Sustainable Nutrition for prevention of NCDs

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energy balance center
The pandemics of obesity, undernutrition, & climate change interact in time and place, have synergistic adverse effects on each other, share common underlying social or economic determinants and policy drivers.

➔ syndemic

COVID-19 is more deadly in people with obesity—even if they’re young

Wadman M, Science Sep. 8, 2020

In Germany 67% of men and 53% of the women are overweight. ¼ of the population is obese.

OECD Health Statistics 2018
The problem of `overweight´ is underestimated
Limited adipose tissue expandability ➔ ectopic fat in organ and tissue masses

Source: positivemed.com
“Holding people responsible for their obesity detracts attention from the obesogenic systems that produce obesity.”

The Global Syndemic of Obesity, Undernutrition and Climate Change

Consumption of ultraprocessed food $\Rightarrow +500 \text{ kcal/d energy intake}$
NOVA classifies all foods and drinks into four clearly distinct groups

Unprocessed or minimally processed foods include fresh, dried, or frozen vegetables, grains, legumes, fruits, meats, fish, eggs, and milk. They are the basis of healthy dishes and meals.

NOVA 2

Processed ingredients include sugars, fats, oils, and salt. They are used to prepare foods, and to make diverse, nourishing and enjoyable dishes and meals.

NOVA 3

Processed foods include simple breads and cheeses, and canned plant or animal foods. In moderation these foods can be part of healthy diets.
Ultra-processed foods are not modified foods but formulations of industrial ingredients and other substances derived from foods, plus additives. They mostly contain little if any intact food.

The purpose of ultra-processing is to create products that are convenient (durable, ready-to-eat, -drink or -heat), attractive (hyper-palatable), and profitable (cheap ingredients).

Their effect all over the world is to displace all other food groups. They are usually branded assertively, packaged attractively, and marketed intensively.
Characteristics of ultraprocessed food

Recombinant artificial ultraprocessed food made of food ingredients A, B, C ... + cosmetic additives (± real foods)

Addition of purified (loss of protective bioactive compounds) and cosmetic (markers of ultra-processing) ingredients/compensatory additives:
- Texture agents
- Taste enhancers
- Dyes
- Aromas
- Sweeteners
...

A higher consumption of ultra-processed foods (>4 servings daily) was independently associated with a 62% relatively increased hazard for all cause mortality.

For each additional serving of ultraprocessed food, all cause mortality increased by 18%.


15% age-standardised proportion of deaths attributable to individual dietary risks in 2017

Western Europe

Adverse effects of ultra-processed food

Choose high quality carbohydrate
- refined starch and added sugar ↓
- low GI, low GL
- high fibre ↑
- sugary drinks ↓

Sustainable flexitarian diet
SFA, energy dense animal food ↓

Avoid highly processed energy dense convenience foods
Low in: fibre, prebiotics, phenolics, minerals, vitamins and other bioactives...
High in: starch and sugar, sodium, preservatives, additives, SFA, trans-fats, non-nutritive sweeteners, emulsifiers, thickeners
Apparent food variety

>50% of calories from plant based food are from rice, maize and wheat (FAO 1995)

**Noodle-Snack „chicken type“**

- wheat, salt, sugar, soy sauce, spices, flavour enhancer,
- acidity regulator, thickener

**Chicken Nuggets**

- Chicken meat (corn fed)
- corn starch, cornmeal (panade)
- acidifier, emulsifier from corn, deep-fried in corn oil
- + sauce made from corn syrup
FAO: since the beginning of the last century >75% loss of genetic crop diversity

250,000 plant species:
- >30,000 edible plant species
- ~7,000 have been used for food
- 120 cultivated today
  - 9 provide >75% of food
  - 3 provide >50% of food

Green Revolution
- crop diversity ↓
- fertilizer ↑
- pesticides ↑
- water use ↑
- soil contamination ↑
- ecosystem biodiversity ↓
- ...

external costs to industrial farming

FAO Bifani (2017)
“The current food systems are becoming more industrialised, globalised, and dominated by large actors capable of economies of scale and of maintaining long supply chains.”

The Global Syndemic of Obesity, Undernutrition and Climate Change

THE LANCET

The best science for better lives
A healthy dietary pattern is more than the sum of individual foods.

"...ultraprocessed products are the symbols of the Western reductionist thinking, ... If the food is only a sum of nutrients then why not splitting or cracking the food then recombine the ingredients in endless combinations. It is however to forget that the whole is greater than the sum of the parts...

Anthony Fardet. Advances in Food and Nutrition Research, Vol 85; 2018
Thanks!

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