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## USDA Food and Nutrient Database for Dietary Studies (FNDDS), 5.0

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### Abstract

The Food and Nutrient Database for Dietary Studies (FNDDS) is used to code and analyze dietary intakes for the What We Eat In America, National Health and Nutrition Examination Survey (WWEIA, NHANES). To create FNDDS 5.0 for WWEIA, NHANES 2009-2010, data for over 7,200 foods were updated to incorporate changes in the marketplace and information reported by survey participants. The updates include nearly 100 new foods and extensive changes to food descriptions, portions, weights, and recipes. The USDA National Nutrient Database for Standard Reference, Release 24 is the basis for the 65 nutrient values for each FNDDS food. FNDDS 5.0 is available at <http://www.ars.usda.gov/ba/bhnrc/fsrg>.

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### 1. Introduction

The Food and Nutrient Database for Dietary Studies (FNDDS) is developed by the Food Surveys Research Group of the United States Department of Agriculture (USDA) to code and analyze dietary intakes from What We Eat in America (WWEIA), the dietary intake interview component of the National Health and Nutrition Examination Survey (NHANES). This is a continuous survey involving approximately 5,000 individuals per year, with two 24-hour diet recalls per individual, and data are released in two-year datasets. The FNDDS is a readily available resource for the study of food consumption, which can be downloaded at no charge from the internet. The database provides

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comprehensive information for use in coding foods and portion sizes, as well as nutrient values for calculating nutrient intakes. The nutrient values in FNDDS are based on the nutrient values in another USDA database, the National Nutrient Database for Standard Reference (SR). This paper describes the background of the FNDDS, the relationship between the FNDDS and SR, the contents of FNDDS, its uses in dietary research, changes in the most recent release (5.0), and directions on how to obtain it.

## **2. Background**

### *2.1. History*

USDA conducted the first national survey of food intakes by individuals in 1965–66 [1,2]. Since that time, extensive electronic data files about foods (descriptive information, nutrient values, and weights for typical food portions) have been assembled by USDA to support additional surveys. These files have been used to process thousands of dietary intake records, including those collected in the USDA Nationwide Food Consumption Surveys (NFCS) 1965–66, 1977–78, and 1987–88, and the Continuing Surveys of Food Intakes by Individuals (CSFII) 1985–86, 1989–91, and 1994–96, 1998. They were also used with the NHANES 1988–1994, and 1999–2000 (U.S. Department of Health and Human Services [3] and [4]). These data files continue to be used with WWEIA, NHANES, the ongoing survey that resulted from the integration of CSFII with the dietary interview component of NHANES. Each version of the FNDDS is developed specifically to support each release of two-year survey data from WWEIA, NHANES, i.e., FNDDS 1.0 was used for survey data collected in 2001–2002, FNDDS 2.0 for 2003–2004, FNDDS 3.0 for 2005–2006, FNDDS 4.1 for 2007–2008, and FNDDS 5.0 for 2009–2010. Over the years, the data files have been updated and expanded to address the increasing requirements for national food consumption data in the U.S.

The food and nutrient data files are released in association with the release of dietary intake data from WWEIA, NHANES to document how the dietary data were processed. Since 2004 this database of food information has been available on the internet, not only for researchers analyzing national survey data, but also for those conducting other dietary studies [5].

### *2.2. Relationship between FNDDS and SR*

The relationship between FNDDS and SR is a very close one. FNDDS is built upon a foundation of nutrient data from approximately 2,900 SR codes. Both databases are produced by the Beltsville Human Nutrition Research Center of the USDA Agricultural Research Service. The Food and Nutrient Database for Dietary Studies (FNDDS) is published by the Food Surveys Research Group (FSRG) and the National Nutrient Database for Standard Reference (SR) is published by the Nutrient Data Laboratory (NDL). The databases each have unique features because they are designed for different purposes and serve different needs. The primary purpose of FNDDS is to assess food and nutrient consumption for the national U.S. survey WWEIA, NHANES. The purpose of SR is to disseminate composition data on U.S. foods as the “standard reference”.

Because of their different purposes and designs, each database has features that make it more appropriate for certain uses. For example, a search in FNDDS 5.0 for “beef steak” finds 18 codes, all representing cooked steak. Five cooking methods (broiled, fried, etc.) are represented plus one “cooked, NS (not specified) as to cooking method”. For each cooking method, there are three codes to describe whether just the lean meat was eaten, or the lean and fat, or if it was not specified (NS). The same search in SR24 finds 25 codes for specific individual cuts of beef steak, described as “lean and fat” or “lean only”, often in both raw and cooked versions, and with a few different cooking methods. This comparison relates back to the different purposes of the databases. The detail in SR is useful for finding nutrient values, if the specific cut of beef and enough of the other details are known in order to distinguish among

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