

# Processed Foods: A Range, Not a Dichotomy

Are your clients avoiding processed foods in an effort to eat healthier? Are they trying to lose weight by cutting out processed foods? Are they hearing that we should return to foods our grandmothers ate ... or stick to foods with ingredients that a fifth-grader can pronounce?

Here is some background information that can help you dialogue with clients to develop a common understanding about this often-confusing issue.

## Definition and History

Food processing—the set of methods and techniques that are used, by the food industry or in the home, to transform raw ingredients into food or to transform food into other forms—has been used for centuries. From prehistoric man, who discovered fire to cook his food, to other early forms of food processing that include drying, fermenting and salting, humans have found ways to improve upon their food supply, making it safer, more palatable, more available and healthful. Processing methods have expanded to include canning, freezing, fortifying and preserving, leading to the plethora of convenient, tasty, inexpensive and nutrient-rich foods on the market today.

## Consumer Perceptions

If processing provides so many benefits, then why do many people have a negative perception of processed foods? In a 2008 survey conducted by the International Food Information Council (IFIC), 43 percent of consumers viewed processed foods unfavorably and only 18 percent favorably.<sup>1</sup> The only positive areas that consumers linked to processed foods were their increased safety, value and some select health benefits. Ironically, processing enhances—rather than detracts from—the top five traits consumers list in choosing their foods—taste, freshness, safety, cost and value.

The most affluent and highly educated consumers—and those who consider themselves knowledgeable about foods and diets—are the ones to most likely have a negative perception about processed foods. However, these perceptions about processed foods cut across demographics—all ethnicities, ages, genders and geographic areas.

Some perceived unhealthful components in foods—such as sodium, *trans* fats and high fructose corn syrup—are associated with processed foods. Artificial colors, flavors, preservatives and chemicals with long names, as well as ingredients linked to obesity, carry negative health connotations and are also linked to processed foods. ***Many consumers are not aware that healthful foods without these ingredients are often processed, and that just the presence of an unhealthful component does not necessarily make the food unhealthful.*** Confusing the issue further is that consumers use different definitions of processed foods and may be referring to very different food products.

## Unintended Consequences of Avoiding Processed Foods

Unfortunately, these misconceptions often lead consumers to avoid or limit certain foods and beverages in their diets. While the root reason for this may be to improve their health, avoiding all processed foods can actually have the opposite effect. Unintended consequences can include nutrient deficiencies and, in the long term, increased risk for certain chronic diseases. For example:

- People who give up frozen and canned fruits and vegetables and opt solely for fresh ones not only limit the variety of their choices, but they miss out on fruits and vegetables that offer important nutrients and are only in season for a short time—such as strawberries and broccoli.
- Omitting cheese—an oft-cited example of a processed food—may lead to inadequate intakes of calcium and less-than-desirable levels of protein. Over time, these could increase the risk of bone fracture in younger ages, osteomalacia in the middle-aged and osteoporosis and sarcopenia in the older population.
- Avoiding packaged and prepared meats such as luncheon meats, rotisserie chicken, canned tuna and canned beans may lead people to make less healthful substitutions, missing out on protein, iron, zinc and other important nutrients rich in these foods.
- Consuming raw milk and juice as a way to avoid “processed” products (for example, milk and juice that have been pasteurized) can lead to deadly foodborne illness caused by pathogenic bacteria.

## Pros and Cons of Processing

Drawbacks of food processing include:

- **Loss of nutrients**—this varies between 5 percent and 20 percent for most nutrients.<sup>2</sup> For example, canned fruits may have slightly lower levels of heat-fragile nutrients, such as vitamin C, compared to fresh fruits. Fiber and other nutrients are also lost when processing whole grain (flour, pasta and rice) into their refined versions.
- **Increased levels of “negative” components**—such as sugar, high fructose corn syrup, salt and fat, and additives such as artificial colors and flavors—which are added to some foods as preservatives or to improve taste, texture and appearance.
- **Energy density**—some processed foods may contribute a significant amount of calories but provide little nutritional benefit, which, without enough physical activity, could lead to overweight and obesity.
- In addition, many people see processed foods as a threat or competition to the current move toward local, organic and sustainable foods.

Advantages of processed foods are:

- **Convenience**—with many adults working long hours and the pace of life increasingly hectic, convenience is not just appreciated, but demanded. Whether using bagged, prewashed lettuce and other salad greens, baby carrots, packaged grains, meats, cheeses and sauces, or fully pre-prepared meals that only require reheating, the consumer is largely freed from hours in the kitchen preparing meals from scratch by the multitude of processed foods and meals in the marketplace that are designed for busy lifestyles.
- **Safety**—food processing greatly reduces the incidence of foodborne disease. Fresh produce, raw meats, raw milk, eggs and other straight-from-farm foods can harbor pathogenic microorganisms (such as *Salmonella*, *Campylobacter* and *E. coli*) capable of causing serious illnesses and death. For example, pasteurizing milk, a procedure common since the early 1900s, kills about 90 percent of the harmful bacteria in raw milk<sup>3</sup> and has greatly reduced the incidence of disease.<sup>4</sup>

- **Preservation**—shelf-life is greatly extended for processed foods versus their natural counterparts, resulting in enhanced convenience to the consumer as well as significant reductions in food waste. In addition, preservation enables transportation of perishable foods across long distances, sometimes worldwide, making available culturally specific food products that the consumer could not enjoy until fairly recently.
- **Taste**—processing often improves the taste of the natural food. People may try a food once, but if it does not taste good to them, they will not return to it. Some groups with smaller appetites, such as children and the elderly, in particular rely on good-tasting options to consume the calories and nutrients they need. As health professionals working with clients and consumers, we cannot minimize the importance of taste—still the number-one factor in food choices.<sup>5</sup>
- **Value**—although the average consumer may not fully appreciate it, processed foods are generally produced with maximum efficiency, resulting in a greatly reduced cost compared to many fresh, organic and local options. With price coming in as the second most important factor in food-purchasing decisions,<sup>5</sup> value cannot be underestimated.
- **Seasonal availability**—while our ancestors depended on produce, nuts, legumes and other foods while they were in season, this constraint has largely been lifted with the advent of processing. Canned and frozen fruits and vegetables—picked and processed at the peak of ripeness and highest nutrient content—are available year-round with little compromise to taste. Additionally, processed foods help consumers plan and choose a much more varied diet, helping to ensure adequate intake of all nutrients.
- **Nutrition**—often, nutrients are added to, or taken away from, foods to improve their nutritional profile. For example, breakfast cereals are almost always fortified with nutrients ranging from vitamin A to zinc; orange juice can be fortified with vitamin D and calcium; milk has vitamins A and D added; and grains have added B vitamins, iron and folate. On the flip side, the array of products with certain components

removed is immense—low-fat cookies, low-sodium pretzels and crackers, fat-free and low-fat milk and yogurt and *trans* fat-free bakery items have been reformulated to contain less fat, sodium and sugar, while maintaining good taste—toward the goal of improved health and meeting consumers’ specific dietary and health needs. Without food processing, these positive nutritional changes in our food products would not be possible.

## Nutrient Contributions of Processed Foods

In spite of the generally negative connotations that the consumer has toward “processed” foods, the nutrient contributions are, in fact, quite significant:

- A recent study found that without the enrichment and fortification processes used in U.S. food manufacturing, many Americans would not achieve their recommended nutrient intakes, specifically for vitamins A, C, and D, thiamin, iron and folate.<sup>6</sup>
- A recent study in children and adolescents found that consumption of 100 percent fruit juice—certainly a processed food—is associated with improved nutrient adequacy, specifically for vitamins A and C, folate, potassium, phosphorus and magnesium.<sup>7</sup>
- Data from the 2003–2006 National Health and Nutrition Examination Survey (NHANES) and dietary modeling shows that replacing processed dairy foods with calcium-equivalent foods (for example, substituting low-fat milk with non-dairy calcium sources like bony fish or leafy greens) changes the overall nutritional profile of the diet and negatively impacts intake of protein, potassium, magnesium, phosphorus, riboflavin and vitamins A, D and B12.<sup>8</sup> Three servings per day of dairy foods are needed to help individuals meet recommendations for calcium and magnesium; 4 servings per day may be needed to help some groups meet potassium recommendations.
- A study using 1999–2004 NHANES data in U.S. children and adolescents found that consumption of lean beef (defined as less than 10 percent fat by weight)—certainly by some

definitions considered processed—contributed significantly to their intake of protein, vitamins B6 and B12, zinc, iron, niacin, phosphorus and potassium.<sup>9</sup>

- Another processed food—canned beans—also contributes significantly to nutrient intakes. Analysis of 1999–2002 NHANES data revealed that, relative to non-consumers, bean consumers had higher intakes of dietary fiber, potassium, magnesium, iron and copper.<sup>10</sup>
- Finally, a study looking at the nutrient contributions of dried fruit found that those who consumed at least one-eighth cup per day had higher intakes of fiber, vitamins A, C, E and K, potassium, calcium, phosphorus, magnesium and potassium; and had lower intakes of solid fats, sugars and alcohol.<sup>11</sup>

It is clear that without processed foods in our diets, reaching nutritional adequacy of many nutrients would be unfeasible.

## Processed Foods—a Continuum, Not a Dichotomy

While certain foods should not be consumed in excess, there is a balance needed in one’s individual food choices that leads to a healthful overall diet. Processed foods are, in fact, an important part of our everyday diets. It is tempting to identify a single food or food category as the cause of the multitude of health issues in our population today; however, we have to ensure that “processed foods” are not perpetuated as all negative. At the same time, we know there are no “magic bullet” foods or food categories that are all positive. *The health professional has a duty to educate his or her clients and patients about the range of processed foods and the contributions many of them make to our diets, using facts not emotions.*

It may be helpful when educating people to consider the healthfulness of processed foods as a continuum from minimally processed, nutrient-rich and health-promoting products to highly processed, packaged convenience foods. Minimally processed foods, in fact, are as nutritious—sometimes more so—as the food in its unprocessed form. The spectrum on the last page may be a helpful visual aid in teaching this concept.<sup>12</sup>

<b>Minimally processed foods;</b> generally very nutrient-dense	Salad in a bag Baby carrots Pasteurized milk Roasted nuts Whole-grain bread	Less Processed	
<b>Preserved and enhanced foods;</b> often a mixture of ingredients	Frozen and canned fruits and vegetables Dried fruit Breakfast cereals Bakery items Enriched bread Pasta, rice, crackers Canned meats and beans Cheese and yogurt		
<b>Ready-to-eat foods;</b> some provide considerable calories, sodium and sugars	Lunch meat, rotisserie chicken Nut butters Granola bars and energy bars Frozen dinners, pizzas, pot pies Canned soups Chips, pretzels Ice cream, frozen desserts Fruit drinks, sodas		More Processed

## Call to Action

It is important for the consumer to appreciate the benefits of many processed foods, which are often taken for granted. Without processed foods, our diets would lack many nutrients that are already difficult to consume in the proper quantities. Whether a food is processed or not, clients should be counseled to understand the possible health outcomes of basing their diets on foods that are low in nutritional value.

Helping clients incorporate processed foods strategically into a healthful, nutrient-rich and energy-controlled diet is key to finding a balance that includes feasibility, safety, convenience, affordability and taste for their entire family. While aspiring to serve only foods “that your grandmother would serve” or “with ingredients that a fifth-grader can pronounce” may sound healthy, this is certainly not attainable for most. Our challenge is to teach consumers how to be successful in their dietary goals, using the products that exist in the food landscape, and building balanced, healthy diets with foods from all five food groups that fit into their lifestyle.

## References

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- <sup>4</sup> Hannah Gould, CDC, 2011, <http://www.cnn.com/2011/10/12/health/food-poisoning-protection-guide/index.html>
- <sup>5</sup> 2012 Food & Health Survey: Consumer Attitudes toward Food Safety, Nutrition and Health. [http://www.foodinsight.org/Resources/Detail.aspx?topic=2012\\_Food\\_Health\\_Survey\\_Consumer\\_Attitudes\\_toward\\_Food\\_Safety\\_Nutrition\\_and\\_Health](http://www.foodinsight.org/Resources/Detail.aspx?topic=2012_Food_Health_Survey_Consumer_Attitudes_toward_Food_Safety_Nutrition_and_Health)
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- <sup>11</sup> Keast DR, O’Neil CE, Jones JM. Nutr Res. 2011 Jun;31(6):460-7.
- <sup>12</sup> Adapted from IFIC’s “The Continuum of Processed Foods” chart in Understanding Our Food Communications Toolkit: <http://www.foodinsight.org/understandingourfood.aspx> Accessed 5/20/2012.



For questions or comments please contact us at: [info@DairyCouncilofCA.org](mailto:info@DairyCouncilofCA.org)