Why it took so long to define a healthy diet.

W Philip T James

Honorary Professor London School of Hygiene and Tropical Medicine









Response to food supplements in stunted children



Recalculated by Celia Petty (PhD, London 1987) from Corry Mann HC. In "Diets for boys during the school years". MRC Spec.Rep.Series 105, HMSO, 1926.

Developing farm & health policies post 2nd World War

- 1. Early 20th Century dietary studies revealed the importance of essential vitamins and minerals.
- 2. UK and US diet trials with short children showed that extra animal protein stimulated height growth.
- 3. Energy rich foods were needed to sustain both well being and activity of the whole population.
- 4. So adequate meat, milk and fat e.g. butter and oils were important in the diet; (enough vegetables/fruit to avoid scurvy and other vitamin deficiencies).
- 5. Massive experiment with UK rationing during World War II based on these concepts was v. successful
- 6. Post war global (+EU) established priority policies for meat, milk, fats, oils (and sugar) production.

British wartime feeding based on novel nutritional concepts





Cod liver oil

Orange juice



Milk

The Post-War transformation of agriculture: an issue of fundamental national security



US farm subsidies \$ billion



In 2010 was still \$20 billion but with price support for products = £170 billion. Direct farm subsidies currently about \$25 Billion per year

European CAP 2017 payments Total CAP = € 58.889 Billion

Direct payments to specific industries:

	€ Million
1. Olive oil	43
2. Fruit and vegetables	995
3. Wine	1,012
4. Milk and milk products	468
5. Beef and veal	24
6. Sheep and goat meat	4
7. Pig meat, eggs, poultry etc.	91
Market measures	3,001

Rural Development

€14,337

Nutritionists advocate a "balanced diet": the emergence of coronary heart disease in the Western world



UN Commission Report: Food & Nutrition Bulletin, 2000.

Kromhout et al's new 2018 analysis of 50 year follow up of CHD deaths in relation to the saturated fat intake of the different communities in the Seven Country study (EJCN).



This report contains the collective views of an international group of superis and does not receasedly represent the decisions or the stated policy of the World Health Organization.

Prevention of coronary heart disease

Report of a WHO Expert Committee

World Health Organization Technical Report Series 678

World Health Organization, Geneva 1982

The First (1982) WHO Technical report (TRS 678) on Diet & Chronic Diseases – in this case Coronary Heart Disease

> Joint Chairs: Geoffrey Rose & Henry Blackburn.

WHO dietary recommendations in 1982 (based on preventing coronary heart disease TRS 678)

- Dietary fat "20-30%" but Japanese on <10% Goal ends up at 15-30%
- Saturated fat: average <10%
- Polyunsaturated fat >3%
- Increase carbohydrates "to simulate populations with little CHD": "These diets are predominantly complex carbohydrates deriving from vegetables, fruit, whole grain and legumes high in dietary fibre".
- "The prevention and correction of obesity is very important...in order to achieve an optimum total cholesterol". So low fat diet emphasized.

The dominance in the number of deaths from coronary heart disease in those with average levels of serum cholesterol – not those in the high risk group with high cholesterol levels



Source: WHO, Technical Report Series 678, 1982

Difference between individuals in their response to both saturated fat intake and dietary cholesterol on tightly controlled diets: differences mostly genetic.



Katan MB et al Congruence of individual responsiveness to dietary cholesterol and to saturated fat in humans. J Lipid Res. 1988 ;29:883-92

The keys to success in the food business and in obesity and chronic disease (NCDs) prevention

 Marketing 	MARION NESTLE
• Price	POLITICS
 Availability 	CALIFORNIA HOW THE FOOD INDUSTRY INFLUENCES NUTRITION AND HEALTH

The natural history of childhood overweight/obesity using IOTF cut-offs in Australia over a century and recent increases in lower income countries



Healthy

World Health Organization

Regional Office for Euro

WHO Regional Publications, European Series, No. 24

The first (1986) WHO EURO Report on diet and health: avoidance of deficiencies and adult chronic diseases

> Population goals + goals for high risk groups"

Complex carbohydrates Protein Sugar Total fat Saturates fat P/S ratio Dietary fibre Salt Cholesterol Water fluoride

James WPT, Ferro-Luzzi A, Isaksson B, Szostak WB. WHO EURO no 24.1986. 1st WHO Nutrition report on both malnutrition and chronic diseases. WHO Technical Report Series No797 in 1990 The first dealing with both dietary deficiencies and adult chronic diseases

Diet, nutrition, and the prevention of chronic diseases

Report of a WHO Study Group

> Rold Library Rowert Notestati Institute Proteinum, Abacturen Aug 2028

Technical Report Series 797

World Health Organization, Geneva 1990

Continued the principle established for coronary heart disease by Rose and Blackburn in 1981 that the average nutrient or dietary intake was the goal to be specified encompassing the variation in needs of all adult men women and children of all sizes and activities.

Global policies on diet for WHO 797 report in 1990: developing a new 400 g/d standard for vegetable and fruit intake: a mixture of meticulous metabolic studies & evaluation of the Traditional Mediterranean Diet

Faecal weight responses to an extra 20g "fibre" intake in a tightly controlled metabolic study (Southgate method for fibre on an industrial scale).





The WHO TRS 797 Report in 1990 on diet, nutrition and the prevention of chronic diseases: lower and upper average population nutrient goals

Population limits: average intakes

Nutrient	Lower	Upper
Energy	Sufficient for ne activity r	eds with full ange
1.Total Fat % Energy	15%	30%
2. Saturated fats %E	0%	7 %
3. Polyunsaturates % E	3%	10%
4.Dietary cholesterol mg/d	0	300
5. Total CHOs % E 6. Vegetables and fruit g/d	50% >400 g	75% ?
7. Fibre: a) as NSP g//d b) as total dietary fibre	16 g 27 g	24 g 40 g
 8. Free sugars 9. Protein % Energy 	<mark>0 %</mark> 10%	<mark>10 %</mark> 15 %
10.Salt g/d	Undefined	6g

An assessment of nutritional factors affecting the BMI of a population: an FAO assessment for the WHO 797 expert technical report in 1990



Original data: Francois PJ & James WPT. Eur J Clin Nut 1994 48:S110 - S114



WHO/FAO Expert Consultation TRS 916 in 2003 Update of original WHO 797 report



Convincing evidence that vegetables and fruits (including berries) prevent cardiovascular diseases

Probable evidence that fruits and vegetables prevent cancers of the oral cavity. oesophagus, stomach and colo-rectum.

Population average goal still set at ≥ 400g per day



COMMITTEE ON AGRICULTURE

Seventeenth Session

Rome, 31 March-4 April 2003

Information Note on a Joint WHO/FAO Expert Consultation on Diet, Nutrition and the Prevention of Chronic Diseases

FAO Focus

- Great opportunities for fruit and vegetable production : need increased horticultural production, R&D, extension and training.
- Overcome problems of distance to urban markets where urban poor unable to have access - need better storage, transport ,
- Fish production fish farms need to increase markedly
- Meat, dairy, edible oils and sugars: "implications for normative and technical assistance work"



The fall in the cost of agricultural commodities 1960-2000



Source: World Bank (2001a)

Based on world market prices related to 1990



Change in food prices, 1985–2000 (real dollars)



Source: USDA ERS FoodReview, Vol. 25, Issue 3. Converted to real dollars.

Government support for producing grain and oilseed crops comes in many forms, from money invested in public universities and government agencies to research such crops, to subsidy payments that make up for low prices, to continued promises of increased export markets for these crops.

Energy dense foods (kcals/100g) cost less (€ per 1000kcals)



Darmon N, Darmon M, Maillot M, Drewnowski A. A nut. Dens. Std.for veg.& fruits: nutrients per cal. & nutrients per unit cost. J Am Diet Assoc. 2005;105:1881-7

livestock's long shadow

environmental issues and options



FAO's report 2006 on Livestock's Long Shadow

 Livestock Production accounts for 70% of agricultural Land use and 30% of the planet's land surface

2. 18% equivalence of global greenhouse gas as CO2 production

3. 37% anthropogenic methane (23 times worse than CO2.)

- 4. 64% of nitrous oxide with 296 times the global warming impact of CO2.
- 5. Probably greatest planetary use of water resources.

2nd Expert Report of the World Cancer Research Fund in 2007 with subsequent specific cancer updates

Probable decreased risk with vegetables and fruits:



Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective

Exposure	Cancer site
1.Non – starchy Veg, 2. Allium Veg.	Mouth, pharynx, Larynx, Oesophagus, stomach. Stomach
3. Garlic	Colorectum
4. Fruits	Mouth, Pharx, Larynx, Oesoph., Lung, Stomach
5. Folate foods	Pancreas
6. Carotenoids	Mouth, Phar., Lar., Lung,
7. β-carotene	Oesophagus
8. Lycopene foods	Prostate
9.Vit. C foods	Oesophagus
10 Selenium foods	Prostate



Projected food needs contributing to average global food energy intakes: major projected increases in meat, sugar, oils + cereals for animal feed.

Source: FAO data and projections

The development of a UN plan to combat the Non – Communicable Diseases (NCDs) in 2011

1. 2007. April. Trinidad : CARICOM Meeting of 16 Prime Ministers of the Caribbean on NCDs with public health , economic implications and nutritional causes of chronic diseases considered with a determination to bring the NCD problem to the UN General Assembly.

2. 2008. (British) Commonwealth Heads of Government agree to Caribbean Prime Ministers proposal to back a Heads of Government Meeting at the UN General assembly to combat NCDs

3. 2009. UN. Economic and Social Council Meetings. Agree societal implications of rising NCD epidemic serious and in need of remedies

4. 2011. April. Moscow. Preparative meeting on the medical aspects and remedies for NCDs.

5. 2011. September. UN General Assembly. Prime Ministerial responsibility for inter-sector remedies.



Human-induced soil degradation in the world



Conclusions

- 1. Now overwhelming evidence of benefit of vegetable and fruit intakes. Quantitative analyses need improving.
- 2. Policy problems of implementing major changes in the food chain.
- 3. "Health Education" has been tried for 30+ years with very modest results indeed.
- 4. Need European application of Finland policy: all vegetables and a salad bar routinely provided "free" in every canteen and restaurant: cost automatically included with main meal: 3 fold increase in veg. consumption in men over 15 years.
- 5. Major changes needed in agriculture/food pricing policies to reduce beef, lamb, pork intake.
- 6. Medical profession have a role with explicit advice:

a) pregnancy b) weaning c) avoid soft drinks/fast foods d) routine repeated clinical screening/advice e) medical conditions e.g. H/T, cancer screening; elderly assessment.