



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

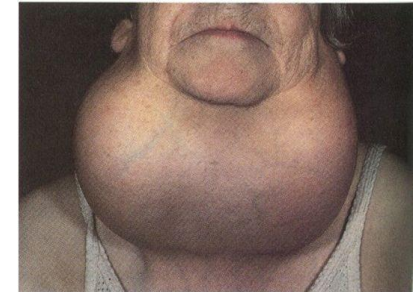
IFIC 2011 CONSUMER TRENDING SURVEY

- 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
 - 18th 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 B₃ (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





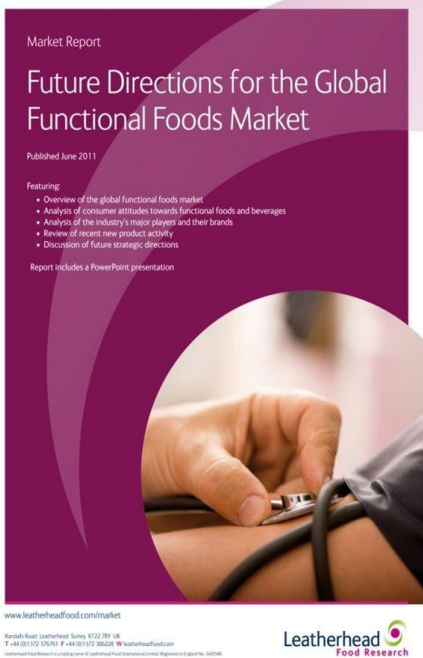
FUNCTIONAL FOODS BUSINESS FOCUS

Key categories

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

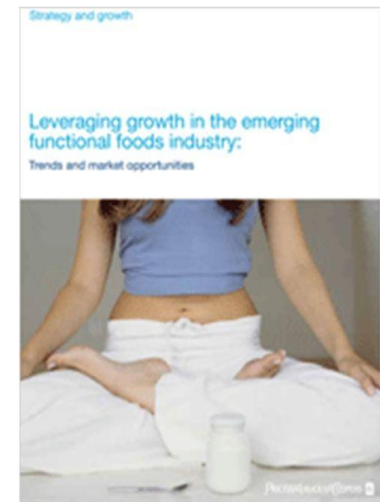
Key players (key brands)

- 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

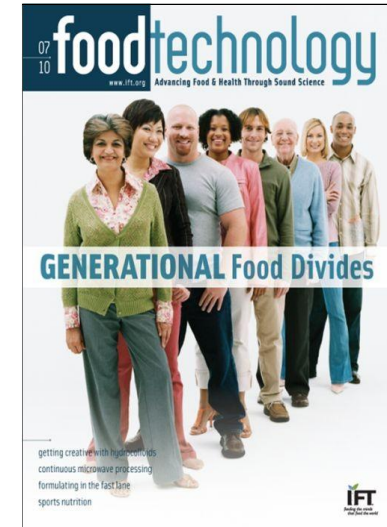


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Sloan E. Top 10 Food Trends. *Food Tech.* April 2011

(1) DEMOGRAPHICALLY DIRECTED



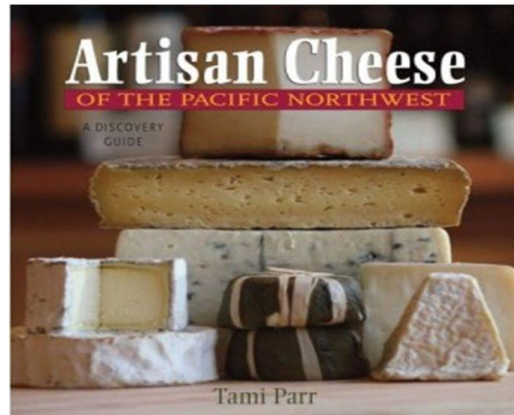
Sloan E. Top 10 Food Trends. *Food Tech.* April 2011

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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