D.PHARM • FIRST YEAR

Pharmacognosy

CHAPTER 9

Herbs as Health Food



ENGLISH CHAPTER NOTES

DIPLOMA IN PHARMACY

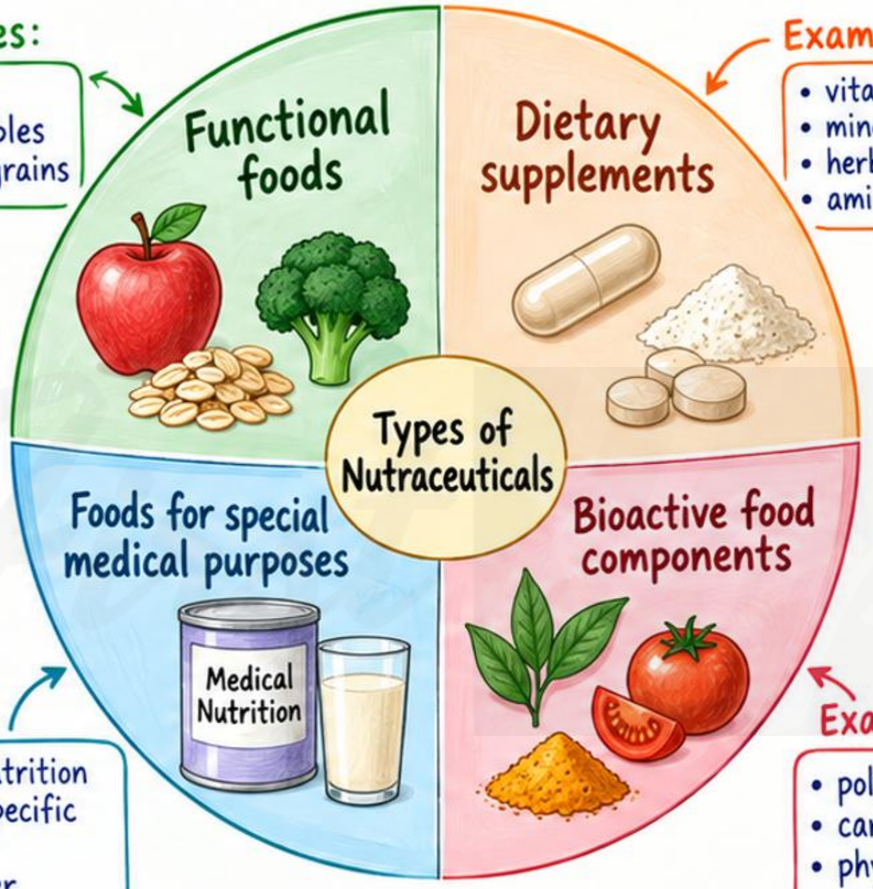
NUTRACEUTICALS: FOOD AND HEALTH

DEFINITION

Nutraceutical is a broad term formed from nutrition and pharmaceutical. It commonly refers to foods, food components or supplements used to support health or provide physiological benefit.

COMMON GROUPS

- Functional foods – ordinary foods with additional demonstrated benefit
- Dietary supplements – concentrated nutrients or bioactive substances
- Fortified foods – nutrients added to improve intake
- Foods for special medical purposes – used under medical supervision for specific nutritional needs



Examples:
- fruits
- vegetables
- whole grains

Examples:
- vitamins
- minerals
- herbal extracts
- amino acids

Examples:
- enteral nutrition
- disease specific formulas
- used under medical supervision

Examples:
- polyphenols
- carotenoids
- phytosterols
- dietary fibre

FORMS



Food • beverage • powder • tablet • capsule

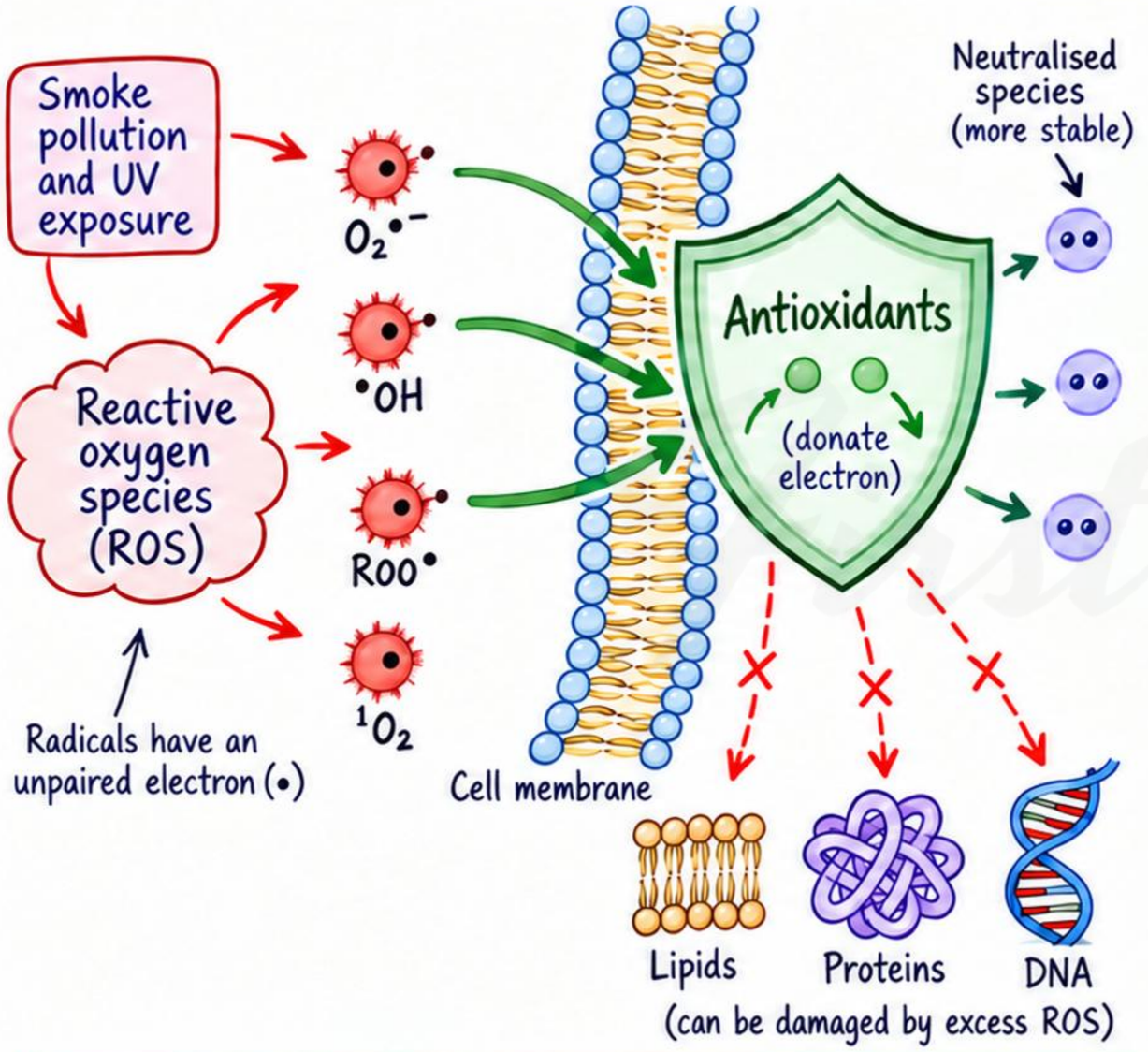
POSSIBLE ROLES

- Correct nutrient deficiency
- support gut function
- supply fibre or essential fatty acids
- provide antioxidant compounds

SAFE USE

Benefit depends on ingredient, dose and evidence. Check quality, interactions, allergy, pregnancy and disease status. Nutraceuticals do not replace a balanced diet or prescribed treatment.

ANTIOXIDANTS AND OXIDATIVE STRESS



OXIDATIVE STRESS

Reactive oxygen species are formed during normal metabolism and by factors such as smoke, pollution and UV exposure. Excess production can damage lipids, proteins and DNA.

ANTIOXIDANTS

Substances that slow oxidation by safely reacting with radicals or supporting antioxidant defence systems.

IMPORTANT EXAMPLES

Vitamin C • vitamin E • carotenoids • polyphenols • flavonoids • selenium-dependent enzymes

FOOD SOURCES



ROLE

Dietary antioxidants contribute to normal cellular protection as part of a varied diet. The body also uses enzymes such as superoxide dismutase, catalase and glutathione peroxidase.

CAUTION More is not always better. High-dose antioxidant supplements can cause harm or interact with treatment; food sources are generally preferred unless a supplement is indicated.

PROBIOTICS AND PREBIOTICS

PROBIOTICS

- Live microorganisms that confer a health benefit when administered in adequate amounts. Effects are strain-specific.
- **Examples:** selected *Lactobacillus* and Bifidobacterium strains; *Saccharomyces boulardii*.
- **Sources:** validated supplements and some fermented foods.

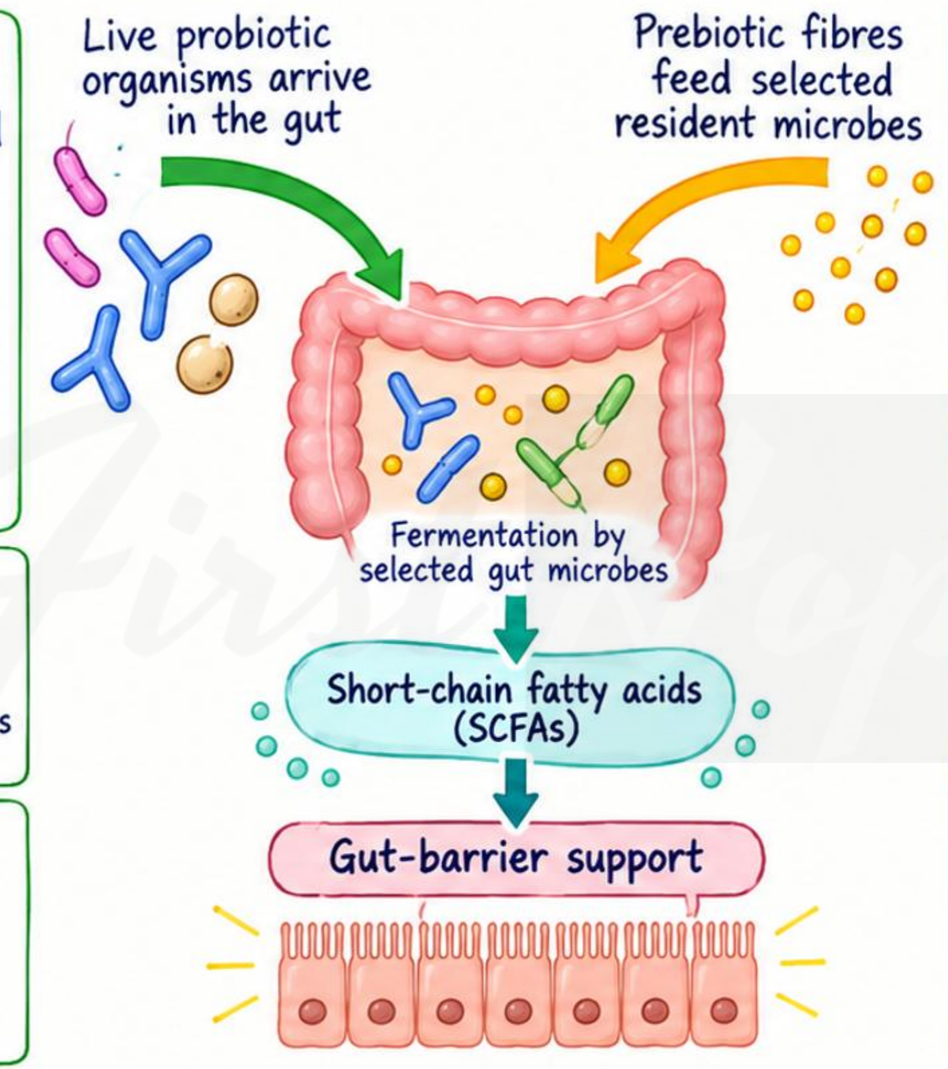
Examples (probiotic organisms)



Sources (probiotics)



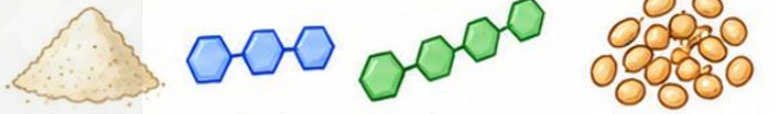
validated supplements and some fermented foods.



PREBIOTICS

- Substrates selectively used by host microorganisms that confer a health benefit. They are not living organisms.
- **Examples:** inulin, fructooligosaccharides (FOS), galactooligosaccharides (GOS), resistant starch.
- **Sources:** chicory, onion, garlic, banana, legumes and whole grains.

Examples (prebiotic fibres)



Sources (prebiotics)



HOW THEY DIFFER

Probiotic = beneficial live microorganism
Prebiotic = food substrate for selected beneficial microbes
Synbiotic = combination designed to work together

POSSIBLE BENEFITS

Gut-barrier support • stool regularity • selected uses in antibiotic-associated diarrhoea

CAUTION

Benefit depends on strain, dose and condition; immunocompromised patients need professional advice.

DIETARY FIBRE

DEFINITION

Dietary fibre includes carbohydrate polymers and associated substances in plant foods that resist digestion in the small intestine and may be partly or fully fermented in the large intestine.

SOURCES



Fruits • vegetables • legumes • whole grains • seeds • nuts

SOLUBLE OR VISCOUS FIBRE

Examples: pectin, beta-glucan, gums, mucilage

- May form a gel
- Can slow nutrient absorption
- Some types help lower LDL cholesterol
- Many are fermented by gut microbes

INSOLUBLE FIBRE

Examples: cellulose, some hemicelluloses, lignin

- Adds stool bulk
- Supports bowel movement and regularity

BENEFITS

- Constipation prevention
- satiety
- improved glycaemic response
- microbiome support

USE WELL

Increase gradually and take adequate fluid. Excess fibre may reduce absorption of some medicines if taken together.

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