Development and implementation of dietary guidelines: Possibilities and barriers

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50 years of cooperation for healthy eating

- Editions in 1980, 1989, 1996, 2004, 2012, 2023
- Regional collaboration: summarize scientific evidence on health effects of nutrient and foods
- NNR is scientific foundation for nutrient recommendations and dietary guidelines in eight Nordic and Baltic countries
- Nutrient recommendations: universal, very few exceptions
- Dietary guidelines: universal science, but also integrate country specific context

Nordic and Baltic countries: 40 mill people

Nordic Nutrition Recommendations 2023 (NNR2023)

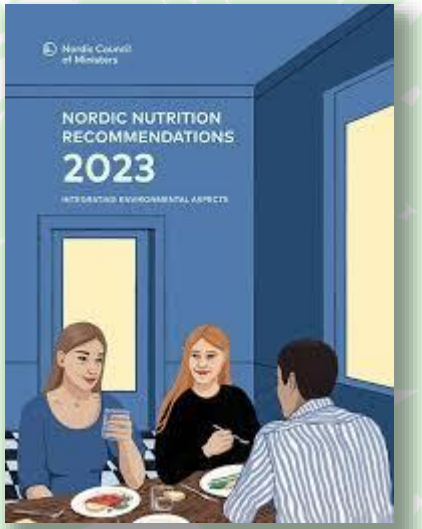
- Commissioned by Nordic Council of Ministers
- NNR2023 milestones
  - Update nutrient recommendations
  - Update food-based dietary guideline
  - Integrate environmental effects of food consumption
- NNR2023 project (2016-2023)
  - Independent committee (15 scientist appointed by Nordic Health authorities)
  - 231 international multidisciplinary scientists
  - Published 80 background papers in Food & Nutrition Research (open access)
  - Main report published June 2023

Methodology for literature reviews

- Systematic literature summary
  - Non-bias, objective
  - Reproducible
  - Predefined control and checklists
  - Predefined criteria for assessment of data and evaluation of strength of evidence

Milestone 1: Update nutrient recommendations

1. Fluid and water balance
2. Energy
3. Fat and fatty acids
4. Carbohydrates
5. Dietary fibre
6. Protein
7. Alcohol
8. Vitamin A
9. Vitamin D
10. Vitamin E
11. Vitamin K
12. Thiamin
13. Riboflavin
14. Niacin
15. Vitamin B6
16. Folate
17. Vitamin B12
18. Biotin
19. Pantothenic acid
20. Vitamin C
21. Calcium
22. Phosphorus
23. Magnesium
24. Sodium and salt
25. Potassium
26. Iron
27. Zinc
28. Iodine
29. Selenium
30. Copper
31. Chromium
32. Manganese
33. Molybdenum
34. Fluoride
35. Choline
36. Phytochemicals/antioxidants

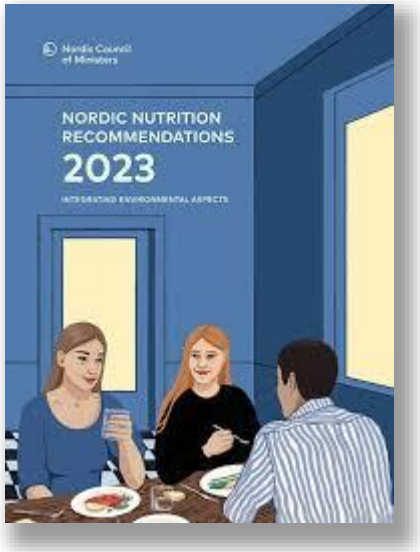


1. Blomhoff et al. Nordic Nutrition Recommendations 2023
2. 36 background papers on health effects of nutrients

Milestone 2: Update dietary guidelines based on health

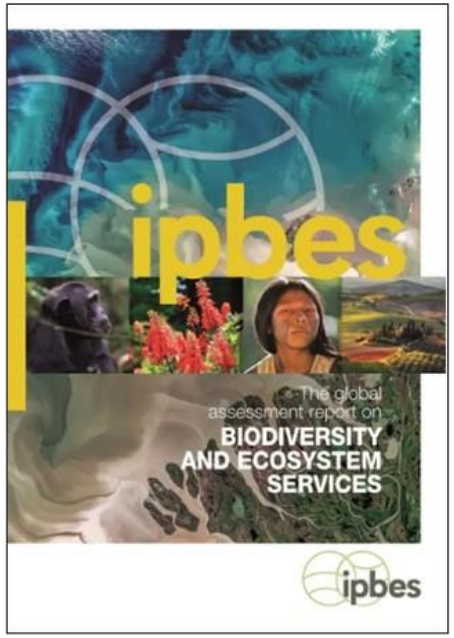
Food groups, meal- and dietary patterns

- Breastfeeding
- Complementary feeding
- Beverages
- Cereals
- Vegetables, fruits, and berries
- Potatoes
- Fruit juices
- Pulses/legumes
- Nuts and seeds
- Fish and seafood
- Red meat
- White meat
- Milk and dairy products
- Eggs
- Fats and oils
- Sweets
- Alcohol
- Dietary patterns
- Meal patterns
- Ultra-processed foods



1. Blomhoff et al. Nordic Nutrition Recommendations 2023
2. 20 background papers on health effects of food groups

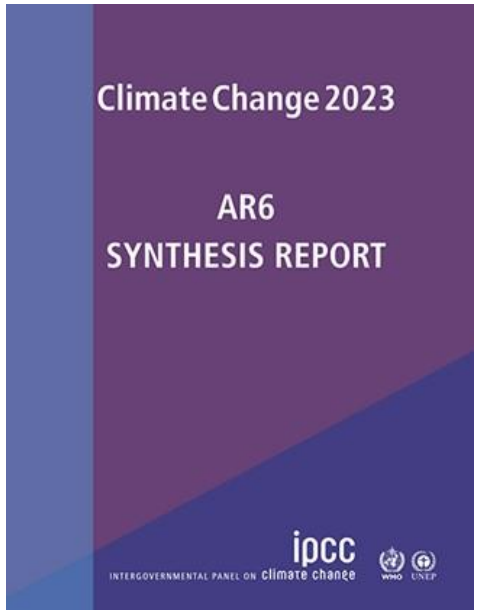
Milestone 3: Assessed environmental effects of food consumption



The Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES)
Global Assessment Report on Biodiversity and Ecosystem Services (2019)

Declarations from the Nordic Council of Ministers:
Action plan 2021-2024
Biodiversity (03.05.22)
Sustainable food systems (24.06.21)
Global climate agenda (30.04.20)
Nordic carbon neutrality (25.01.19)

Evidence synthesis on environmentally sustainable food consumption



The Intergovernmental Panel on Climate Change (IPCC)

Five NNR background papers on sustainability

Healthy and environment-friendly dietary guidelines for Nordic and Baltic countries

"A shift to a more plant-based dietary pattern"

- **A predominantly** plant-based diet high in vegetables, fruits, berries, pulses, potatoes and whole grains
- **Ample** intake of fish and nuts
- **Moderate intake** of low-fat dairy products
- **Limited intake** of red meat and poultry
- **Minimal intake** of processed meat, alcohol, and processed foods containing high amounts of fats, salt and sugar

Healthy and environment-friendly dietary guidelines in Nordic and Baltic countries (examples)

Vegetables, fruits and berries

500 – 800 g/d or more for health and environmental reasons.

Legumes (pulses)

Increased intake supported for nutrient and environmental reasons.

Potatoes

Increased intake supported for environmental reasons.

Potatoes prepared with low fat and salt should be preferred.

Nuts & Seeds

20-30 g/d (nuts)

Increased intake supported for nutrient, health and environmental reasons.

Fats & Oils

25 g/day vegetable oil for nutrient adequacies.

Limited amounts of butter, tropical oils for nutrient and envir. reasons.

Fish

300–450 g/w, of which at least 200 g/w should be fatty fish.

Increased intake supported for health & environmental reasons if from sustainably managed stocks .

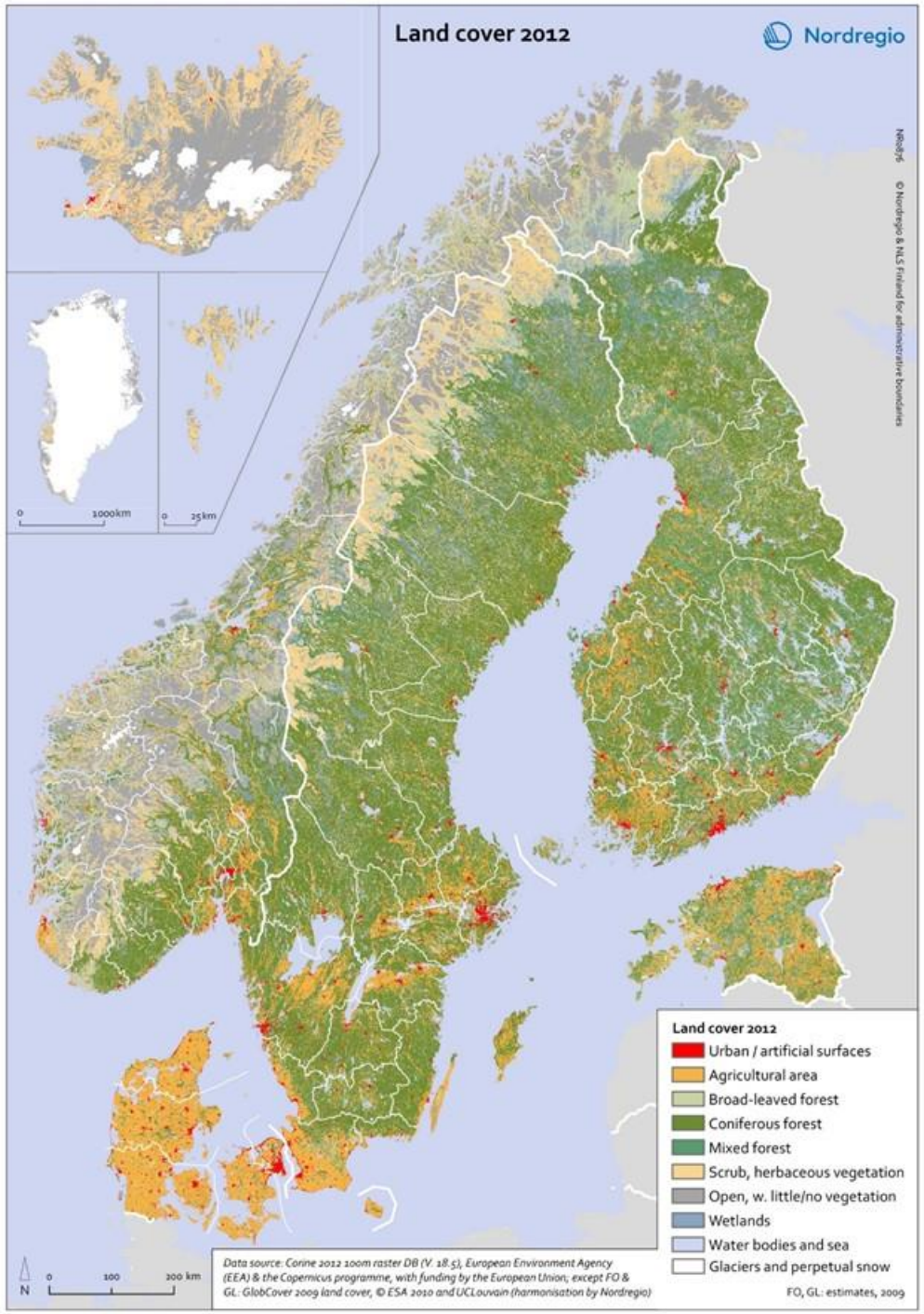
Red meat

Max 350 g/w + processed red meat as little as possible for health reasons .

For environmental reasons the consumption should be considerably lower.

Adoption of NNR2023 to national dietary guidelines

- Done in all the Nordic countries and Estonia
- Nutrient recommendations adopted as such
- For food-based dietary guidelines: modeling nutritional adequacy, health impacts, and environmental impacts of adhering to the dietary guidelines of the NNR2023
- The largest differences among the national dietary guidelines were in the animal-sourced foods



Differences in FBDGs for meat and dairy in the Nordic countries and Estonia after NNR2023

Food group	NNR2023	Denmark	Finland	Iceland	Norway	Sweden	Estonia
Red meat	Health-based: ≤350 g/vko Environment-based: Less than 350g/wk						
Poultry	Not to be increased from current levels, and may be lower for environmental reasons						
Milk and dairy products	350-500 g/d of low-fat milk and dairy.						

Implementation of NNR2023 in national policies in the Nordic and Baltic countries

- Sub-population-specific dietary guidelines
- Communication, campaigns
- Front of package food labelling, nutrient declarations
- Taxes
- Public procurements and public food services (e.g. hospitals, nursing homes, schools, public canteens)
- Fortification policies

- Health educations (MDs, nurses, dietitians)
- Health professionals (special diet, supplements, parenteral- and enteral nutrition)
- Benchmarking of national surveys
- Food industry
- Food retail
- Agricultural policies
- Main fundament for nutrition research

Barriers

- Conflicting political interests linked with misinformation
- Power imbalances
- Nutrition inequity
- Insufficient shared understanding of sustainability?

Picture: European Public Health Alliance

Examples of successful implementation of nutrition recommendations in the Nordics

The Whole Grain Partnership—How a Public–Private Partnership Helped Increase Whole Grain Intake in Denmark

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