

New Foods & New Knowledge: impact of technology on our health.

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	New Foods	New Knowledge
GO		
Carbohydrate	Artificial sweeteners HFCS from starch	White vs brown sugar, molasses Glycemic index: Complex carbohydrates Fiber – soluble & insoluble Value-added - gari, fufu, noodles, chips
Fats & Oil	Trans-fats – margarine and heating non-saturated fats Canola – bred and GMO - refined, bleached and deodorized using hexane-hydrogenated	Essential oils - aromatherapy Omega-3 in fish, purslane, walnut, avocado etc MCFA - coconut oil Unstaturated vs saturated fats
GROW		
Meat	antibiotic-treated industrial farms transgenic meat and fish	Essential amino-acids Freshly-killed, salted, dried meat
Other protein sources	Alternative milk eg soya milk plant-based meat Cultured, reconstructed or lab-grown meat	Skimmed milk, condensed milk. Nuts and pulses Complete amino acids – meat, rice and peas, moringa
GLOW		
Nutrients for health	Breeding plants to be sweeter – decrease in polyphenols and inc in lectins Biofortification Medical drugs Nutraceuticals: vitamin pills; lycopene pills, fiber pills etc Extended storage – wax cover miRNA drugs	Phytocomponents – lycopene, polyphenols, curcumin, aloin, capsaicin etc Bioactivity of vegetables, fruits, herbs, spices : anti-microbial, anti-oxidant, acid/alkali balance, anti-inflammatory, anti-cancer Discovery of miRNA: how herbs and spices affect health at genetic level Essential carotenoids – green leafy veg Nutrient-rich plants - noni, moringa, aloe; yeast extract Extended storage – pickled, dried, frozen Effect of obesity and inflammation on cancer dev
Non-food components of health	Food additives eg MSG; preservatives, food colouring; Processed foods Drugs, Vaccines, Antibiotics	Herbs and spices Prebiotics, Probiotics, Fermented foods, Yoghurt
How grown	Machine, Bred, GMOs, inorganic fertilizers, Pesticides = dead soil	Local, original genetics, organic farming, permaculture, bioinoculants = living soil
Exercise	Sedentary, drive everywhere	Active
GMOs	yes	no
Terms used	Nano Biotechnology, Medical Biotechnology, Bioprocess Engineering, Biochemical Engineering, Biomaterials, Plant Biopharming, Metabolic Engineering, Analytical Biotechnology, Biocatalysis, Synthetic Biology, Systems Biology, Downstream Processing, Industrial Biotechnology.	Organic farming, Permaculture, Plant tissue culture, Biofarming, Green Pharmacy, Ethnobiotechnology, Herbs, Complementary and Alternative medicine, Tailoring biotechnology.

Look at: <https://ourworldindata.org/burden-of-disease>