





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WhoEUGrain project

A European Action on Whole Grain Partnerships

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Deliverable number 4.1

Evidence base for the health benefits of whole grains including sustainability aspects

**Whole grain:
definition, evidence base review,
sustainability aspects and
considerations for a dietary guideline.**

Description: Report on the updated evidence base for health effect and sustainability aspects of whole grains

User Guide: The purpose of this deliverable is to ensure the knowledge base as one of the prerequisites for establishing a national whole grain partnership

WP 4: Implementation tools for whole grain Partnerships

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Context for the review

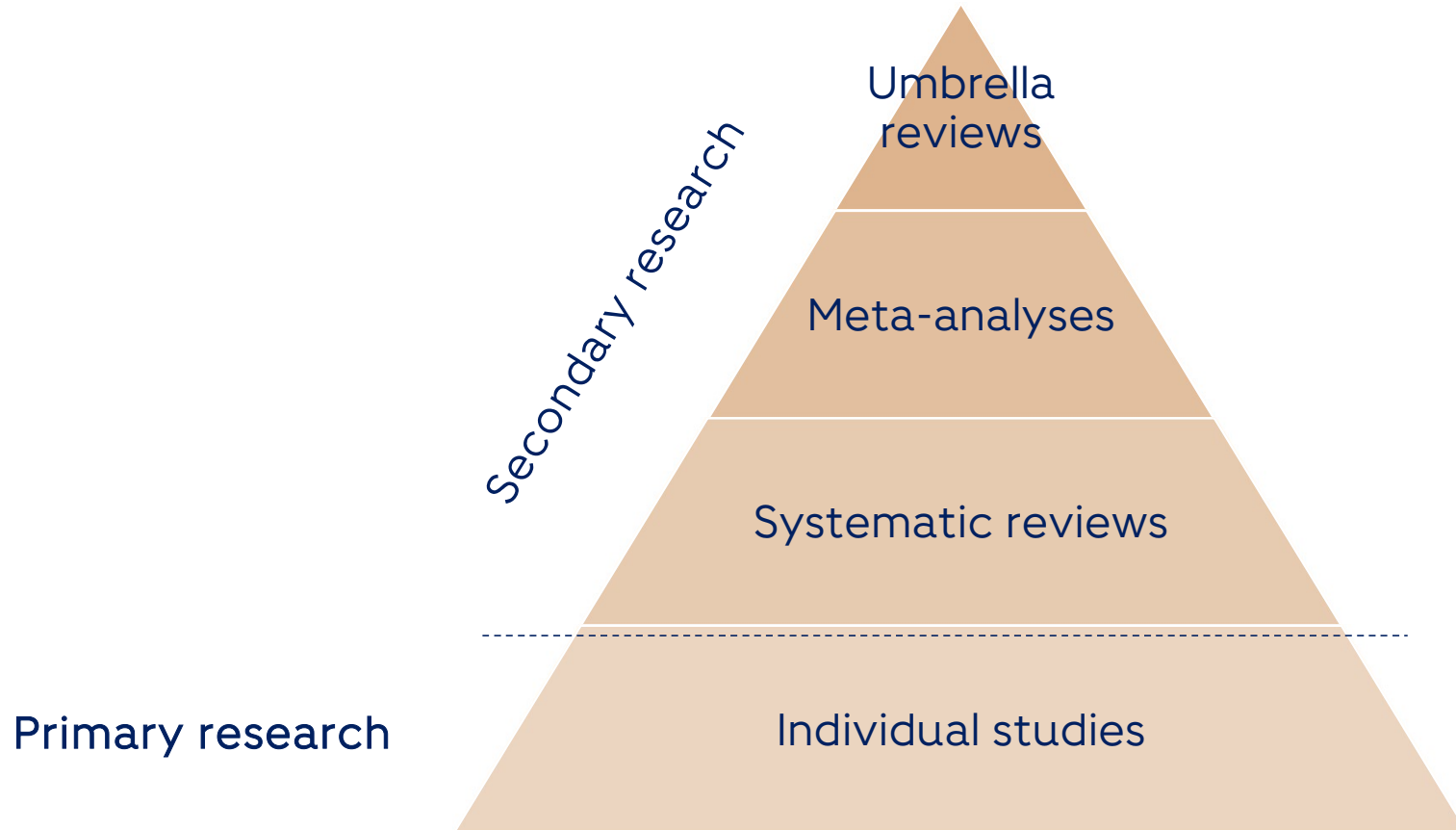
CHAPTER 3

Whole-grain intake and risk of disease, mortality and overweight

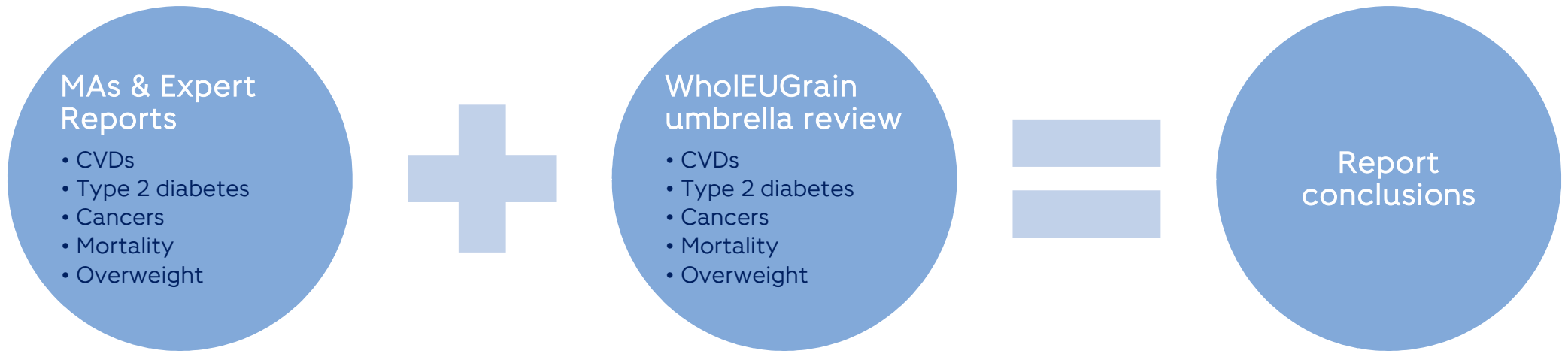
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What is an umbrella review?



What did we do?



How we reviewed other reviews and meta-analyses

Systematic search

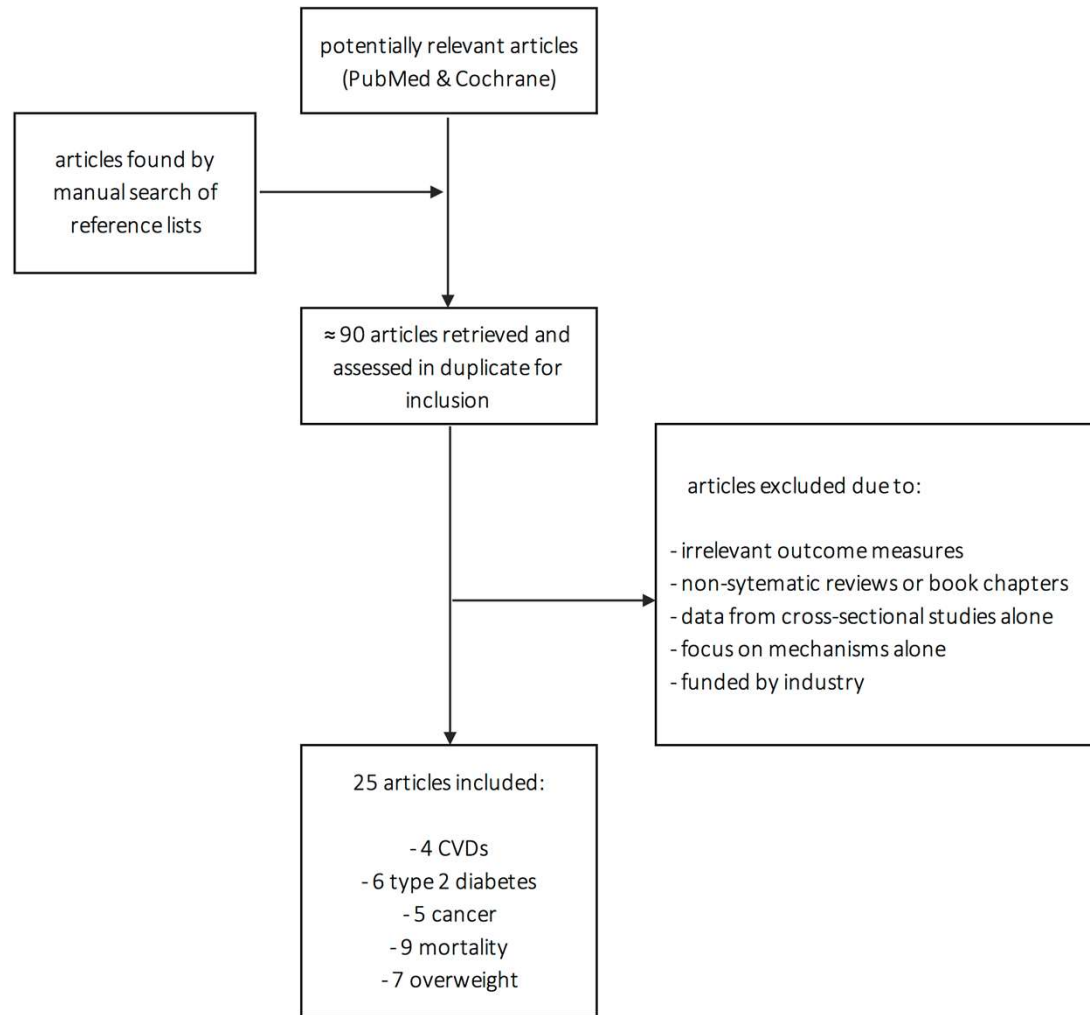
- PubMed & Cochrane database + manual searches of literature lists
- Screening of results
- Final list of studies for inclusion

Systematic analysis

- Quality and risk of bias
- Extraction of pre-defined data/information from studies

Evidence judgement

Results – literature search



Results

	High vs. low analysis					Dose-response analysis					
	No. of cohorts	No. of cases	RR (95% CI)	I ²	P _{het} value	Dose WG-products (g/day)	No. of cohorts	No. of cases	RR (95% CI)	I ²	P _{het} value
de Munter 2007 ^[33]	--	--	--	--	--	40	6	10,944	0.79 (0.72–0.87)	68%	0.009
Ye 2012 ^[34]	6	NR	0.74 (0.69–0.80)	0%	0.44	--	--	--	--	--	--
Aune 2013 ^[8]	9	19,105	0.74 (0.71–0.78)	0%	0.43	90	10	19,829	0.68 (0.58–0.81)	82%	< 0.0001
							5	13,857	0.69 (0.60–0.80) Adjusted for BMI	58%	0.05
									0.53 (0.41–0.69) No BMI adjustment	88%	< 0.001
Schwingshackl 2017 ^[36]	13	29,633	0.77 (0.71–0.84)	86%	<0.00001	30	12	22,267	0.87 (0.82–0.93)	91%	<0.00001
Reynolds 2019 ^[18]	8	14,686	0.67 (0.58–0.78)	82%	<0.001	15	7	13,147	0.88 (0.81–0.95)	89%	< 0.001



Results

Whole-grain intake and CVD, type 2 diabetes, cancer, mortality, and overweight		
2021		DECREASES RISK
STRONG EVIDENCE	Convincing	CVD, CHD Type 2 diabetes Mortality
	Probable	Colorectal cancer
LIMITED EVIDENCE	Limited - suggestive	Weight gain, overweight, and obesity
	Limited – no conclusion	Other types of cancer Stroke & Heart failure Adiposity parameters





Take-away messages

- Strong evidence for CVDs, type 2 diabetes, colorectal cancer and mortality
- Limited evidence for overweight
- 1-2 portions a day is better than none
- But the more the better, it appears



Thank you for your
attention

