

# **ROLE OF FUNCTIONAL FOOD**

## DIETARY SUPPLEMENTS

- Taken by mouth that contains a “dietary ingredient” intended to supplement the diet
- “Dietary ingredients” include: vitamins, minerals, herbs and other botanicals, amino acids, and substances such as enzymes, organ tissue, glandulars, and metabolites.
- Excludes conventional foods or a sole item of a meal or the diet.

### Drugs

- Prescribed to a specific individual by a medical doctor to treat a specific disease because of its active medicinal ingredient that usually has a specific target and an immediate effect

### Nutraceuticals

- Foods, or parts of food, that provide medical or health benefits, includes dietary supplements and functional foods.

### Nutrients

- Traditional vitamins, minerals, essential fatty acids for which recommended intakes have been established
- And other components, such as phytonutrients or bioactives, present in foods for which a physical or physiological effect has been scientifically documented or for which a substantial body of evidence exists for a plausible mechanism but for which a recommended intake and function have not been definitively established.

# FUNCTIONAL FOOD CATEGORIES & EXAMPLES

Conventional foods (whole foods)  
Modified foods

Fortified

Enriched

Enhance

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Medical foods

Foods for special dietary use

- Garlic, nuts, & tomatoes
- Iodized salt
- Folate-enriched breads
- Energy bars, snacks, & yogurts formulated with bioactive components
- Phenylketonuria (PKU) formulas, free of phenylalanine
- Infant foods, weight-loss foods, gluten-free foods, & lactose-free foods

Position of the American Dietetic Association: Functional Foods.

*J Am Diet Assoc. 2009;109:735-746*



## WHY ALL THE INTEREST?

- Rapid advances in science and technology e.g., biotechnology and nutrigenomics
- Evidence linking diet to chronic disease risk
- Desire to attain wellness through diet
- Aging population
- Healthcare costs
- Changes in food laws e.g., label and product claims

IFT Expert Report. *Functional Foods: Opportunities and Challenges*

Reinhardt Kapsak *W.J Am Diet Assoc.* 2011;111(6):805-810

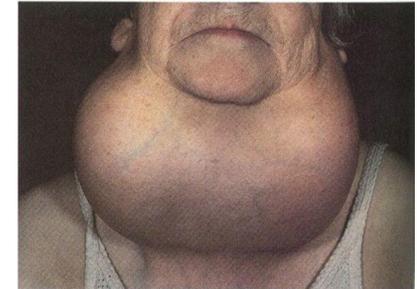
# IFIC 2011 CONSUMER TRENDING SURVEY

- Web survey of a representative sample of 1000 American adults
  - Working definition of functional food: food or food components that may provide benefit beyond basic nutrition
- 87% of surveyed American consumers believe certain foods have health benefits
- 90% of surveyed American consumers can name a food and its associated benefit.
- Top ten “functional foods” named by surveyed consumers
  - 1) fruits/vegetables, 2) fish/fish oil, 3) dairy, 4) herbs/spices, 5) whole grains, 6) fiber, 7) meat and poultry, 8) tea/green tea, 9) nuts, and 10) vitamins/supplements
- Pair food with heart health, overall health, weight management, cancer, & digestive health and by life stage-healthy growth and development and healthy aging



# HISTORICAL NOTES

- The concept of food as medicine has origins in ancient India, traditional Chinese medicine, and other ancient civilizations.
- Advances in technology built evidence-base for connection between food and health
  - 18<sup>th</sup> century chemist Antoine Lavoiser designed laboratory equipment to test his hypothesis that food was fuel.
- Early experiments illustrated how fortifying products can enhance health benefits and reduce disease risks:
  - Vitamin B<sub>3</sub> (niacin)-enriched flour & pellagra
  - Vitamin B1 (thiamine)-enriched flour & beriberi
  - Iodized salt & goiter
  - Vitamin D-enriched milk & rickets
  - Vitamin C & scurvy



# FUNCTIONAL FOODS IS BIG BUSINESS!

- Health-conscious consumers are driving the demand for the development and promotion of products that
  - Promote wellness
  - Increase longevity
  - Prevent or manage chronic diseases
- US sales of functional foods continue to increase, weathering economic downturn better than other food categories
  - Reached \$37.4 billion in 2009
  - Estimated to represent 35-50% of global sales
- Asia-Pacific also has a large market
- Brazil has strong market potential

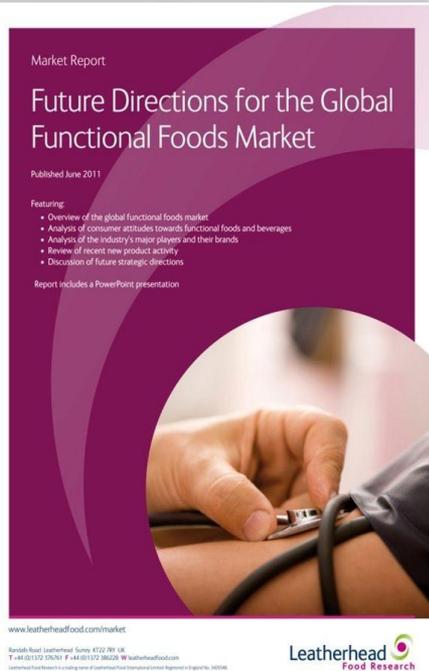




# FUNCTIONAL FOODS BUSINESS FOCUS

## Key categories

- Energy
- Cognitive, digestive, bone, joint & heart health
- Weight management
- Mood enhancement
- Skin & beauty



## Key players (key brands)

- PepsiCo (Quaker, Gatorade)
- Coca-Cola (Vitamin Water, Odwalla)
- General Mills (Cheerios, Yoplait)
- Kellogg (Special K, Kashi)
- Kraft (Capri Sun, Balance Bar)
- Nestle (Nesquick, PowerBar)
- Danone (Activia, Essensis)
- Unilever (Slim-Fast, Blue Band)
- Yakult Honsha (Yakult 400, Jole)

# FACILITATING MARKET GROWTH

- Simplified approval process to market and label health claims
- Increased awareness about food & chronic disease linkages
- Gained acceptance about personalized medicine
- Incentivized employees to develop better-for-you products
- Incentivized *customers* to *consume* better-for-you products
- Advanced food processing techniques
- Demonstrated premium pricing potential



# EMERGING FUNCTIONAL FOOD TECHNOLOGIES



- Enhancing product taste & smell
- Optimizing texture
- Stabilizing product ingredients
- Improving body's defenses
- Maintaining food safety
- Managing reasonable product costs

Comprehensive  
**REVIEWS**  
in Food Science and Food Safety

Journal of  
**Food Science**  
**EDUCATION**



## Wellness 12



FOOD SCIENCE &  
INNOVATION CONFERENCE 2012

FEBRUARY 27-29, 2012 | GUADALAJARA, JALISCO, MEXICO



<http://www.ift.or>

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# PROCESS FOR BRINGING FUNCTIONAL FOODS TO MARKET

**Identify relationship between food component and health benefit**

**Demonstrate efficacy and determine intake level necessary to achieve desired effect**

**Demonstrate safety at efficacious levels**

**Develop suitable food vehicle for bioactive component**

**Demonstrate scientific sufficiency of evidence for efficacy**

**Communicate benefits to customers**

**Conduct in-market confirmation of efficacy and safety**

# MARKET ENTRY STRATEGIES

## (1) Acquisitions

- Gilde acquired DSM Bakery Ingredients
- PepsiAmericas acquired Ardea Beverage

## (2) Joint Ventures

- Coca-Cola & Nestle joined to create Enviga
- Danone & Yakult joined to enter into India's probiotic dairy market
- Novartis & Quaker Oats joined to produce functional foods

## (3) Licenses & Partnerships

- Kraft Foods & Medisyn Technologies entered into a research & licensing partnership to discover bioactive ingredients
- General Mills & Curves partnered on extra fiber brand
- Kellogg licensed Martek's DHA omega-3 technology to create Live Bright Brain Health Bars

# MAKING IT IN THE MARKETPLACE

- Need to market a feel good benefit consumers immediately feel and connect with product
- Build consumer trust with a credible claim and marketed product
- Know and target your niche
- Integrate smart technology & social networks
- Have the science to support the claim

**Communicate a specific health message  
about a specific product to a niche  
audience**



# BETTER-FOR-YOU FOODS: IT'S JUST GOOD BUSINESS

The Hudson Institute examined Nielsen sales data from grocery stores, drug stores, and mass merchandisers; financial metrics, such as operating income, share price appreciation, and return to shareholders; and company reputation and favorability rankings and found food and beverage companies that have a higher percentage of product sales in the better-for-you product category demonstrate comparatively better sales growth, operating profits, returns to shareholders, and company reputation.

# OVERCOMING CONSUMER PERCEIVED BARRIERS

- Expense
- Taste
- Availability
- Convenience
- Knowledge of foods/desired health benefits
- Confusion over conflicting information
- Confidence in the science
- Knowledge of how much to consume
- Uncertainty in how to prepare foods
- Lack of desire to try new foods
- Time it takes to learn about these foods



# TOP FOOD TRENDS

- (1) Demographically Directed
- (2) Still Cooking
- (3) Appeal of Americana
- (4) Foodie Focused
- (5) Get Real
- (6) New Nutrients
- (7) Specialty Treats
- (8) Three Squares
- (9) Prescriptively Eating
- (10) Home Rituals

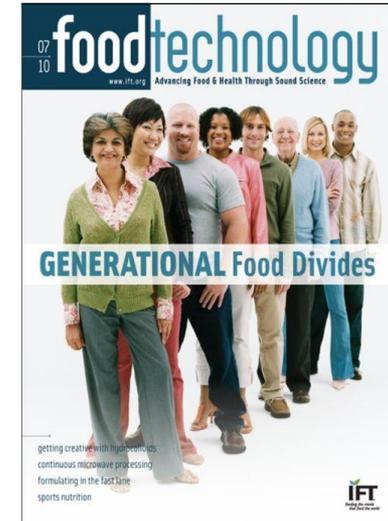


**Elizabeth Sloan, Ph.D.**  
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**Inc.**

**Contributing Editor, Food Technology Magazine**

Sloan E. Top 10 Food Trends. *Food Tech.* April 2011

# (1) DEMOGRAPHICALLY DIRECTED



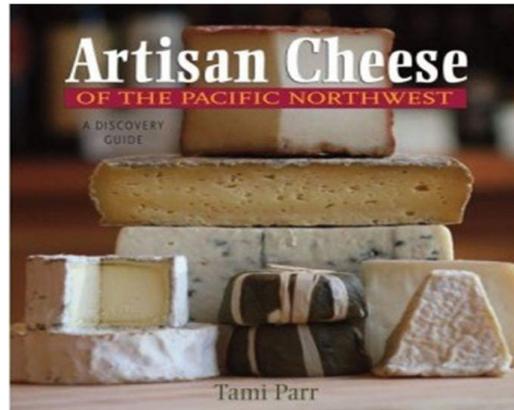
Sloan E. Top 10 Food Trends. *Food Tech*. April 2011

Sloan E. Bridging Generational Food Divides. *Food Tech*. July 2010

# (2) STILL COOKING



# (3) APPEAL OF AMERICANA



# (4) FOODIE Fo



Sloan E. Top 10 Food Trends. *Food Tech*. April 2011

(5) GET  
REAL



## (6) NEW



**A Little Extra Magnesium  
to Keep Your Cells Younger**



# (7) SPECIALTY



# (8) THREE



## (9) PRESCRIPTIVELY



# (10) HOME RITUALS



# TOP FUNCTIONAL FOOD TRENDS

- (1) Retro Health
- (2) Naturally Functional
- (3) Functional Fill-ins
- (4) Prime Timers
- (5) Chemical Warfare
- (6) Ailing Adolescents
- (7) Meddling in Medications
- (8) Daily Dynamics
- (9) Get the Lowdown
- (10) Finally foodservice

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