

## WHAT ARE THE BARRIERS AND FACILITATORS TO WHOLE GRAIN CONSUMPTION IN CHILDREN AND ADULTS?

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### BACKGROUND

- Whole grain (WG) intakes are associated with reduced relative risk of several pathologies (e.g. cardiovascular diseases, type 2 diabetes, colon cancer).
- Daily intake around 50 g of WG would be effective to reach benefits for health according to recent meta-analyses.
- Daily intake recommendations for WG do not exist in all countries. When existing, they range between 48 g/day (e.g. USA) and 75 g/ 2400 kcal (Denmark)
- However, actual intakes are below current recommendations.

**Aims:** Identify the barriers (👎) and the facilitators (👍) to WG products (WGP) consumption.

### METHODS

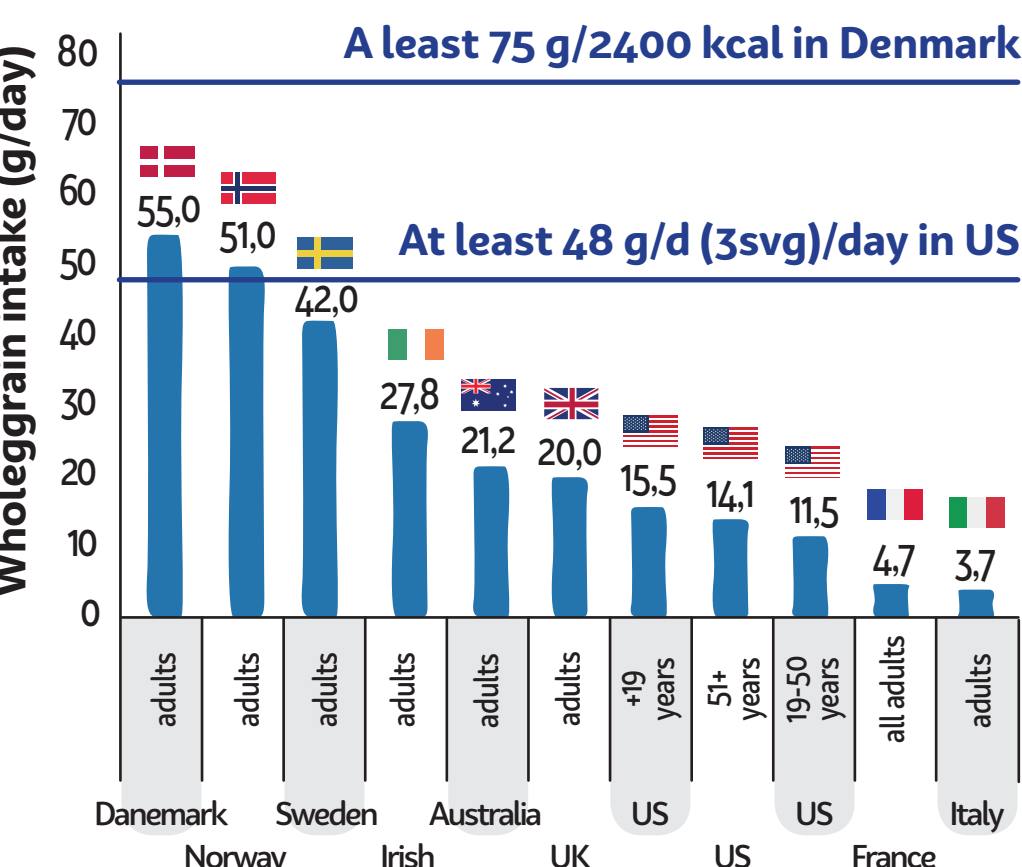
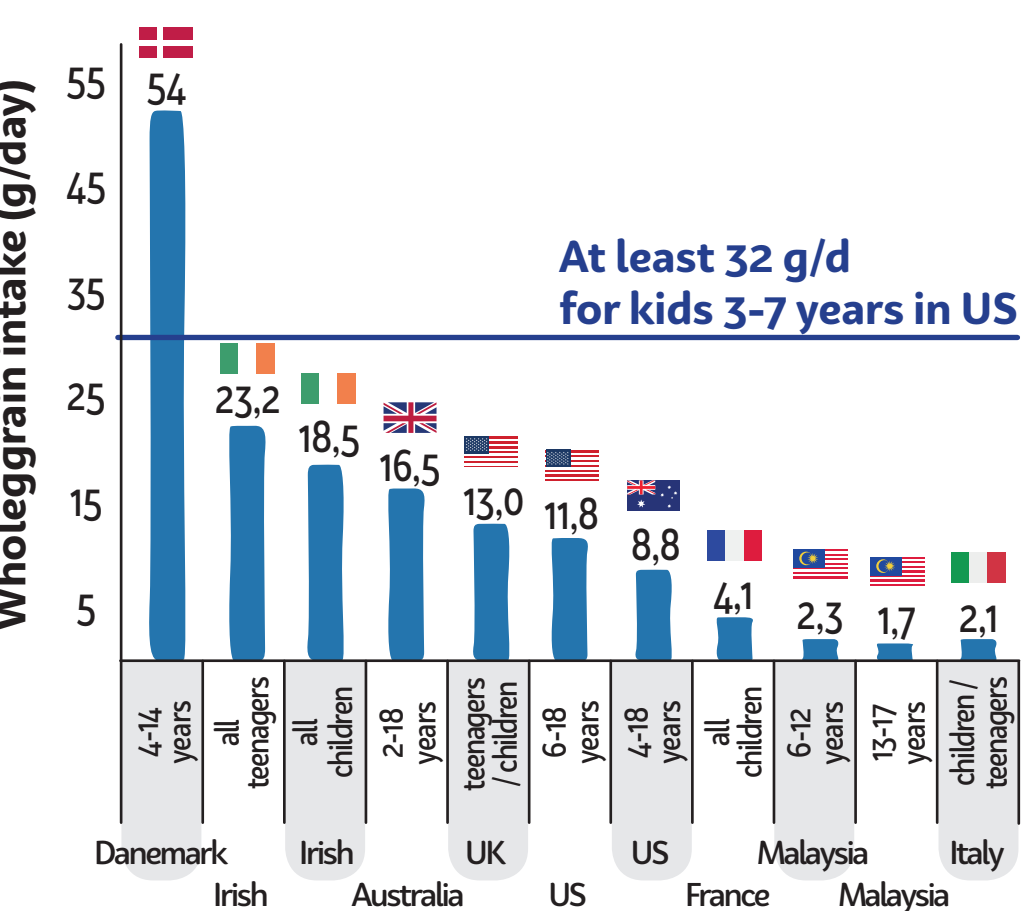
- Literature search performed on Pubmed integrating keywords related to:
  - Whole grains and specific grains
  - Consumer perception and behaviors
  - Populations (healthy children and adults)
- + Snowball search (relevant papers from reference lists of analysed articles)

Limit to past 15 years →

**Kids:** Children: 3 to 12 years / Adolescents: 12 to 18 years  
• 19 articles on consumer perception (14 in children and 6 in adolescents)

**Adults:** > 18 years  
• 31 articles on consumer perception (11 in young (18-30/40y), 10 in middle-aged (30/40-65y) and 4 in older adults >60y)

### RESULTS



	KIDS		ADULTS		
	CHILDREN 3-12Y	ADOLESCENTS 12-18Y	YOUNG 18-30/40Y	MIDDLE-AGED 30/40-65Y	OLDER >60Y
Dislike taste / texture	Dislike taste / texture	Poor availability of WGP	Dislike taste / texture	Cost of WGP	Cost of WGP
Poor availability of WGP	Poor availability of WGP	Dislike taste / texture	Cost of WGP	Dislike taste / texture	Difficulty to identify WGP
Lack of appeal (appearance / pack / marketing)	Lack of appeal (appearance / pack / marketing)	Time-consuming to prepare/eat	Difficulty to identify WGP	Difficulty to identify WGP	Dislike taste / texture
Difficulty to identify WGP	Difficulty to identify WGP	Lack of appeal (appearance / pack / marketing)	Poor availability of WGP	Bad knowledge on nutrition & health benefits	Poor availability of WGP
Bad knowledge on nutrition & health benefits	Bad knowledge on nutrition & health benefits	Cost of WGP	Bad knowledge on nutrition & health benefits	Dietary habits	Chewing difficulties (institutions)
↑ sensory appeal	↑ sensory appeal	↑ availability of WGP	↑ sensory appeal	↑ sensory appeal	↑ ability to identify WGP
Incorporate WG in usual and well-liked products	Incorporate WG in usual and well-liked products	Preference / liking of taste / texture	↑ availability of WGP	↑ availability of WGP	↑ sensory appeal
↑ gradually WG in products	↑ gradually WG in products	↑ sensory appeal	Familiarize with WGP	Familiarize with WGP	↑ availability of WGP
Repeated exposure to WGP	Repeated exposure to WGP	Incorporate WG in usual and well-liked products	Preference / liking of taste / texture	56 Clear labeling of WG on packs	Preference / liking of taste / texture
Preference / liking of taste / texture	Preference / liking of taste / texture	↑ choice / variety of products	↑ ability to identify WGP	Education on how to prepare / cook WGP	Education on how to prepare / cook WGP

svg: serving - WG: whole grain; WGP: whole grain products

### CONCLUSIONS

- WG intakes range between 2.1-54 g/day in children and between 3.7-55.0 g/day in adults and are below the recommendations in almost all countries.
- Main levers to facilitate WG intake are to increase **availability and variety of WGP**, increase their **appeal and organoleptic**, reduce their purchase cost and **improve labeling / communication and knowledge** to impact on consumers ability to identify WG.