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## USDA updates nutrient values for fast food pizza

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### Abstract

Consumption of quick service pizza has increased as Americans are spending more on food away from home. Pizza is consistently a primary Key Food in the USDA National Food and Nutrient Analysis Program (NFNAP) because it is a contributor of more than 14 nutrients of public health significance to the U.S. diet. The USDA Nutrient Data Laboratory collected national samples of the two leading fast food pizza chains to monitor and update changes in this popular food. Two brands of pizza - cheese (regular, thick, and thin crust) and pepperoni (regular and thick crust) pizzas were collected in 12 nationwide locations in 2003 and again in 2010. Sample units of pizzas were prepared for analysis of proximates, vitamins, minerals and fatty acids using NFNAP protocols. Analytical samples and quality control materials were analyzed by USDA-qualified laboratories using Association of Official Analytical Chemists (AOAC) approved methods. Nutrient data were statistically evaluated (significance set at  $p < 0.05$ ) to compare similar pizzas from different years. Based on these analyses, values for various nutrients changed. For example, both brands of cheese, thin crust pizzas showed a significant increase in sodium ( $p < 0.014$ ). Across all pizza types, brand A pizzas showed a significant increase in iron ( $p < 0.0009-0.036$ ) and potassium ( $p < 0.001-0.013$ ). Total sugars, fiber, cholesterol, and fat values significantly increased or decreased by brand and pizza type. These analyses provide current, accurate, nationally representative data for high consumption foods in the U.S. and are included in the USDA Nutrient Database for Standard Reference 24 as part of an effort to monitor changes in nutrient profiles for popular foods.

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### 1. Introduction

Consumption of foods away from home accounts for over 50% of total food eaten in the United States, with full-service and fast food restaurants accounting for 77% of all food away from home sales [1]. Sales of fast food pizza have increased from \$28 billion in 2000 to over \$35 billion in 2010 and continue

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to rise [2]. The USDA Nutrient Data Laboratory (NDL) recognized pizza as a high consumption food and sampled popular types of fast food pizza from the top two national pizza chains in 2003 and again in 2010 as part of their nutrient monitoring program. The two leading fast food pizza chains accounted for over 47% of the market-share based on the sales of the top 50 U.S. pizzerias [2] and had nearly \$9 billion in sales in the United States during 2011[3]. Pizza is consistently a Key Food in the USDA National Food and Nutrient Analysis Program (NFNAP) because it is a contributor of more than 14 nutrients of public health significance in the American diet, including total fat, calcium and sodium. Sodium is an essential nutrient, where nearly all Americans consume more than the Tolerable Upper Intake Level of 2,300mg per day for adolescents and adults 14 years and older [4]. Pizza is estimated to contribute 6.3% of sodium in the diet of the U.S. population due to both frequent consumption and higher levels of sodium [5]. The National Salt Reduction Initiative (NSRI), a collaborative effort among government agencies, food industry and health organizations to reduce the sodium in processed/prepared and restaurant foods, has set a goal to reduce sodium in these foods by 25 percent by 2014 [6]. While some fast food companies have pledged to reduce sodium in their products as part of the NSRI, other companies, such as the two brands sampled in this study, have not publicly made a commitment. As funding permits, NDL will continue to monitor sodium and other nutrients of public health concern in fast food pizza. The objective of this study was to compare similar fast food pizzas from 2003 to 2010, to determine the changes, if any, in this high consumption food.

## **2. Material and Methods**

### *2.1 Samples*

During the summer of 2003, sample units of cheese (regular, thick, and thin crust) and pepperoni (regular and thick crust) pizzas were collected from the top two national fast food pizza chains in 12 statistically selected locations in the 48 conterminous states. The fast food pizza chain locations were identified using a multistage, stratified sampling plan developed for NFNAP [7]. Samples of both leading brands were again collected in October 2010. Sample units of the same types of fast food pizzas were collected from the pizza chains in the same statistically selected locations. Specialized protocols were followed to handle and ship sample pizza units to the Food Analysis Laboratory Control Center at Virginia Polytechnic Institute [8].

### *2.2 Analyses*

The sample units in 2003 were analyzed by individual locations (n=12) except for thin crust cheese (both brands), thick crust cheese (brand B) and thick crust pepperoni (brand B). These sample units were randomly grouped into 4 subgroups of 3 locations each and composited for analysis. In 2010, sample units were randomly grouped by brand into 6 subgroups of 2 locations each and composited to create a final analytical sample. All samples were composited according to previously developed protocols for NFNAP. Values for proximates, vitamins, minerals and fatty acids were determined by NDL-approved commercial laboratories using validated Association of Official Analytical Chemists (AOAC) methodology.

### *2.2. Quality Control*

Analytical quality control assurance was monitored through the use of appropriate standard reference materials and in-house control materials.

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