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Culinary Nutrition News:

The Function of Functional Foods

Provided through a partnership between ACFEF Chef & Child Foundation and Clemson University, and sponsored by French's Foodservice.

As a chef, you are constantly thinking about the functionality of foods. When composing a dish, you must consider each ingredient and their individual contribution to the overall taste, aroma, texture and presentation. While you already consider foods' function in terms of complementing and enhancing other foods, you should also consider its nutritional function. In recent years, there has been a lot of attention placed on functional foods with the belief that they have the potential to reduce chronic diseases, promote health and reduce healthcare costs. Generally speaking, all foods are functional, meaning they provide energy and nutrients necessary for survival, which makes this food category designation a bit tricky to navigate.

Functionality defined

While the Japanese first coined the term "functional foods" in the 1980s, there is actually no legal interpretation of this term in the United States. In fact, it is commonly used as a marketing idiom rather than regulatory terminology. The Food and Drug Administration (FDA) does regulate functional foods, but only in the same way they regulate conventional foods. Thankfully, three organizations have attempted to shed light on this rapidly growing food segment by proposing their own definitions:

American Dietetic Association (ADA): Functional foods include whole foods and fortified, enriched or enhanced foods that have a potentially beneficial effect on health when consumed as a part of a varied diet on a regular basis, at effective levels.[1]

International Food Information Council (IFIC): Functional foods are foods or dietary components that may provide a health benefit beyond basic nutrition. Examples can include fruits and vegetables, whole grains, fortified or enhanced foods and beverages, and some dietary supplements.[2]

Institute of Food Technologists (IFT): Functional foods are foods and food components that provide a health benefit beyond basic nutrition (for the intended population). Examples may include conventional foods, fortified, enriched or enhanced foods, and dietary supplements. These substances provide essential nutrients often beyond quantities necessary for normal maintenance, growth and development, and/or other biologically active components that impart health benefits or desirable physiological effects.[3]

Modified vs. conventional

The term "functional foods" is used in regards to foods that provide additional health benefits that may reduce certain disease risks or promote optimal wellness. For example, links have been found between certain food components and health conditions, such as omega-3 fatty acids and heart disease, lycopene and prostate cancer, as well as probiotics and certain gastrointestinal conditions. Consumers not only desire more bang for their buck in terms of taste and portions, but also nutrition, which is why the food industry has been capitalizing on this notion by creating products, such as calcium-fortified orange juice, low-fat yogurt with active cultures, folate-enriched breads and fiber-enriched snack bars. However, these types of foods compose only one grouping of functional foods—modified foods. Modified foods include foods that have been enriched, fortified or enhanced.

There are also many conventional or whole foods that you already use in your restaurants that are also considered functional foods based on their ability to optimize health and wellness. This means that as chefs, you too can capitalize on this booming food segment by incorporating and highlighting certain foods on your menus. For instance, did you know:

- Cruciferous vegetables (broccoli, cauliflower, Brussels sprouts, kale, cabbage, and bok choy) may reduce the risk of several types of cancer
- Tomato products rich in lycopene may reduce the risk of prostate cancer
- Citrus fruits may reduce the risk of stomach cancer
- Dark chocolate may improve heart health
- Tree nuts and peanuts may reduce the risk of sudden cardiac death
- Fermented dairy products (probiotics) may improve irritable bowl syndrome
- Cranberries can reduce bacteriuria for urinary tract function

Aside from being refreshing and delicious, citrus fruits may reduce the risk of stomach cancer.

Food as thy medicine

"Let food be thy medicine and medicine be thy food," Hippocrates proclaimed more than 2,000 years ago. One issue surrounding functional foods is whether or not certain foods can replace medicine. The reality is that many cultures have been using foods as medicine for years. For instance, in the 1920s iodine was added to salt to prevent goiter. While food may or may not cure certain illnesses, one thing is certain—a healthy diet is a means of prevention and contributes to good health. However, it is possible that in the future, foods we consume may be fortified as a means of alleviating certain health conditions.

No substitution for a balanced diet

A growing number of consumers are becoming aware of functional foods with hopes of reaping additional health benefits. In fact, U.S. sales of functional foods last year reached $37.4 billion.[4] People can use functional foods to fill in certain nutritional gaps left by intolerances, strict diets or personal preferences. For example, those who are lactose intolerant can drink calcium-fortified orange juice, those who are vegetarians can indulge in soy-based products for protein, and those who dislike seafood can get omega-3s from enriched eggs or pasta. While functional foods can be a healthful substitute in some ways, they should not be a replacement for a balanced diet.

FUNCTIONAL FOODS OVERVIEW

FUNCTIONAL COMPONENTS	SOURCES	POTENTIAL BENEFITS
PHYTOESTROGENS		
Lignans	Flax, rye, some vegetables	Heart health and immune function
Isoflavones—daidzein, genistein	Soybeans and soy-based foods	Healthy brain and immune function, bone health, menopausal health
Soy protein	Soybeans and soy-based foods	Reduce risk of coronary heart disease (CHD)
CAROTENOIDS		
Beta-carotene	Citrus, carrots, pumpkin, sweet potato, cantaloupe	Antioxidant defenses
Lutein, zeazanthin	Spinach, corn, eggs, citrus, collards, spinach	Vision health
Lycopene	Tomatoes, watermelon, red/pink grapefruit	Prostate health
FATTY ACIDS		
Monounsaturated fatty acids	Tree nuts, olive oil, canola oil	Reduce risk of CHD
Conjugated linoleic acid	Beef, lamb, dairy products	Immune function and improve body composition
Omega-3 fatty acids	Fish and fish oils, walnuts, flax	Heart health, mental and visual function
DIETARY FIBER		
Insoluble fiber	Wheat bran, corn bran, fruit skins	Digestive health, cancer prevention
Beta-glucan	Oatmeal, oat bran, barley, rye	Reduce CHD risk
Soluble fiber	Psyllium, peas, beans, apples, citrus fruit	Reduce CHD risk
Whole grains	Whole wheat bread, oatmeal, cereal grains, brown rice	Reduce CHD risk, healthy blood glucose levels
PREBIOTICS		
Inulin, fructo-oligosaccharides, Polydextrose	Whole grains, some fruits, garlic, onions, honey, leeks	Gastrointestinal health, improve calcium absorption
PROBIOTICS		
Yeast, lactobacillus, bifidobacteria	Certain yogurts, cultured dairy and non-dairy products	Gastrointestinal health, immune function, menopausal health
SULFUR COMPOUNDS		
Diallyl sulfide, allyl methyl trisulfide	Onions, leeks, garlic, scallions	Detoxification, immune function, heart health
Dithiolethiones	Cruciferous vegetables	Detoxification, immune function
Sulforaphane	Broccoli, cauliflower, kale, cabbage, horseradish	Antioxidant defenses, detoxification
Plant stanols/sterols	Soy, wheat, corn, fortified foods and beverages	Reduce risk of CHD
FLAVONOIDS		
Anthocyanins	Berries, cherries, grapes	Antioxidant defenses, brain function
Flavonols	Tea, cocoa, chocolate, apples, grapes, onions, broccoli	Heart heath, antioxidant defenses
Flavanones	Citrus foods	Antioxidant defenses
Proanthocyanidins	Cranberries, cocoa, apples, strawberries, grapes, wine, cinnamon, peanuts	Heart health, urinary tract health

Source: International Food Information Council Foundation[2]

Remember, there is no such thing as one perfect food. Balance, variety and moderation continues to be the No. 1 motto in the world of food and nutrition. However, being a chef who feeds a wide variety of customers, including those previously mentioned, could be beneficial. Consider having certain functional foods (modified and conventional) on hand to cater to all diners' needs.

Cooking for kids

As we raise the nation's first generation of overweight children, several staggering statistics emerge. For example, one in 10 children already suffer from a chronic ailment,[5] and one in eight kids have developed at least two risk factors for heart disease.[6] Thankfully, we are beginning to see an overall change in family eating behaviors with 64 percent of families with children practicing some sort of healthy eating strategy, such as eating more vegetables and fruits, whole grains and low-fat dairy; avoiding trans fats; monitoring portion sizes and sugar consumption; and including more fish/seafood in their diets.[7] Furthermore, parents are making efforts to limit their children's intakes of caffeine, sugar, high-fructose corn syrup (HFCS), trans fats, low-/no-calorie sweeteners and artificial coloring.[8] They are also trying to increase their kids' intakes of calcium, vitamins/minerals, whole grains, vitamin D, vitamin C, fiber and omega-3s,[8] making functional foods a helpful and healthful addition to children's menus at home and in restaurants.

FUNCTIONAL FOOD CATEGORY	SELECTED FUNCTIONAL FOOD EXAMPLES
CONVENTIONAL FOODS (whole foods)	Garlic Nuts Tomatoes Kale Raspberries Broccoli
MODIFIED FOODS Fortified Enriched Enhanced	Calcium-fortified orange juice Folate-enriched breads Enriched snack bars, yogurts, teas, bottled water, fish oils
MEDICAL FOODS	Phenylketonuria (PKU) formulas free of phenylalanine
FOODS FOR SPECIAL DIETARY USE	Infant foods Gluten-free and lactose-free foods, weight-loss foods

Source: American Dietetic Association[1]

"ONE IN 10 CHILDREN ALREADY SUFFER FROM A CHRONIC AILMENT, AND ONE IN EIGHT KIDS HAVE DEVELOPED AT LEAST TWO RISK FACTORS FOR HEART DISEASE."

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Experts say dark chocolate may improve heart health.

About the American Culinary Federation and the Chef & Child Foundation

The American Culinary Federation, Inc., established in 1929, is the premier professional organization for culinarians in North America. With more than 20,000 members spanning 225 chapters nationwide, ACF is the culinary leader in offering educational resources, training, apprenticeship and accreditation In addition, ACF operates the most comprehensive certification program for chefs in the United States. ACF is home to ACF Culinary Team USA, the official representative for the United States in major international culinary competitions, and to the Chef & Child Foundation, founded in 1989 to promote proper nutrition in children and to combat childhood obesity. For more information, visit www.acfchefs.org.

About Clemson University

CU CHEFS® (Clemson University's Cooking and Healthy Eating Food Specialists) instructional program, led by Dr. Marge Condrasky, Associate Professor in Food Science and Human Nutrition, is a registered trademark of Clemson University designed to promote changes in menu planning, food purchasing, food preparation and food consumption behaviors with a goal of fostering good health through healthy nutrition. 'Culinary nutrition' is the

application of nutrition principles combined with food science knowledge displayed through a mastery of culinary skills. The results are healthy eating behaviors grounded in culinary confidence and nutrition alertness. CU CHEFS® promotes an awareness of the latest trends in foods and nutrition through the demonstration of proficient culinary skills to produce flavorful, health-inspired menus for schools, churches, restaurants. Clemson University, located in Clemson, S.C., is ranked 22 among the nation's top public institutions. Since 2001, Clemson has doubled external research funding, raised the academic profile of the student body, increased retention and graduation rates, launched high-profile economic development and has earned national accolades, including being named TIME magazine's Public College of the Year.

About French's Foodservice

French's FOODSERVICE

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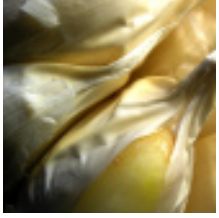






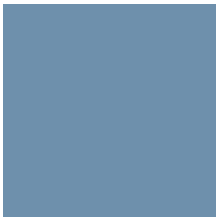







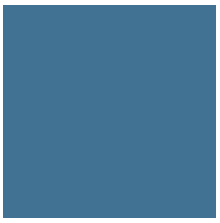

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The **International Food Information Council Foundation** provides food safety, nutrition and healthful eating information to help you make good and safe food choices.

Visit: www.foodinsight.org

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