

Role of Functional Foods in Management of Cancer and CVDs

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Sources & functions of functional foods in cancer prevention

α -Carotene	Yellow-orange and dark-green vegetables	In moderate dose increase enhance gap junctional intercellular communication
β -Carotene	Green leafy vegetables and orange and yellow fruits and vegetables	In moderate dose increase enhance gap junctional intercellular communication
Lycopene	Tomatoes, water melon, apricot, peaches	Lycopene is more potent than α and β -carotene in inhibiting the cell growth of various human cancer cell lines
Lutein	Dark green leafy vegetables	Lutein is efficient in cell cycle progression and inhibit growth of a number of cancer cell types
Flavonoids	Synthesize in plants	Efficient in prevention or treatment of many cancers

Cardiovascular diseases

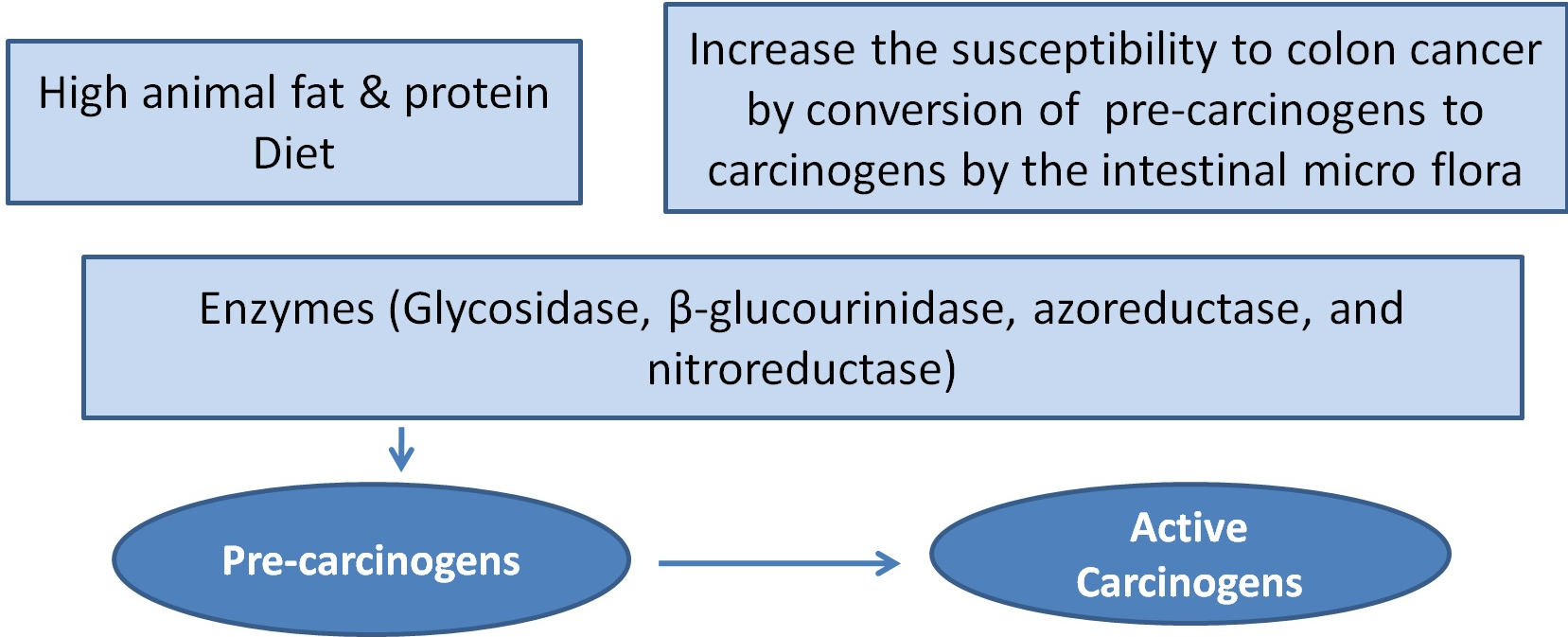
- Cardiovascular diseases (CVD) including heart disease and stroke
- Cardiovascular diseases and tumors, together, contribute to more than 60 % of deaths in economically-developed countries
- Reactive oxygen species (ROS) in the pathogenesis of both acute and chronic heart diseases as a result of cumulative oxidative stress to minimize hypertension
- Risk includes attaining and maintaining a healthy body weight; consuming a diet rich in calcium, phosphorus, and magnesium; and consuming sodium in moderation

(Dwyer, 1995)

Potential cardiovascular protective effects of functional foods

Potential Mechanism:	Lowering blood cholesterol
Nuts	Tocopherols, omega-3 fatty acids
Legumes	- Fiber and polyphenols
Fruits and vegetables	- Fiber (pectin)
Margarine	- Phytosterols
Fish oil	- Omega-3 fatty acids
Whole grains	- Fiber and phytochemicals
Soy proteins	- Genistein and daidzein
Dark chocolate	- Flavonoid
Potential Mechanism:	Inhibition of LDL-C oxidation
Fish	- Omega-3 fatty acids
Tomato	- Lycopene
Green leafy vegetables, fruits	- Carotenoids

Anticancer effects



Use of *L. acidophilus* & *L. casei* supplementation in humans helped to decrease levels of these enzymes

Case Study



nutrients



Review

Functional Foods and Lifestyle Approaches for Diabetes Prevention and Management

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Abstract: Functional foods are defined as foods associated with physiological

Abstract

- A regular consumption of **functional foods** may be associated with enhanced anti-oxidant, anti-inflammatory, insulin sensitivity, and anti-cholesterol functions, which are considered integral to prevent and manage T2DM
- **Fruits, vegetables, oily fish, olive oil, and tree nuts:** serve as a model for functional foods based on their natural contents of nutraceuticals, including polyphenols, terpenoids, flavonoids, alkaloids, sterols, pigments, and unsaturated fatty acids.
- **Polyphenol-rich herbs:** such as coffee, green tea, black tea, have shown clinically-meaningful benefits on metabolic and microvascular activities, cholesterol and fasting glucose lowering, and anti-inflammation and anti-oxidation in high-risk and T2DM patients.