

# **Significance of Functional Foods in Management of Various Diseases**

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## WHY WE NEED FUNCTIONAL FOOD ?

- Trends in demographics and socio economic changes is due to the functional foods with health benefits.
- It increases the life expectancy & quality of life, as increase costs of health care hence stimulated governments , researchers, health professionals & the food industry to see changes.
- Functional foods have the potential to improve health, well being reduce the major diseases such as CVD, cancer and osteoporosis.
- It will make a positive contribution to health and well being.

# Significance of Functional Foods

Functional foods helps :

- To improve the regular stomach and colon functions (pre- and probiotics) or “improve children’s life” by supporting their learning capability and behaviour.
- Functional food is designed for reducing an existing health risk problem such as high cholesterol and high blood pressure.
- Lactose-free, gluten-free products (Ma kinen- Aakula, 2006).
- New food products with health attributes have raised in popularity because they are believed to offer consumers an increased ability to reduce the risk of certain diseases.

# Health Benefits of Functional Foods

## Maintenance of Health (Enhanced Function)

Gastrointestinal health  
The gut microbiome  
Linear growth in infancy  
Antioxidants – Effects on ageing  
Improved sports performance  
Mental health – Memory

## Reduction of specific illness or deficiency – Disease risk

Calcium - Osteoporosis  
Vitamin A – Night blindness  
N-3 PUFA – Cardiovascular risk  
Folic acid – Spina bifida

## Treatment or Management of illness

**Low fat – overweight**  
**Gluten free – celiacs**  
**Low glycemic index – Diabetes**

# Functional Foods with Health Benefits

Functional foods can be taken in many forms:

- ✓ Some may be conventional foods with bioactive components that can be identified and linked to positive health outcomes.
- ✓ Some may be fortified or enhanced foods, specifically created to reduce disease risk for a certain group of people.
- ✓ Consumers can already select from a wide spectrum of foods that contain functional components either inherently (e.g., soy protein, cranberries) or via fortification (e.g., folate-fortified foods).
- ✓ Health benefits may result from increasing the consumption of substances already part of an individual's diet or from adding new substances to an individual's diet.
- ✓ Alternately, foods that do not naturally contain a substance can be fortified to provide consumers with a broader selection of food sources for a particular component and its health benefit (e.g., calcium-fortified orange juice)

# Functional Foods With Health Benefits

Functional Food	Health Benefits
<b>Fortified foods</b>	
Juices with calcium	Reduce risk of osteoporosis, reduces hypertension
Grains with folic acid	Reduce risk of heart diseases, neural tube birth defects
<b>Enhanced foods</b>	
Beverages and salad dressings with anti oxidants. Phytosterol enriched flavoured milk and phytosterol enriched fruit bar	May support overall health. Especially it can be used for cholesterol reduction
<b>Whole foods</b>	
Oats	Reduces cholesterol
<b>Fruits and vegetables</b>	Reduces risk of certain cancers and heart diseases

# Diabetes and Functional Foods

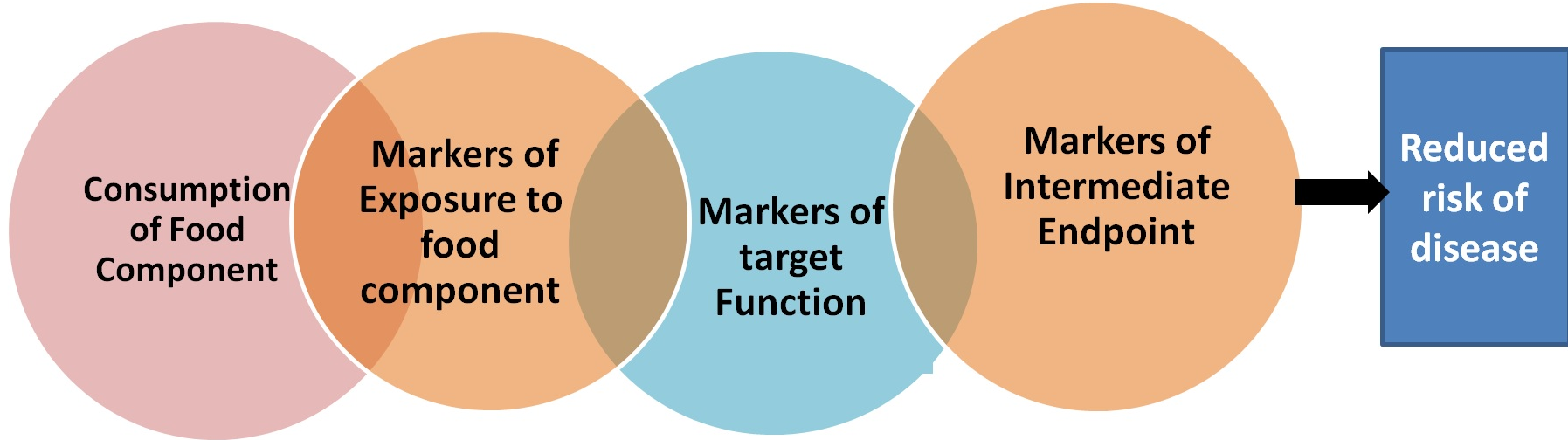
- Diabetes mellitus is a disease in which the body can't regulate the amount of sugar in the blood. There are two types of diabetes:
- **Type 1** diabetes is when the pancreas stops or produces too little insulin, a hormone that regulates blood sugar levels.
- **Type 2** diabetes is when the pancreas produces insulin, but the body is partially or completely unresponsive to react to the insulin.

# Steps for Bringing Functional Foods to Markets





# Study To Assess Functional Foods



# FUNCTIONAL FOODS AND CANCER

- Trends the World Cancer Research Fund and American Institute for Cancer Research examined the relation between nutrition and cancer incidence in a large study and on a global scale. It was suggested that approximately 30 % of cancer cases World wide could be prevented by changes in the dietary habits.
- Functional foods do not aim directly at cancer as an end point but at surrogate end points. Several possibilities that are currently include :
  - Alterations in the characteristics of tissues
  - Cellular phenomena
  - Infection and inflammation
  - Bioactive substances in blood and tissue

## Some Examples of Functional Foods

<b>Functional Food</b>	<b>Benefit to health &amp; well being</b>
Oats( $\beta$ -glucan)	Heart Health
Egg with increased $\omega$ -3 content achieved by altered chicken feed	Heart Health
Fermentation with specific bacteria to yield bioactive peptides	Improved cholesterol levels
Chewing gum sweetened with xylitol instead of sugar	Helps prevent dental caries
Golden rice	Pro-vitamin A
Orange –fleshed sweet potato	Pro-vitamin A

## Functional Food Components available in market

Functional Component	Health Benefits	U.S. Regulatory Status of Claims
Soluble oat fiber	Coronary heart disease	FDA approved health claim
Soy protein	Coronary heart disease	FDA approved health claim
Phytosterol/stanol esters	Coronary heart disease	FDA approved health claim
Calcium	Osteoporosis	FDA approved health claim
Folate-enriched foods	Neural tube defects	FDA approved health claim