

Major biological effects of herbs
used in the human diet;
characteristics of an optimal
nutritional regime in regard of
herbal constituents of diets

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Williams K. A., Patel H. (2017): Healthy Plant-Based Diet.
Journal of the American College of Cardiology
70 (4) 2017: 423-425.

HEALTHY PLANT-BASED DIET

Healthy plant-based diet

- Plant-based diet – definitions vary:
 - exclusion of all animal products
 - mainly vegetables, fruits, fruit juice, cereal, beans, including fish, poultry, yogurt
 - reduce or eliminate highly refined plant foods such as white flours, sugars and oils

Healthy plant-based diet

- randomized, controlled trials and epidemiological studies:
 - plant-based diets associated with:
 - improvement in cardiovascular disease events
 - lowering risk factors such as
 - diabetes
 - hypertension

Healthy plant-based diet

- ***Song et al.'s (2016) prospective cohort study:***
 - higher intake of animal protein (processed and unprocessed red meat, dairy, poultry, eggs) was positively associated with mortality
 - high intake of plant protein reduced mortality
- ***Kwok et al.'s (2014) study:***
 - vegetarians – 29% lower risk of coronary heart disease

Healthy plant-based diet

- **Healthy plant-based foods:**
 - whole grains as the main form of carbohydrate
 - unsaturated fats
 - fruits
 - vegetables
 - omega-3 fatty acids

Mourouti N. et al. (2017)

Optimizing diet and nutrition for cancer survivors: A review.

Maturitas 105 (2017): 33-36.

OPTIMIZING DIET AND NUTRITION FOR CANCER SURVIVORS: A REVIEW

Optimizing diet and nutrition for cancer survivors

- Recommendations of World Cancer Research Fund (WCRF), American Institute for Cancer Research (AICR), American Cancer Society (ACS):
 - due to lack of sufficient research evidence follow recommendations for primary cancer prevention
 - cancer survivors should eat mostly foods of plant origin
 - at least 5 portions / servings (400 g) of non-starchy vegetables and fruit every day
 - unprocessed cereals (grains) and/or pulses (legumes) with every meal
 - limit their intake of refined starchy foods
 - intake of red meat should be limited to less than 500 g a week
 - little if any processed meat should be consumed
 - avoid salt-preserved, salted or salty foods
 - energy-dense foods as well as fast foods should be consumed sparingly
 - sugary drinks should be avoided
 - alcohol should be limited to no more than 2 drinks a day for men and 1 drink per day for women

Optimizing diet and nutrition for cancer survivors

- biochemical mechanisms by which diet can affect tumor pathogenesis:
 - fruits, vegetables: sources of micronutrients, other bioactive components, including antioxidants (e.g. vitamin C and E, folic acid, carotenoids, isothiocyanates, flavonoids etc.)
 - anticancer properties
 - all these compounds act against cancer through their antioxidant
 - anti-mutagenic
 - anti-proliferative properties
 - stimulate the immune system
 - modulate hormone concentration and metabolism

Cooper E. L., Ma M. J. (2017):

Understanding nutrition and immunity in disease management.

Journal of Traditional and Complementary Medicine 7 (2017): 386-391.

UNDERSTANDING NUTRITION AND IMMUNITY IN DISEASE MANAGEMENT

Nutrition and immunity in disease management

- Nutrition plays an important preventative role, especially among aging populations
 - exhibit decreased immunity and
 - greater susceptibility for diseases such as
 - hypertension
 - cancer
 - type 2 diabetes
 - cognitive impairments

Nutrition and immunity in disease management

- **Green tea:**
 - increases life span and stress resistance
 - protects against angiogenesis and tumor formation
 - polyphenolic catechins – prevent neurodegenerative and heart diseases
 - l-theanine (unique amino acid) – antioxidant, promotes longevity



Nutrition and immunity in disease management

- **Cranberries** (*Vaccinium macrocarpon*):
 - increases host innate immunity and resistance to infection
 - antioxidant
 - antimicrobial



Nutrition and immunity in disease management

- **Honey:**

- extensively researched as natural anticancer agent
- apoptotic
- antiproliferative
- antitumor
- antioxidant
- anti-inflammatory
- immunomodulatory



Nutrition and immunity in disease management

- **Curcumin:**

- anti-inflammatory
- antioxidant
- as inflammation and oxidative stress are tied to a variety of diseases as well as the process of aging, curcumin has many potential biomedical applications



Nutrition and immunity in disease management

- **Pomegranate:**
 - treatment of chronic inflammatory diseases – anti-inflammatory
 - antioxidant
 - anti-obesity
 - anti-tumoral
 - main active compounds: ellagic acid, ellagitannins, punicalic acid, flavonoids, anthocyanidins, flavonols, flavons
 - medicinal properties of constituents are most effective in conjunction with each other rather than in isolation



Nutrition and immunity in disease management

- **Resveratrol:**

- polyphenol (e.g. grapevines, berries)
- antioxidant
- anti-inflammatory
- significant therapeutic potential for treating inflammatory disorders
- inhibits
 - carcinogenic activity
 - microbial activity



Nieber (2017): The Impact of Coffee on Health

Planta Med. 83: 1256-1263.

- **Coffee:**
 - may help to prevent several chronic diseases, including type 2 diabetes mellitus and liver disease
 - most prospective cohort studies: have not found coffee consumption to be associated with a significantly increased cardiovascular disease risk

