



**Medical Academy named after S.I.
Georgievsky**

**Social problems of nutrition biotechnology.
Diseases caused by the biochemical
features of the food. The meaning of
vitamins, avitaminosis and hypovitaminoses.**

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192B
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Social problem of Nutritional biotechnology

FoodGenes inserted in the genetically modified food may get immune to the pesticides and insecticides with time. In the case of certain people, the immune system may not tolerate the desired genes inserted through genetically modified food.



Impact of biotechnology on humans

The panel concluded the main societal benefits of food biotechnology were: Increased agricultural production. Reduced loss due to pests, drought, and disease. Increased environmental sustainability.

Negative impact of biotechnology

What are some negative impacts of? The primary environmental concerns in agricultural biotechnology are: 1) gene flow, or the spread of transgenes into the environment; 2) negative impact on non-target species; 3) development of pest resistance; 4) creation of superficial organisms; or 5) tempering with Nature or God's creation. ccreated

Disease caused by biochemical features of the food

Biochemical diseases are genetic diseases that affect one of the biochemical processes in the human body. Biochemical processes determine the development and growth of organs and the maintenance of their function. Some of these functions are directly related to nutrition and others are not.

Disease caused by biochemical features of food

Metabolic disease
Metabolism disease
Diabetes mellitus.
Hyperthyroidism.
Cystic fibrosis.
Hypothyroidism.
Osteoporosis.



The Meaning of vitamins

any of a group of organic compounds which are essential for normal growth and nutrition and are required in small quantities in the diet because they cannot be synthesized by the body.

9 water-soluble vitamins

Vitamin B1 (Thiamine) ...

Vitamin B2 (Riboflavin) ...

Vitamin B3 (Niacin) ...

Vitamin B5 (Pantothenic acid) ...

Vitamin B6 (Pyridoxine) ...

Vitamin B9 (Folic acid) ...

Vitamin B12 (Cobalamin) ...

Vitamin H (Biotin)

fat-soluble vitamins

Vit., A

Vit. D

Vit. E

Vit. K



Sources of Essential Vitamins

Vitamin	Where to Find It
A	Beef liver and other organ meats; salmon; green, leafy vegetables, orange and yellow vegetables; fruits, including cantaloupe, apricots, and mangos; dairy products
B1 (thiamine)	Whole grains, meat (especially pork), fish, legumes, seeds, nuts
B2 (riboflavin)	Cheese, almonds, beef and lamb, mackerel, eggs, pork, mushrooms, sesame seeds, spinach
B3 (niacin)	Dairy, eggs, enriched breads and cereals, fish, lean meat, legumes, nuts
B5	Avocado, broccoli, kale, cabbage, eggs, legumes, milk, mushrooms, organ meat, poultry, potatoes, yeast
B6	Beans, poultry, fish, and some vegetables and fruits, especially dark leafy greens, papayas, oranges, and cantaloupe
B12	Clams, liver, fortified breakfast cereal, trout, salmon, tuna, haddock, beef, milk
Biotin	Red meat, salmon, halibut, liver, egg yolks, cauliflower, lettuce, cucumbers, spinach
Folate	Beans, lentils, spinach, asparagus, lettuce, avocado, broccoli, mango, oranges
C	Citrus fruits, peppers, guava, kale, broccoli, tomatoes, peas
D	Cod liver oil, swordfish, salmon, tuna, orange juice, milk, yogurt, sardines, liver, eggs
E	Nuts (peanuts, hazelnuts, and especially almonds) and seeds (like sunflower seeds), green vegetables

Avitaminosis

a condition resulting from a deficiency of one or more particular vitamins



Avitaminosis

Avitaminosis is a clinical condition caused by the lack of vitamins. The symptoms of lack of vitamin depend on the particular type of vitamin. Vitamin deficiency can be caused by (1) poor **diet**; the most common cause of hypo- or avitaminosis is the lack or insufficient quantity of fresh and varied food.

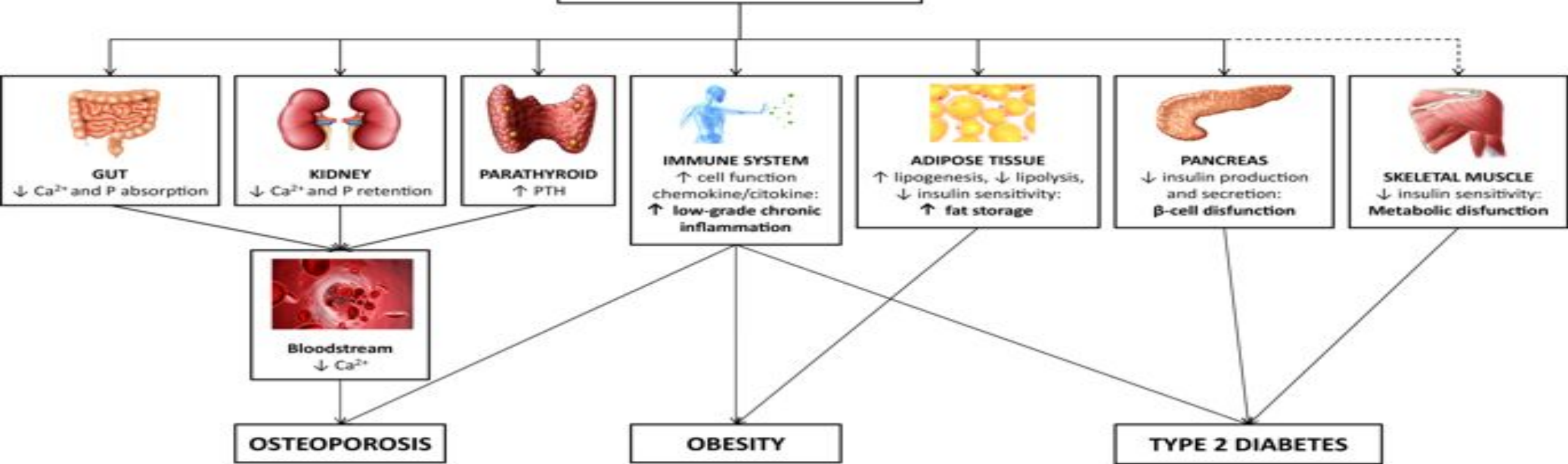
Vitamin/ Mineral	Deficiency disease/disorder	Symptoms
Vitamin A	Loss of vision	Poor vision, loss of vision in darkness (night), sometimes complete loss of vision
Vitamin B1	Beriberi	Weak muscles and very little energy to work
Vitamin C	Scurvy	Bleeding gums, wounds take longer time to heal
Vitamin D	Rickets	Bones become soft and bent
Calcium	Bone and tooth decay	Weak bones, tooth decay
Iodine	Goiter	Glands in the neck appear swollen, mental disability in children
Iron	Anaemia	Weakness



Hypovitaminoses

A disorder that is caused by the deficiency of a vitamin. The deficiency may result from either suboptimal vitamin intake or conditions that prevent the vitamin's use or absorption in the body

HYPOVITAMINOSIS D



LPI Rx for HEALTH



WATER

WOMEN: ~ 9 CUPS
MEN: ~ 13 CUPS



**UNSWEETENED
COFFEE OR TEA**
(OPTIONAL)



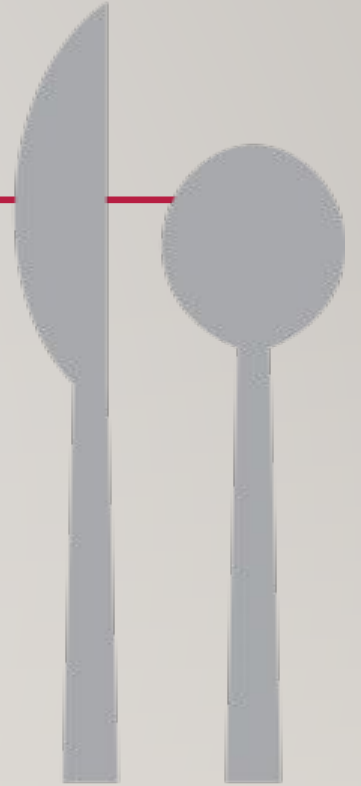
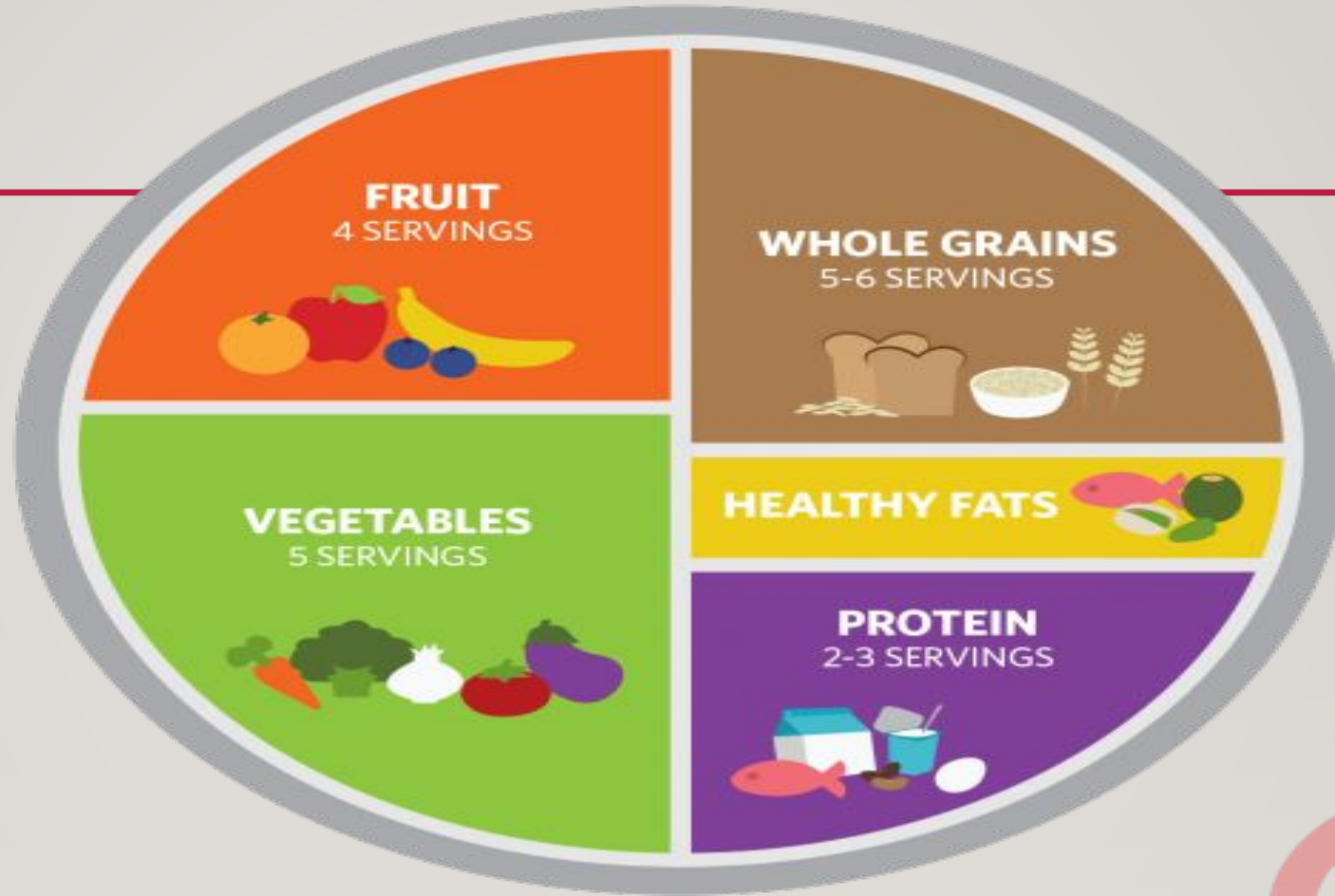
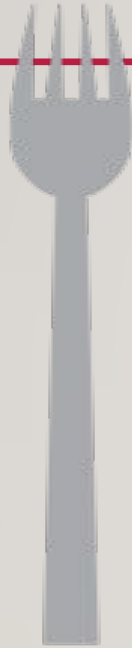
ALCOHOL

WOMEN: 0-1 DRINK
MEN: 0-2 DRINKS
(OPTIONAL)



SUPPLEMENT OPTIONS

MULTIVITAMIN/MINERAL
VITAMIN B₁₂ • VITAMIN C
VITAMIN D • CALCIUM
MAGNESIUM • FISH OIL
LIPOIC ACID • L-CARNITINE



REFINED GRAINS
SATURATED FAT
TRANS FAT
HIGHLY PROCESSED
"JUNK" FOOD
SUGAR-SWEETENED
BEVERAGES

Healthy Body Weight and Daily Physical Activity

**THANK YOU FOR
YOUR ATTENTION**

