Humble wholegrains: Gut Health Heroes

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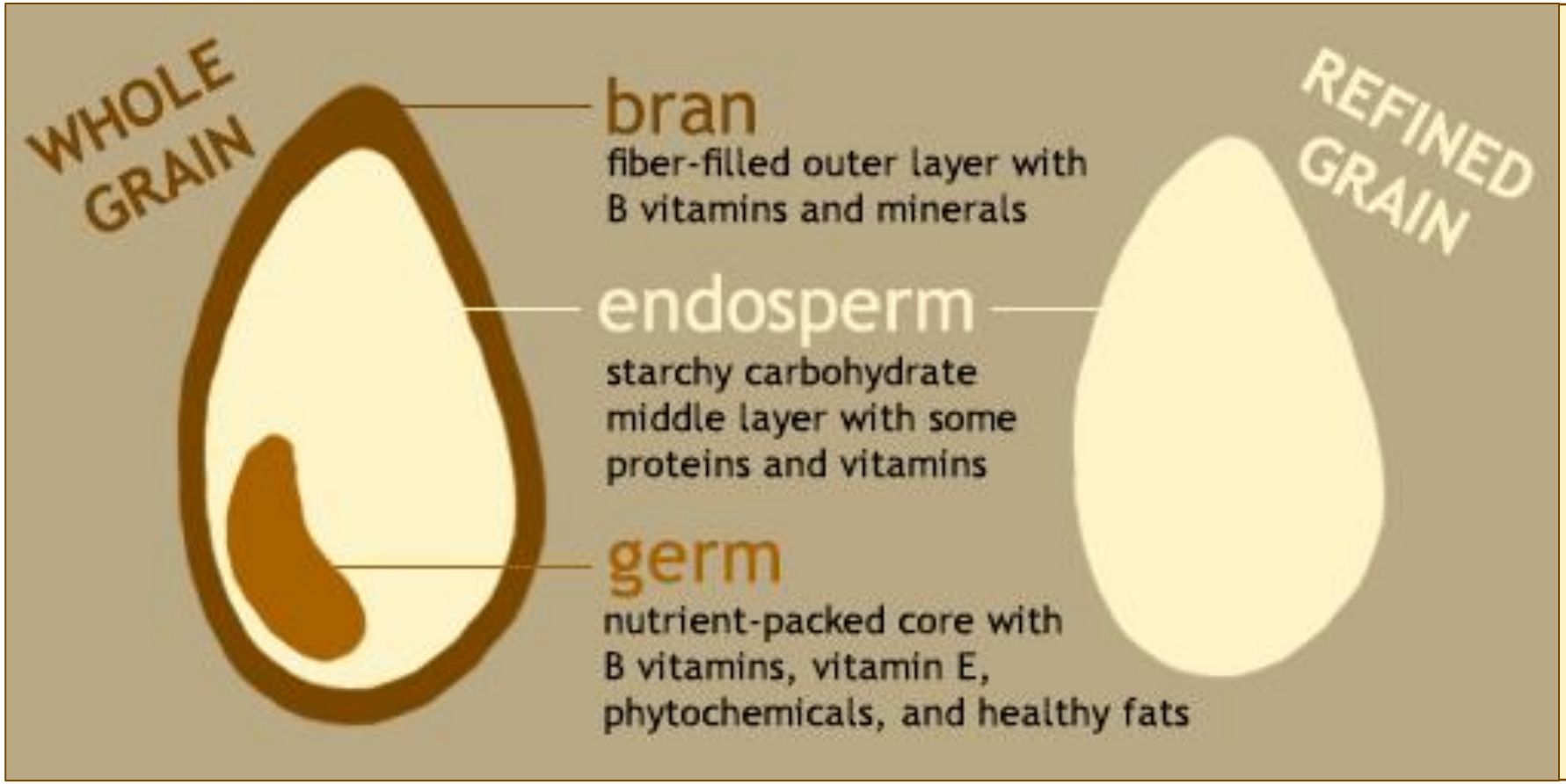
Supported by

Arnott's Vita-Weat

Potential perceived conflicts of interest

- Arnott's – Honorarium for todays talk
- Kellogg's – sponsored previous work on fibre & whole grains
- Mars Foods Australia – has funded work on vegetables including fibre intake

Wholegrains, nutrition & health



↑whole grain +high fibre intakes ↓odds

- Gain weight
- Heart disease
- Type 2 diabetes
- Bowel cancer
- All cause mortality

Maintenance of gut microbiota – SCFAs & other metabolites

+ emerging evidence for inflammatory diseases

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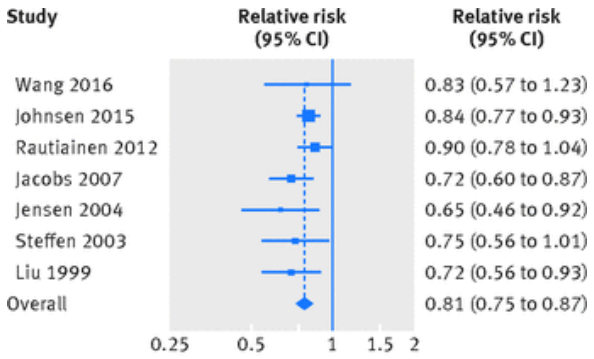
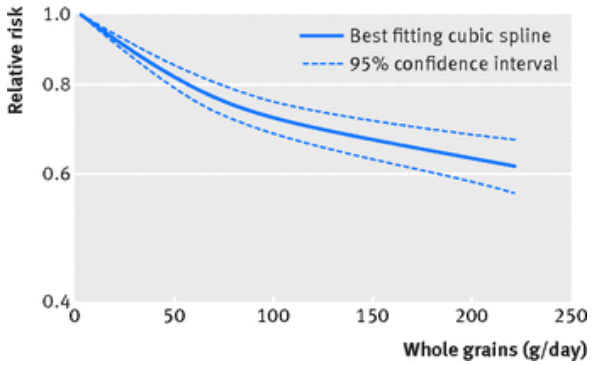
Reynolds et al Lancet 2019, https://doi.org/10.1016/S0140-6736(18)31809-9

Whole grain consumption and risk of cardiovascular disease, cancer, and all cause and cause specific mortality: systematic review and dose-response meta-analysis of prospective studies

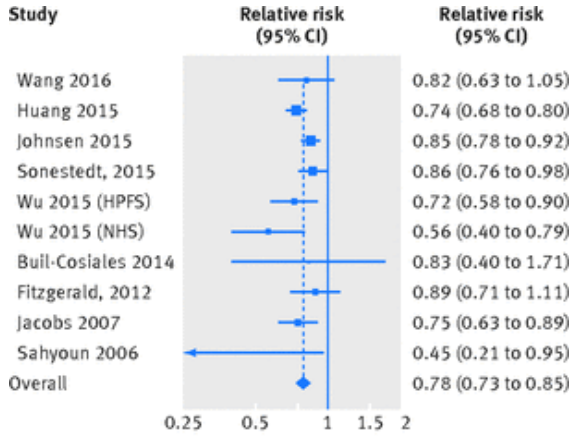
Coronary Artery Disease

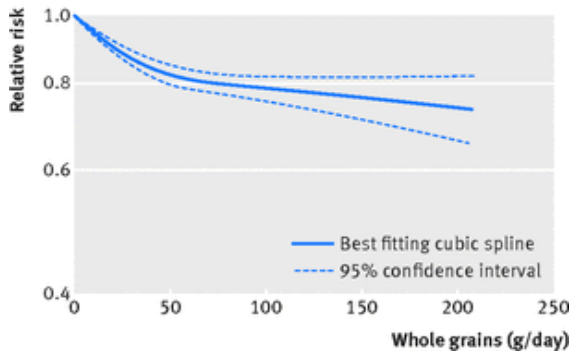




90g/day
RR=0.8

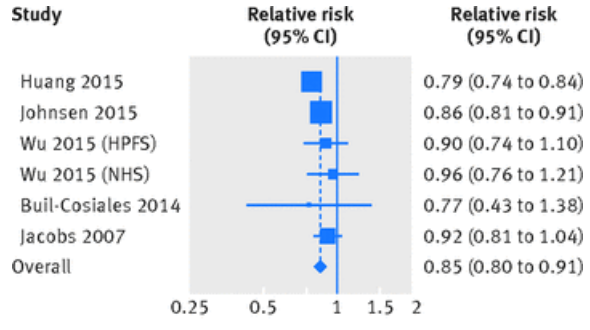
Cardiovascular disease

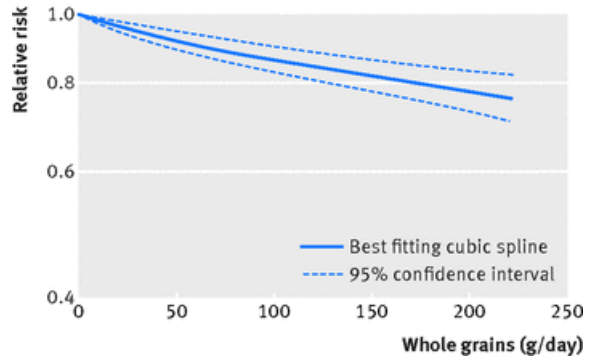




90g/day
RR=0.78

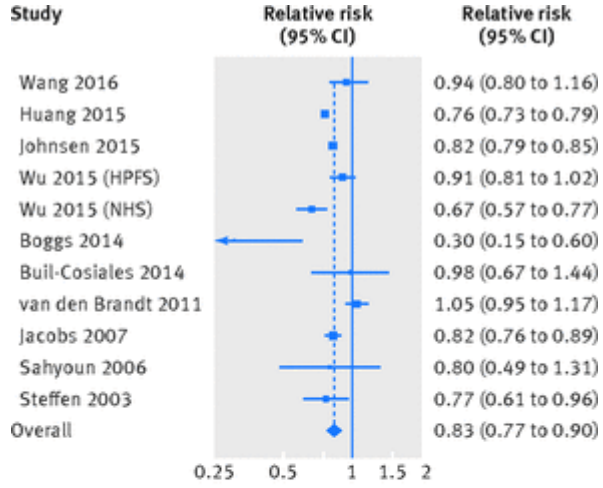
Cancers

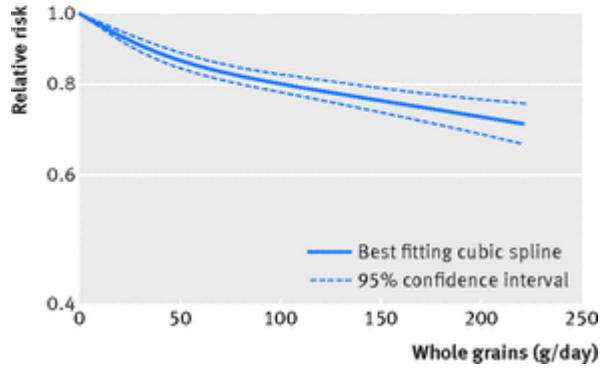




90g/day
RR=0.85

All cause mortality





90g/day
RR=0.83

Aune, 2016, BMJ 2016;353:i2716

Grains in the ADGs & AGHE

Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties

GUIDELINE 2

ENJOY A WIDE VARIETY OF NUTRITIOUS FOODS FROM THESE FIVE GROUPS EVERY DAY:

- Plenty of vegetables, including different types and colours, and legumes/beans
- Fruit
- Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties, such as breads, cereals, rice, pasta, noodles, polenta, couscous, oats, quinoa and barley
- Lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans
- Milk, yoghurt, cheese and/or their alternatives, mostly reduced fat (reduced fat milks are not suitable for children under the age of 2 years)

And drink plenty of water.

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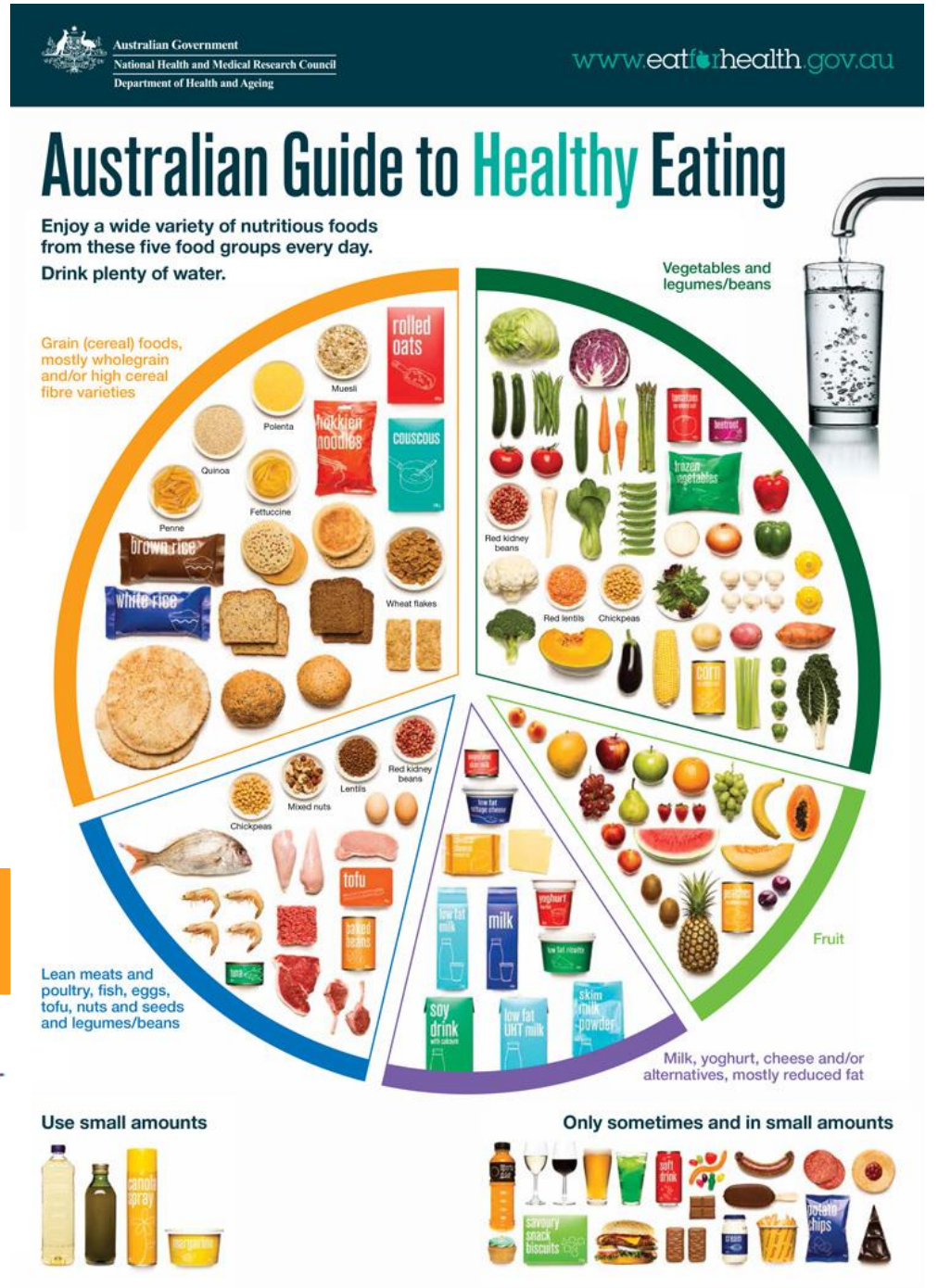
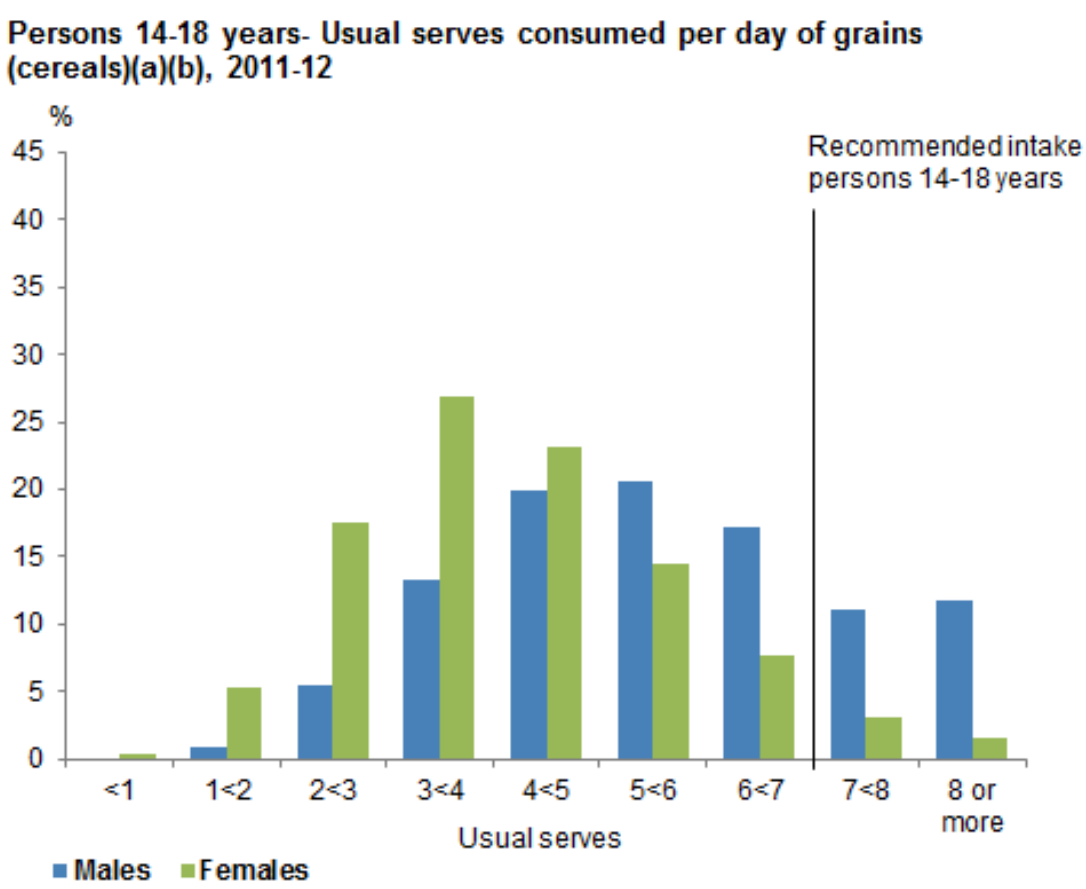
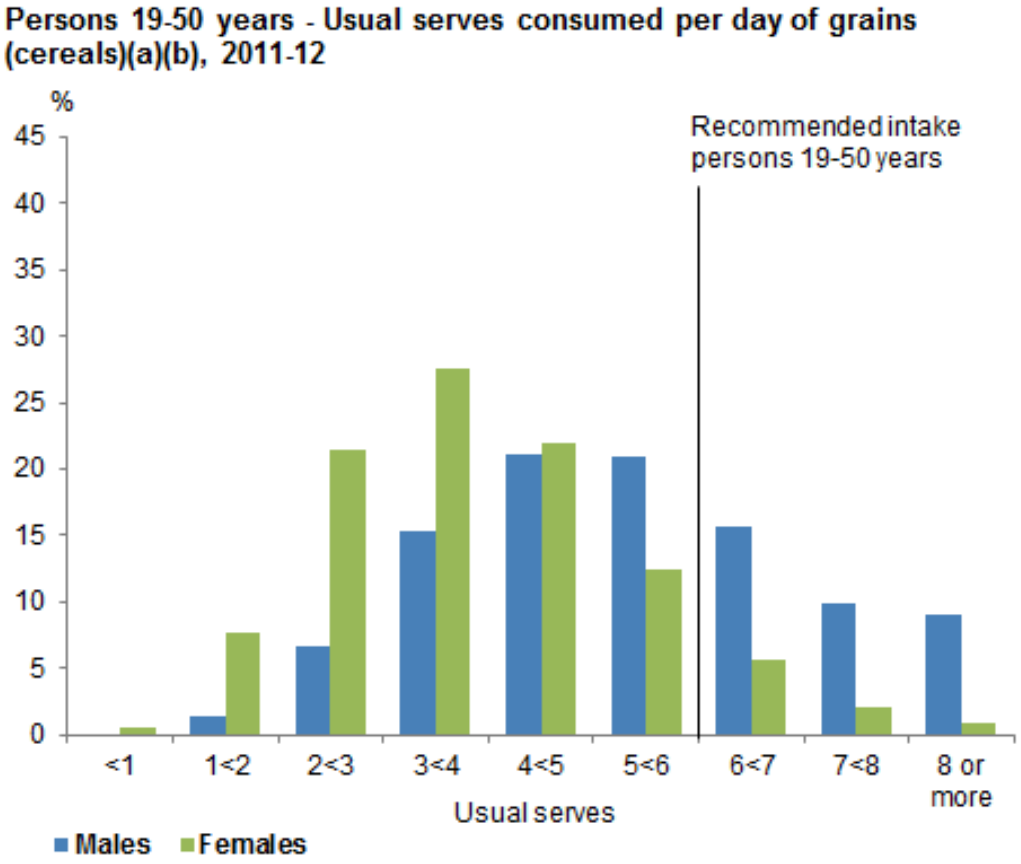


What we are actually eating





(a) Based on Day 1. See Glossary for definition.
(b) From non-discretionary sources.
Source: National Nutrition and Physical Activity Survey, 2011-12.

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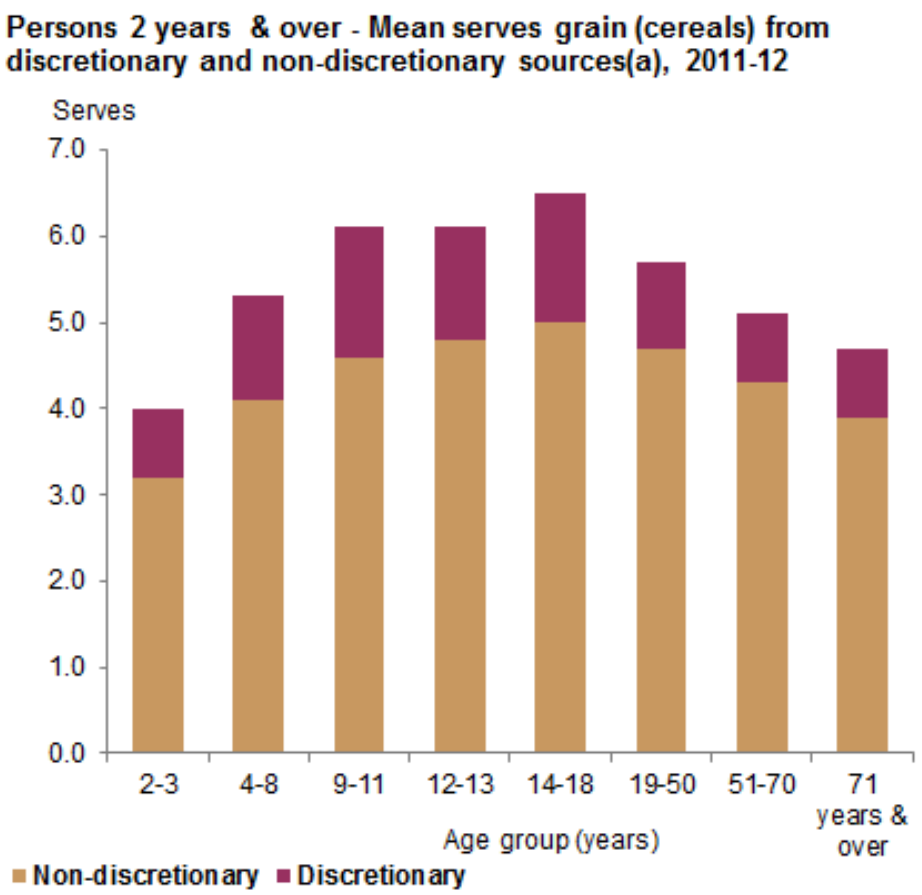

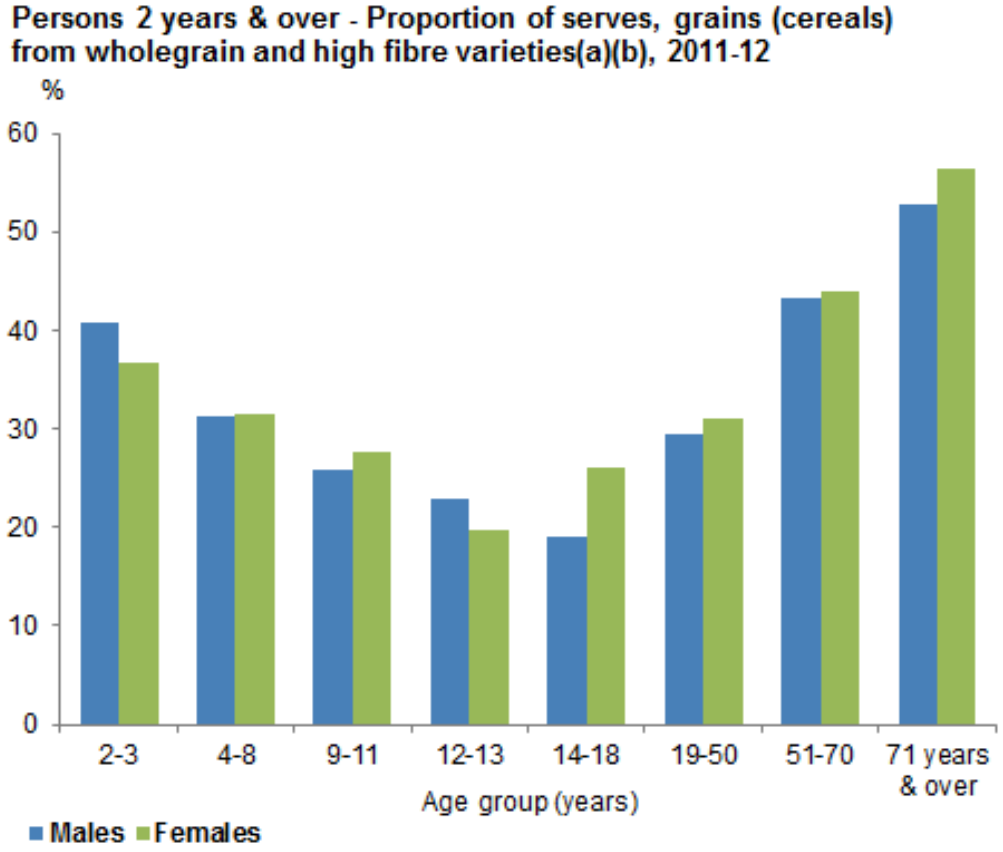

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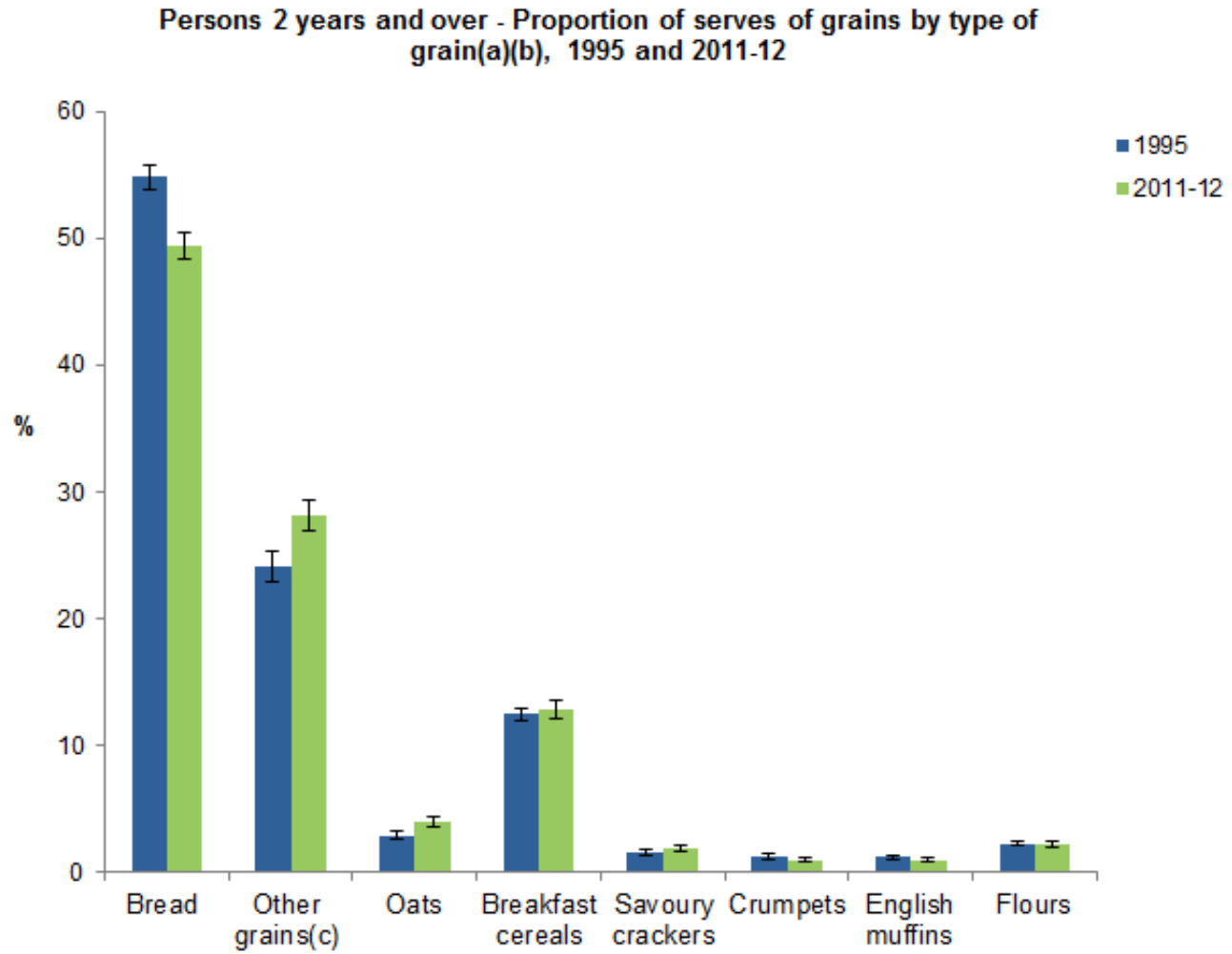

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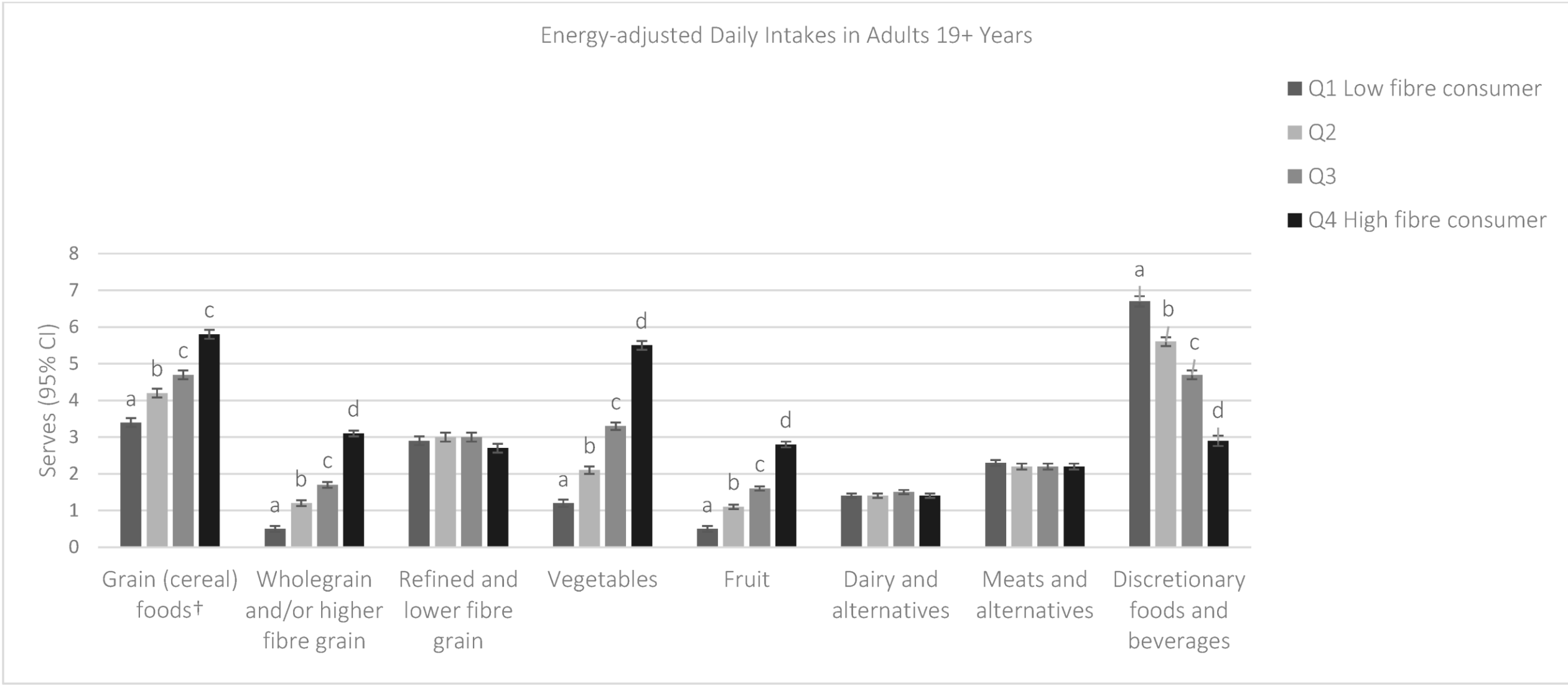
Quality matters



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Fayet-Moore Nutrients **2018**, *10*(9), 1223; https://doi.org/10.3390/nu10091223

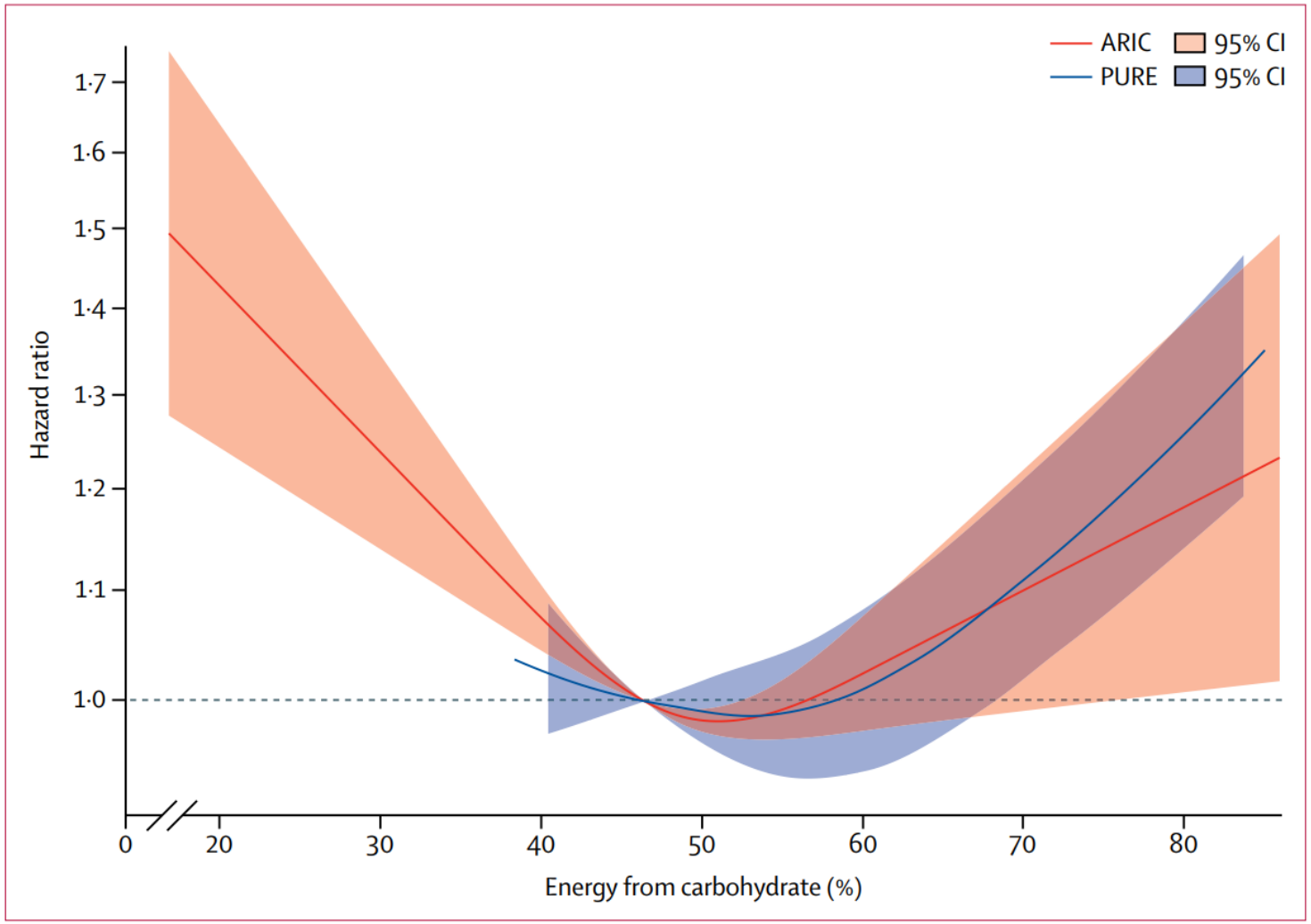
The misunderstandings

Grains & Legumes Nutrition Council Attitudes Survey (triennial consumption survey -2017)

- **47%** of people **actively choose** to eat less grain foods than AGHE recommendations.
- Common reasons provided for grain avoidance were to assist with weight loss and a perceived link between grain foods and bloating.
- ~50% of people confused about identifying wholegrain or high fibre foods
- In all age groups (except women 51+ years), less than 10% of people surveyed were able to identify their recommended number of daily core grain serves.

https://www.glnc.org.au/resources/glnc-grains-legumes-consumption-study/

The potential problem with low carb diets



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Seidelmann et al, Lancet 2018 - https://doi.org/10.1016/S2468-2667(18)30135-X

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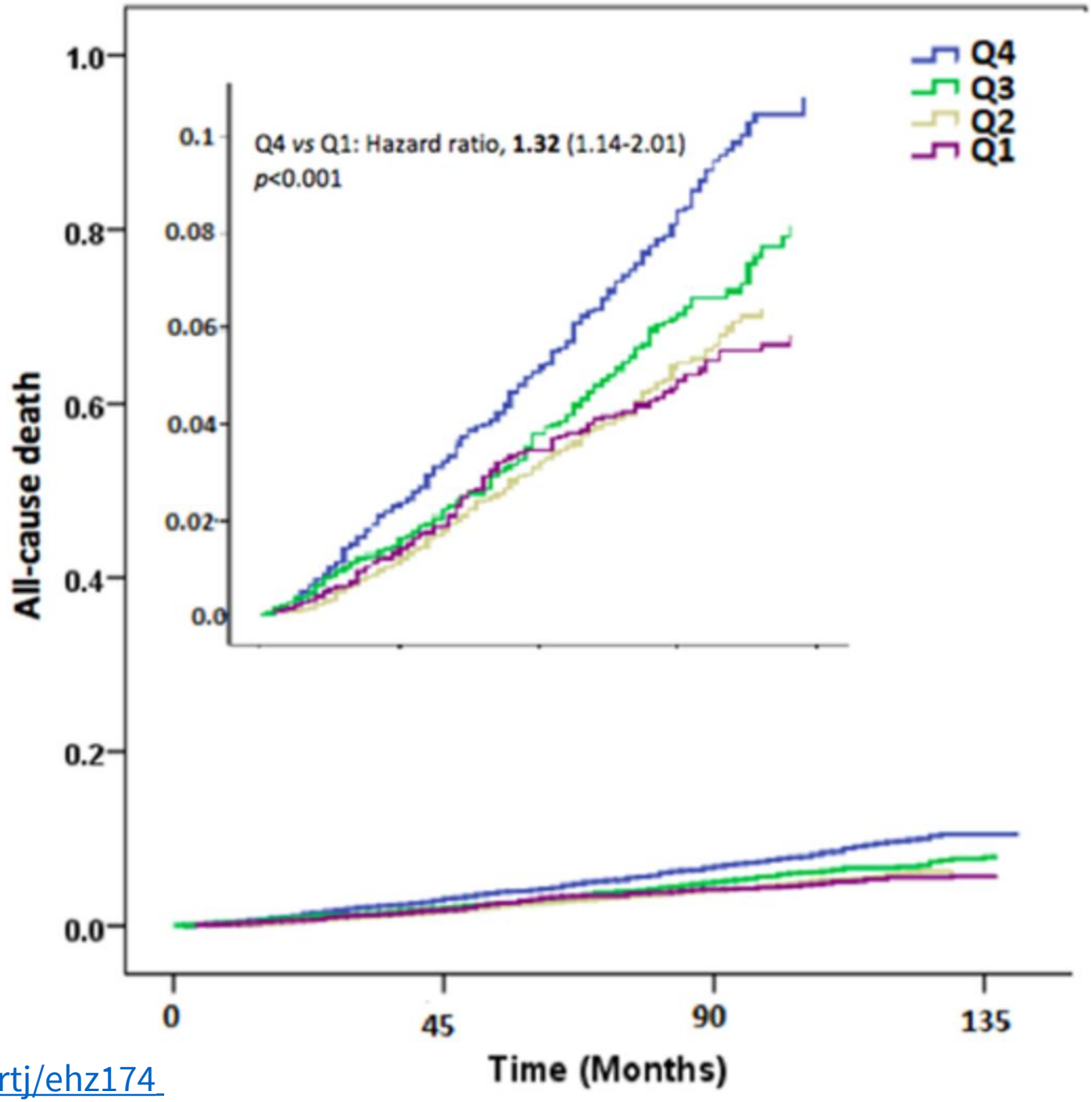


Mazidi et al, 2019, EHJ, https://doi.org/10.1093/eurheartj/ehz174

Table 1 NHMRC Evidence Hierarchy: designations of 'levels of evidence' according to type of research question (including explanatory notes)

Level	Intervention [1]	Diagnostic accuracy [2]	Prognosis	Aetiology [3]	Screening Intervention
I [4]	A systematic review of level II studies	A systematic review of level II studies	A systematic review of level II studies	A systematic review of level II studies	A systematic review of level II studies
II	A randomised controlled trial	A study of test accuracy with: an independent, blinded comparison with a valid reference standard,[5] among consecutive persons with a defined clinical presentation[6]	A prospective cohort study[7]	A prospective cohort study	A randomised controlled trial
III-1	A pseudorandomised controlled trial (i.e. alternate allocation or some other method)	A study of test accuracy with: an independent, blinded comparison with a valid reference standard,[5] among non-consecutive persons with a defined clinical presentation[6]	All or none[8]	All or none[8]	A pseudorandomised controlled trial (i.e. alternate allocation or some other method)
III-2	A comparative study with concurrent controls: ▪ Non-randomised, experimental trial[9] ▪ Cohort study ▪ Case-control study ▪ Interrupted time series with a control group	A comparison with reference standard that does not meet the criteria required for Level II and III-1 evidence	Analysis of prognostic factors amongst persons in a single arm of a randomised controlled trial	A retrospective cohort study	A comparative study with concurrent controls: ▪ Non-randomised, experimental trial ▪ Cohort study ▪ Case-control study
III-3	A comparative study without concurrent controls: ▪ Historical control study ▪ Two or more single arm study[10] ▪ Interrupted time series without a parallel control group	Diagnostic case-control study[6]	A retrospective cohort study	A case-control study	A comparative study without concurrent controls: ▪ Historical control study ▪ Two or more single arm study
IV	Case series with either post-test or pre-test/post-test outcomes	Study of diagnostic yield (no reference standard)[11]	Case series, or cohort study of persons at different stages of disease	A cross-sectional study or case series	Case series

Grain free fads

Diets

Gluten free

Paleo

Keto

Grain Free

Products

Potential consequences

Low fibre

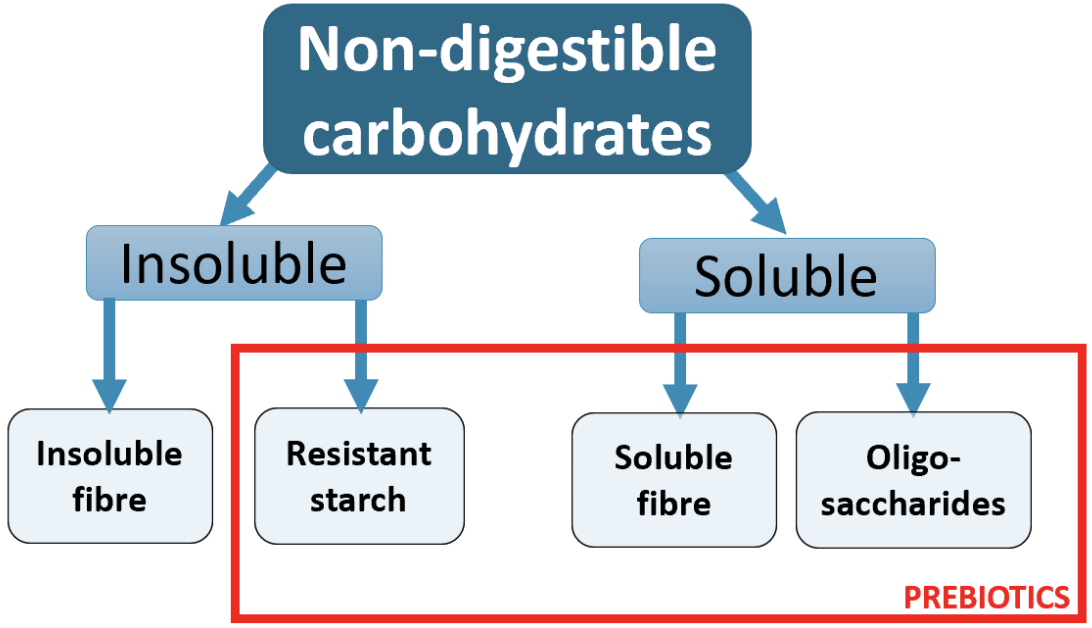
Constipation, colorectal cancer, diverticulitis, ↑cholesterol levels, ↓satiety signalling, ↓management blood sugars, weight, PMS

Dysbiosis

↓SCFAs, antimicrobial peptides, release of phenolics & nutrients, nutrient absorption,↑mucosal thinning,

Nutrient deficiencies

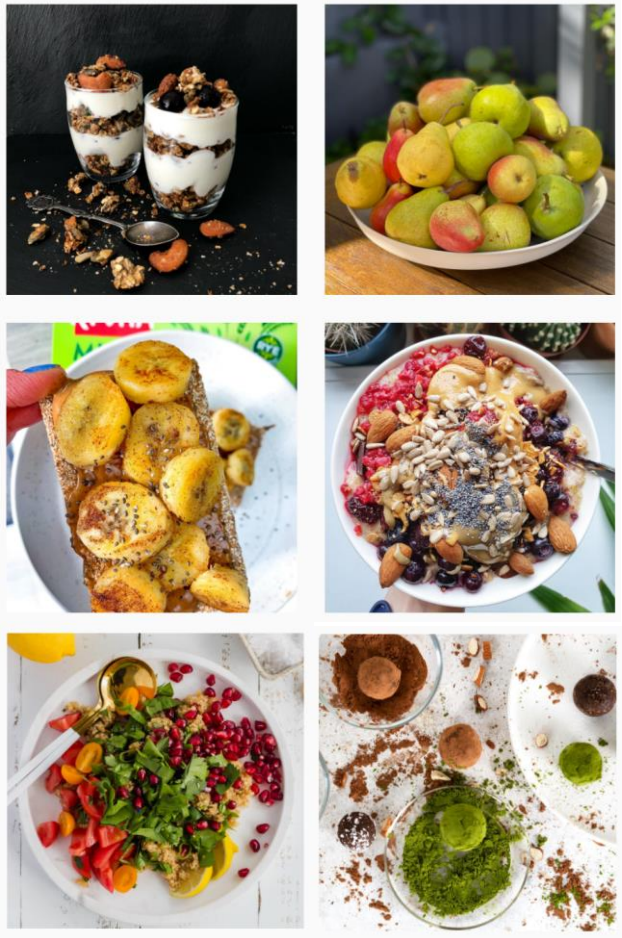
The problem with focus on prebiotics, specific fibres or features



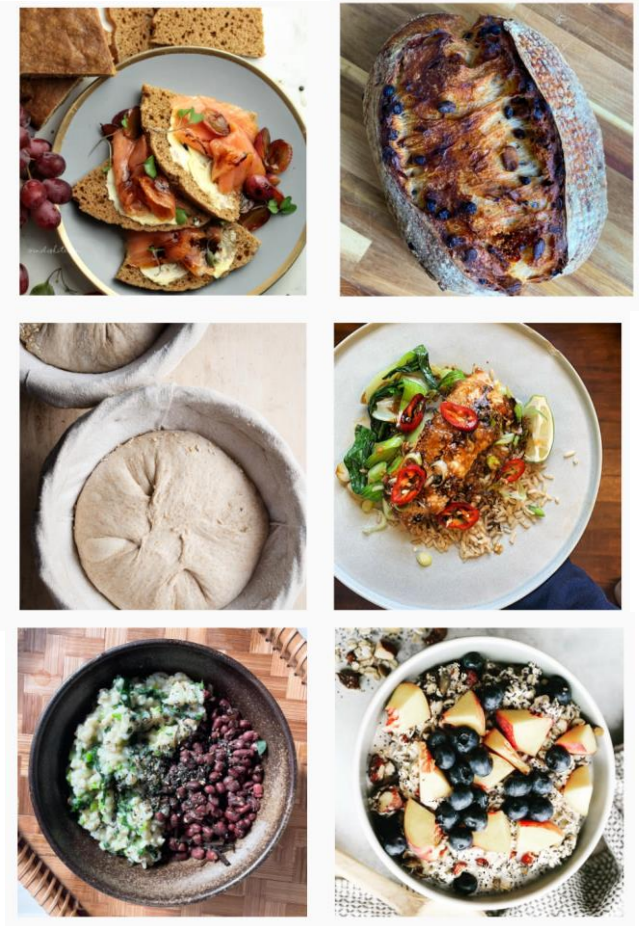
- Study individual types but eat **foods**
- Confuses the messaging
- Does nothing to dispelling myths & confusion
- Different bacteria eat different fibres
- Not all about bacteria food – the insoluble is also their “home”
- Don’t want to promote one at the expense of others – encourage variety
- Vegetables – generally accepted as healthful

The Instagram effect

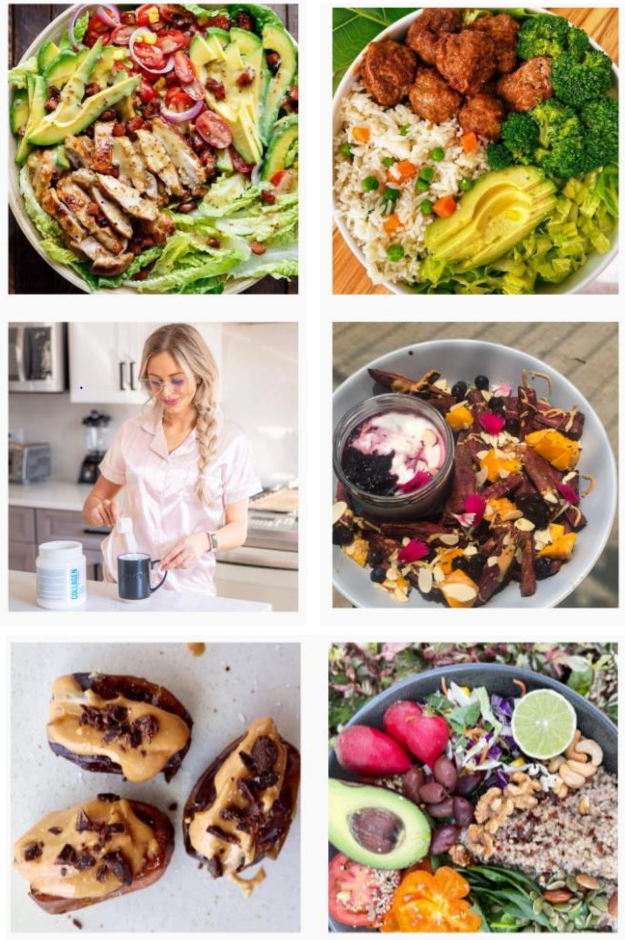
#fibre 660,000+



#wholegrain 430,000+



#guthealth 3,200,000+



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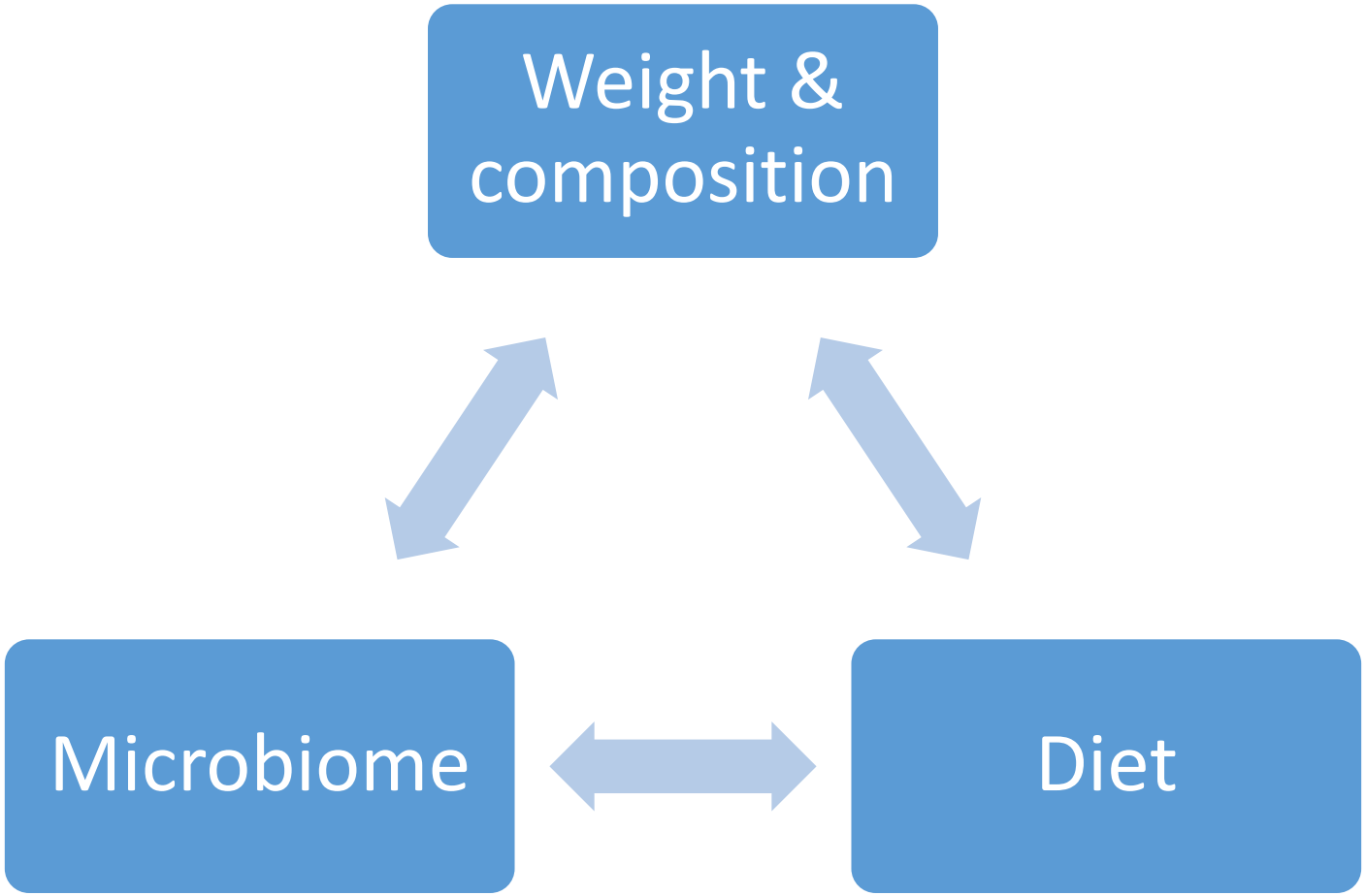
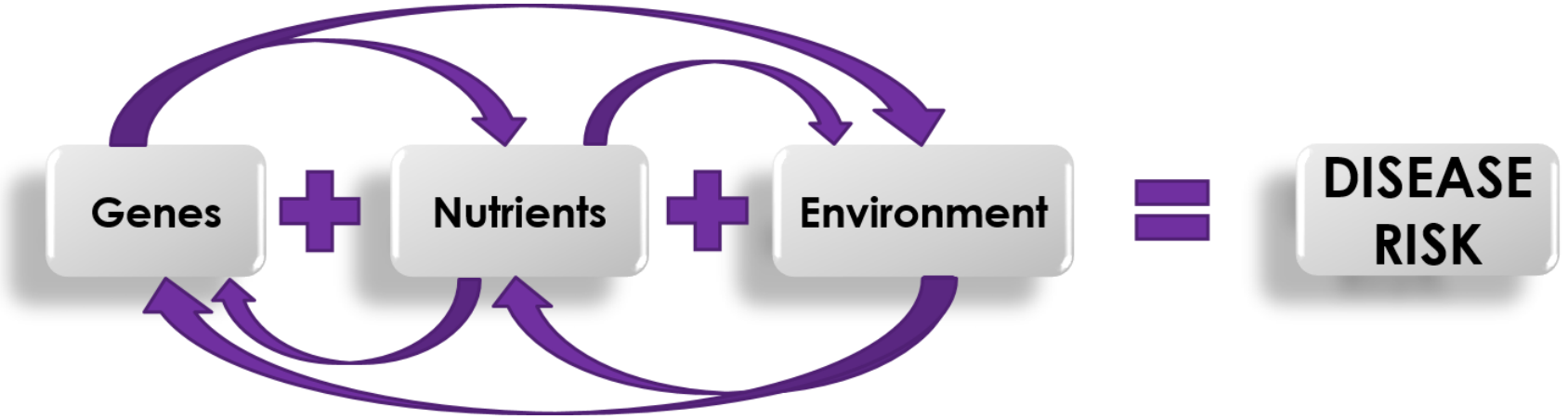
Perceived problems with fibre & wholegrains

- Gas
- Bloating
- Disruption of nutrient absorption
- Processing is “unnatural”
- Temporary weight gain
- Perceived energy density
- Inflammation

Interactive responses



Personalized responses



Moving forward

Support research

Consider off-target impacts of messaging

Transition approach

Questions?

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