

A HEALTHY AND SUSTAINABLE DIET

Nordic Rye Forum meeting 2019-11-22



Foto: Anna-Lena
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Health is one of the 17 Sustainable Development Goals



Until 2030:

- Decrease the number of people who die from NCDs by 33%
- Promote mental health and well-being



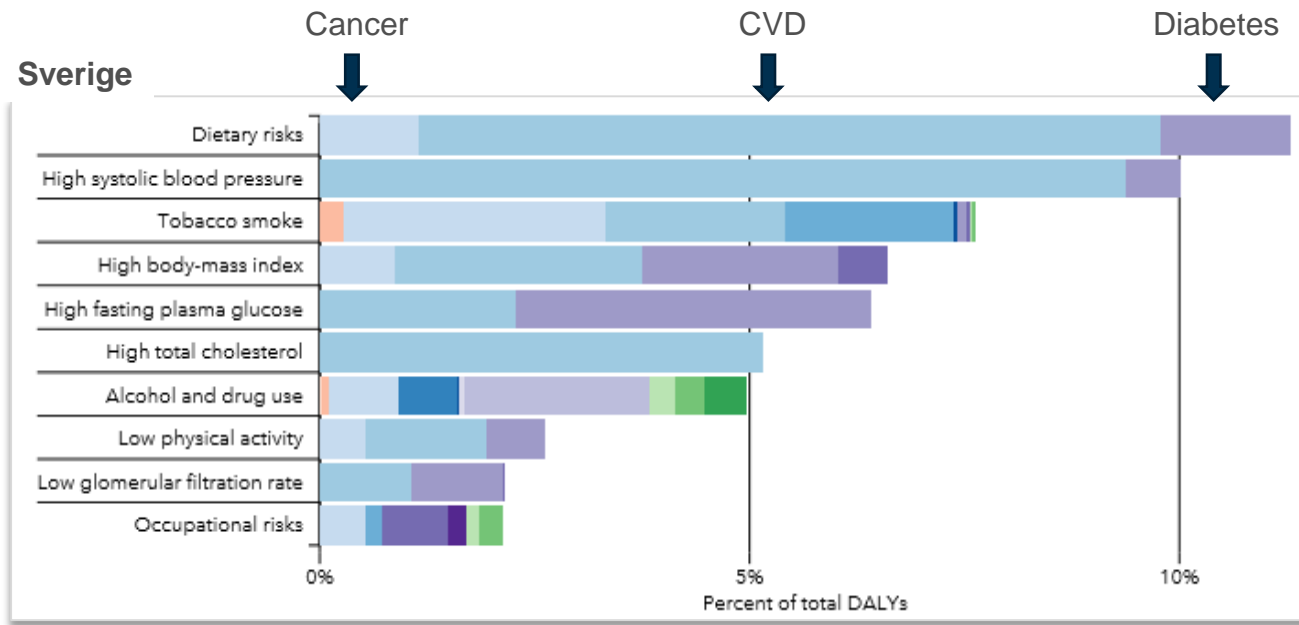
Diet is of major importance!

The role of diet among other risk factors?

14 diet factors (i.e. our diet) constitute the main threat to public health

Global Burden of Disease

Institute for Health Metrics and Evaluation (IHME)
Seattle/Melinda & Bill Gates Foundation



DALY \approx disease burden

"SUBOPTIMAL DIET", CVD AND T2D MORTALITY

- 8500 NHANES (US)
 - FFQ
- 702 300 † 2012 i CVD; Nat Centre Health Statistics
 - Myocardial infarction, stroke, DM
- Epidemiologic analysis

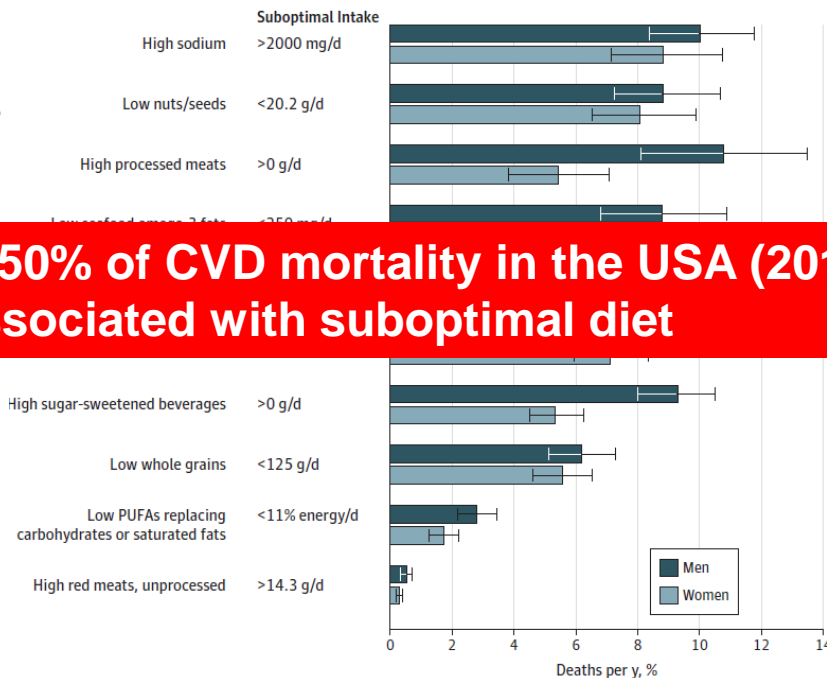
Too much:

- Salt
- Processed meat
- Sugar Sweetened Beverages
- Red Meat

Too little:

- Nuts
- Fatty fish (n-3 fat)
- Vegetables
- Fruits
- Whole grains
- Saturated fat (n-6 fat)

Proportional cardiometabolic mortality attributable to dietary habits in the United States in 2012



About 50% of CVD mortality in the USA (2012) was associated with suboptimal diet

DIET AND CANCER—AN "UP-DATE" FROM WCRF

About 30% of the common cancers can be prevented by a healthy diet, weight control and physical activity

• Increased risk:

- **Salt** – gastric cancer
- **Alcohol** – GI and breast cancer
- **Red and processed meat** – colorectal cancer

WCR:s advice for prevention:

- Stay normal weight
- Exercise
- Consume whole grains, fruits and legumes
- Avoid red/processed meat
- Avoid SSB
- Reduce salt intake

• Decreased risk:

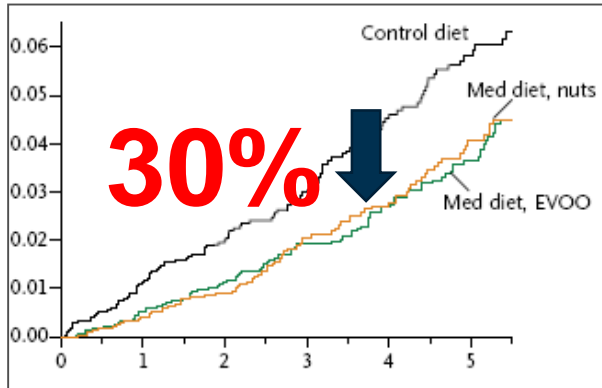
- **Plant based foods** – upper GI tract cancers
- **Dietary fibre / whole grains** – colorectal cancer
- **Coffee** – liver cancer
- **Alcohol** – kidney cancer

WCR CUP Sept 2017 edition

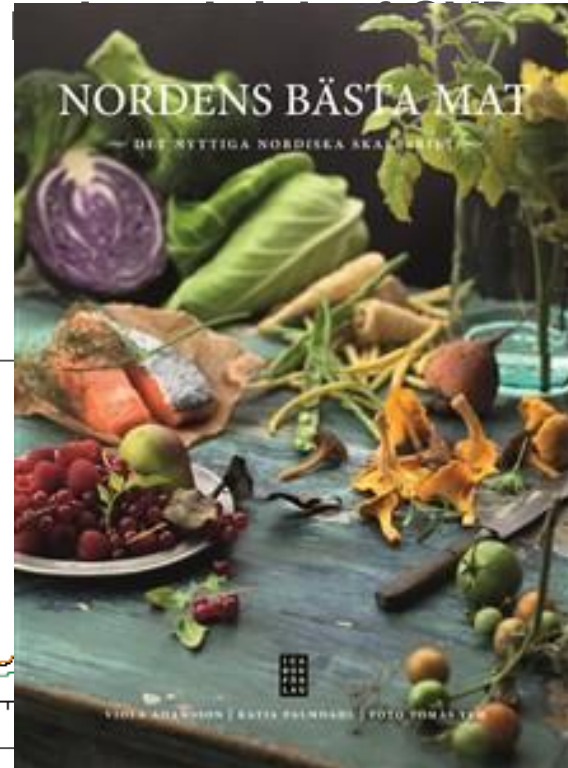
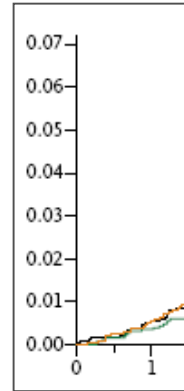
PREDIMED- RCT showing major impact of diet on CVD

Mediterranean diet with **olive oil** or **nuts**

- 7447 Spanish men and women (55-80y, 57% ♀) "healthy", risk factors
- 3 groups followed for ~5 y
- ✓ Med diet with $\frac{1}{2}$ -1 dl olive oil extra/d
- ✓ Med diet with nuts, a handful
- ✓ Control diet



Risk of getting CVD



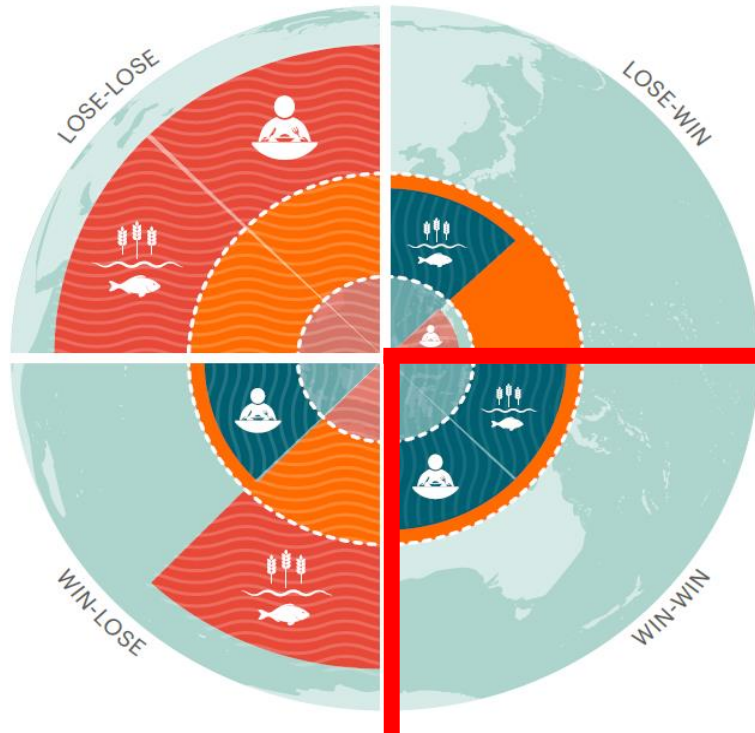
Mortality

Estruch R et al. N Engl J Med 2013;;368:1279-90

A Planetary Health Diet- connects human health and sustainability



A safe operating space for food systems- a framework integrating scientific targetes for healthy diets and sustainable production











WIN-WIN!

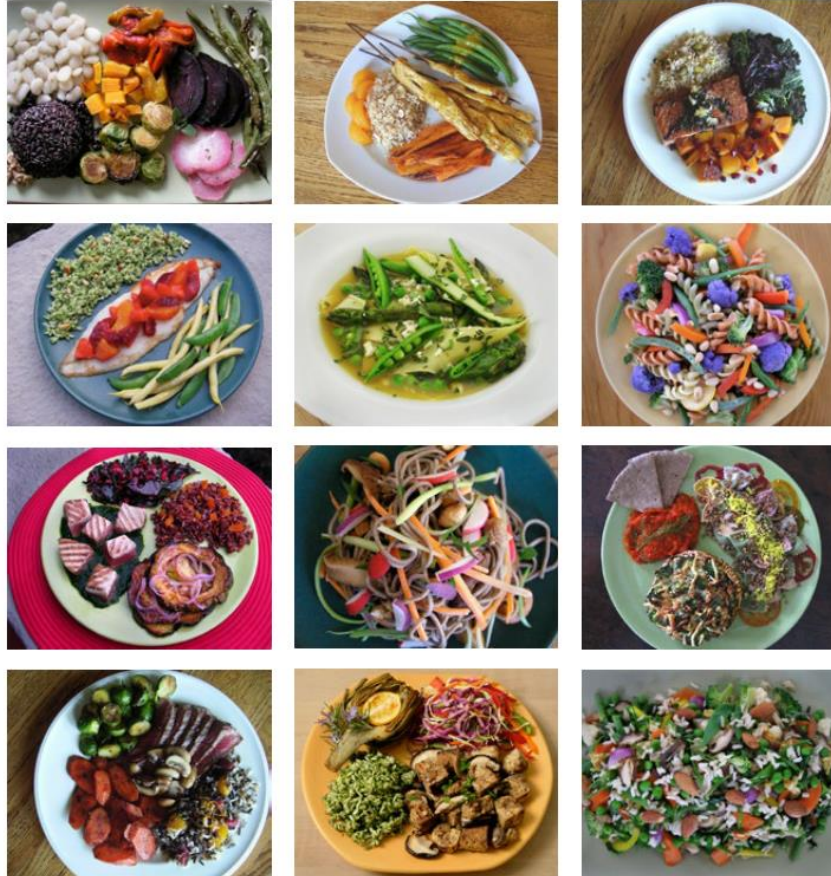
A Planetary Health Diet

2500 kcal/d



	Macronutrient intake grams per day (possible range)	Caloric intake kcal per day
 Whole grains Rice, wheat, corn and other	232	811
 Tubers or starchy vegetables Potatoes and cassava	50 (0–100)	39
 Vegetables All vegetables	300 (200–600)	78
 Fruits All fruits	200 (100–300)	126
 Dairy foods Whole milk or equivalents	250 (0–500)	153
 Protein sources Beef, lamb and pork Chicken and other poultry Eggs Fish Legumes Nuts	14 (0–28) 29 (0–58) 13 (0–25) 28 (0–100) 75 (0–100) 50 (0–75)	30 62 19 40 284 291
 Added fats Unsaturated oils Saturated oils	40 (20–80) 11.8 (0–11.8)	354 96
 Added sugars All sugars	31 (0–31)	120

A Planetary Health Diet in practise!





Dietary Guidelines in the Nordics



Nordic Nutrition Recommendations 2012

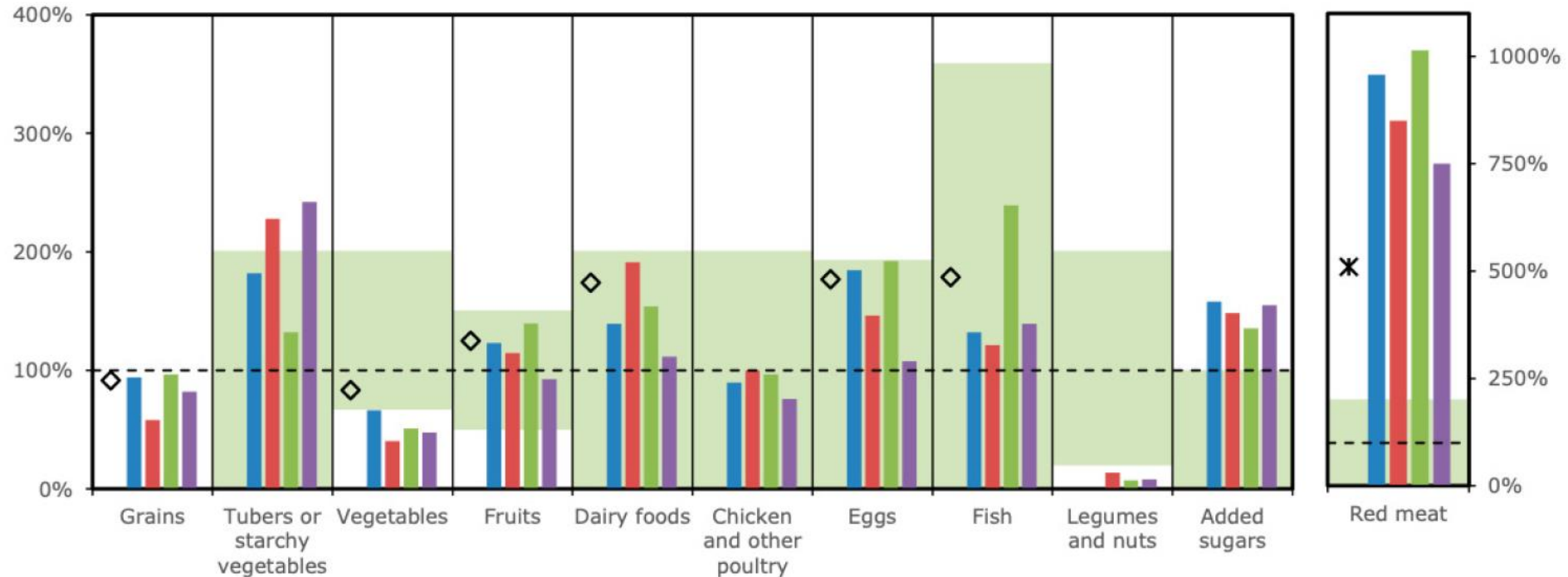
Integrating nutrition and physical activity



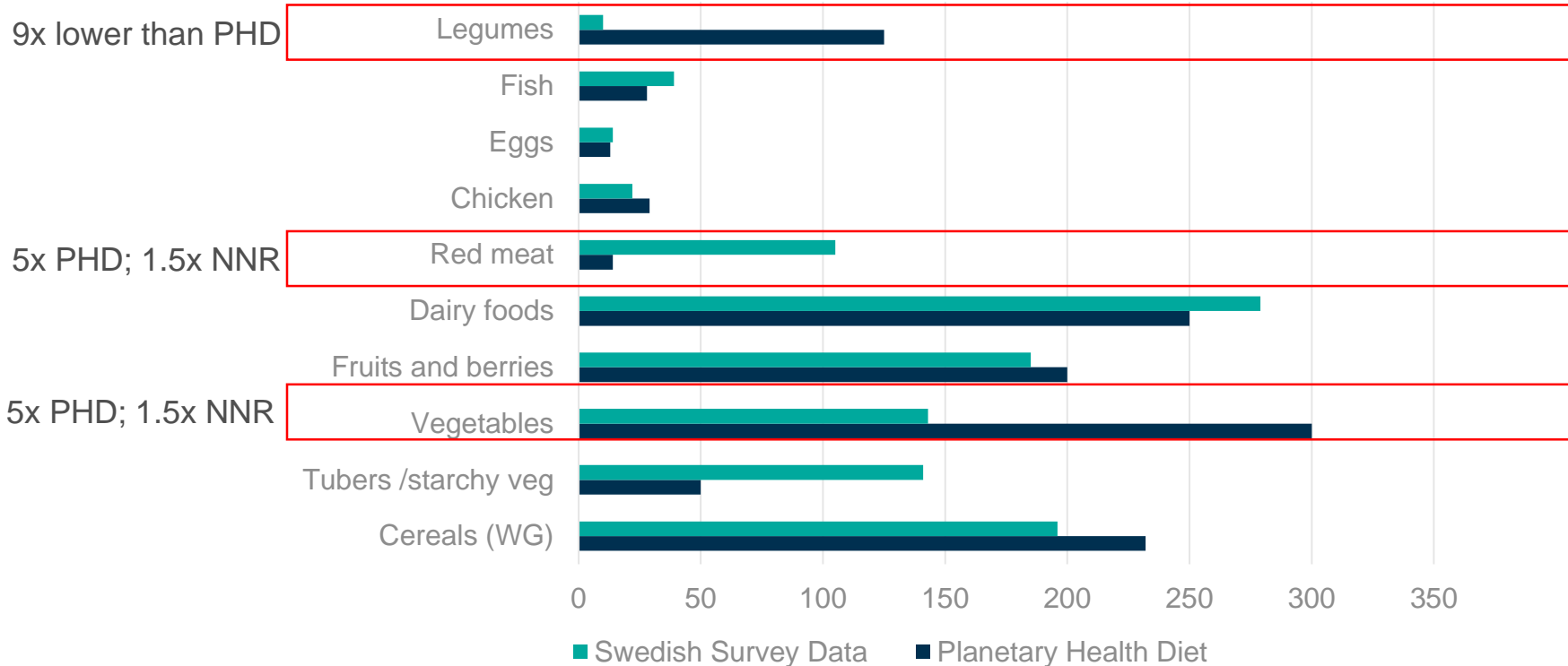
Increase	Exchange	Limit
Vegetables Pulses	Refined cereals → Wholegrain cereals	Processed meat Red meat
Fruits and berries	Butter → Vegetable oils Butter based spreads → Vegetable oil based fat spreads	Beverages and food with added sugar
Fish and seafood	High-fat dairy → Low-fat dairy	Salt
Nuts and seeds		Alcohol

Eat-Lancet targets of per capita consumption

■ Denmark ■ Finland ■ Norway ■ Sweden ◆ Nordic recommendation ✕ Nordic recommendation (maximum)



Planetary Health Diet vs current intakes in Sweden (g/d)



Scientific Evidence for a Planetary Health Diet

Eat-Lancet commission defines a health diet based on:

- Healthy diets defined based on food groups
- Added fats, sugar, salt, and other constituents also included
- Evidence from controlled feeding studies in humans with intermediate risk factors as outcomes
- Observational studies
- Randomised trials
- Systematic reviews, meta-analyses, and pooled analyses when available
- No apparent systematic review according to specific criteria

Estimated intakes of the reference diet with (broad) intervals

“We anticipate further research will provide improved precision in defining ranges for optimal intakes of specific food groups and health effects of overall diets”



Total energy intake

2500 kcal/d used as reference

corresponds to a 30 year old man/woman,
70kg/60 kg with moderate – high physical
activity

Global requirement: 2370 kcal/d

In the USA:

Men: 2800 kcal/d

Women: 2200 kcal/d

***The relative distribution of nutrients will not change
with absolute energy intakes***

Dietary pattern characteristics promoting health and wellbeing

Diet component	Advice
<i>Protein sources</i>	<ul style="list-style-type: none"> - Plants, including soy foods, other legumes, and nuts, fish or other omega-3 FA sources several times per week - Modest consumption of poultry and eggs, and low intakes of red meat, if any, especially processed meat
<i>Fat</i>	<ul style="list-style-type: none"> - From unsaturated plant sources - Low intakes of saturated fats, and no partly hydrogenated oils
<i>Carbohydrates</i>	<ul style="list-style-type: none"> - Whole grains - Low intake of refined grains - <5% of energy from sugar
<i>Fruits and vegetables</i>	> 5 servings per day
<i>Dairy foods</i>	- Moderate consumption

Special considerations

140 g vegetables -> 300 g
105 g red meat -> 14 g
10 g legumes -> 125 g

- **Iron deficiency** among women in fertile age

Recommended intake in NNR: **15 mg/d for girls and women in fertile age** (10 mg/d for adults)

Actual intake in Sweden: **9.5 mg/d for women in fertile age** (10 mg/d for adults overall)

Bioavailability assumed to be 15% in a mixed diet but only 5% in a vegetarian diet => 3x intakes needed!

- **B12, long-chain omega 3 fatty acids, zink and selenium**

The role of red meat in human health

Eat-Lancet commission report (Willett et al. 2019) refers to studies stating:

- **Vegeterian diets**, **vegan** or **pescaterian diets** and **semi-veg.** diets had a **12% lower overall mortality risk** than omnivores
- **A plant-based dietary score** as associated with **lowered risk** of developing **T2D** and **CHD**
- **Processed meat red meat** associated **with increased risk of all cause** and **CVD-mortality**

Annals of Internal Medicine

REVIEW

Effect of Lower Versus Higher Red Meat Intake on Cardiometabolic and Cancer Outcomes

A Systematic Review of Randomized Trials

“Our results highlight the uncertainty regarding causal relationships between red meat consumption and major cardiometabolic and cancer outcomes.”

Observational studies

- Self-reported data
- Confounding
- Low relative risks observed
- Causality

Randomized Controlled trials

- Difficult/unethical to perform
- Poord compliance
- Large heterogeneity in response

SUMMARY

- A Planetary Health Diet (PHD) differ substantially from the current diet
- Studies underlining the PHD have not been systematically selected
- A shift towards a PHD requires careful considerations
- Dietary patterns sharing elements with the PHD have shown beneficial health outcomes
- Further research is needed to establish optimal intakes for different foods
- We need better tools to study food exposures and their role in human health

Acknowledgements for funding

FORMAS



Ingabritt och Arne Lundbergs
forskningsstiftelse

A group of approximately 20 people are seated around a large, light-colored wooden conference table in a bright, modern meeting room. They are all smiling and waving their hands towards the camera. The room features large windows with red curtains, a bookshelf with books and decorative vases, and a projector mounted on the ceiling. The text "Thank you!" is overlaid in the center of the image.

Thank you!



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