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Federal monitoring activities related to food and nutrition: How do they compare?

Jaspreet KC Ahuja^{a*}, WenYen Juan^b, Katie Egan^b, Jean Buzby^c, Paula Trumbo^b,
Alanna Moshfegh^a, Joanne Holden^a

^a *Beltsville Human Nutrition Research Center, Agricultural Research Service, US Department of Agriculture (USDA), MD, Beltsville, 20705, USA*

^b *Center for Food Safety and Applied Nutrition, Food and Drug Administration, Department of Health and Human Services (DHHS), College Park, MD20740, USA*

^c *Economic Research Service, US Department of Agriculture, Washington DC, 20250, USA*

Abstract

Several nutrition monitoring related activities are carried out by the federal government in the United States. These include the What We Eat in America, National Health and Nutrition Examination Survey (WWEIA, NHANES), the Total Diet Study (TDS), and the Nutrient Availability Data (NA). The intent, purpose, and methodology of the activities, and their inter-relationships were examined. Mean intakes of selected nutrients common to the datasets were compared. It is important to consider the purpose of these datasets when comparing results.

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1. Introduction

Several nutrition monitoring related activities are carried out by the federal government in the United States (US). Data from these activities are used by the federal agencies, the private industry and academia for many purposes. Some of the major uses of these data include assessing the health and nutritional status of the US population, developing and evaluating dietary guidance and dietary intake recommendations, evaluating food assistance programs, assisting policymaking in the areas of food safety, food fortification, tracking dietary trends and patterns, enhancing the understanding of diet-disease relationships, and setting nutrition research priorities [1].

* Corresponding author: Tel.: 1-301-504-0695; fax: 1-301-504-0692.
E-mail address: jaspreet.ahuja@ars.usda.gov.

The objective of this report is to provide the scientific community with a brief overview of the federal nutrition monitoring-related activities in the United States so as to better understand their purpose and methodology, how they are related to each other, and how they differ. Estimates of nutrients common to these datasets were also compared. Food intake estimates were not compared for this report. The views expressed here are those of the authors and do not necessarily reflect the positions of the U.S. Department of Agriculture or the Food and Drug Administration.

1.1. Overview of the Federal Food and Nutrition Related Monitoring Activities in the United States

The current nutrition monitoring activities in the United States are mandated by the National Nutrition Monitoring and Related Research Act of 1990 that requires the US Department of Health and Human Services (DHHS) and US Department of Agriculture (USDA) to implement a coordinated program of nutrition monitoring [2]. The federal monitoring systems include: the What We Eat in America, National Health and Nutrition Examination Survey (WWEIA, NHANES), jointly conducted by the DHHS and USDA; the Total Diet Study (TDS), conducted by the US Food and Drug Administration (FDA), DHHS; and the Nutrient Availability Data compiled and released by the USDA. A brief overview of each of the three activities, their purpose and methodology follows.

What We Eat in America, National Health and Nutrition Examination Survey (WWEIA, NHANES)

NHANES is the major national health survey in the United States designed to assess the health and nutritional status of adults and children. WWEIA is the dietary interview component of NHANES, and is conducted as a partnership between the two federal departments - DHHS and USDA. The National Center for Health Statistics (NCHS), DHHS is responsible for the sample design and data collection, and the Food Surveys Research Group (FSRG), Beltsville Human Nutrition Research Center (BHNRC), Agricultural Research Services (ARS), USDA is responsible for the survey's dietary data collection methodology, maintenance of the databases used to code and process the data, and data review and processing. The WWEIA, NHANES has been a continuous survey since 2002, with data released every two years [3, 4].

The NHANES is a stratified, multistage design survey and provides nationally representative estimates of the civilian, non-institutionalized population in the United States. It combines interviews and physical examinations for a nationally representative sample of about 5,000 persons each year [3, 4]. As part of the dietary component of the survey, the participants complete an in-person 24-hour dietary recall followed by a second 24-hour dietary recall via phone approximately 3-10 days after the first dietary interview, using the USDA's 5-step Automated Multiple-Pass Method [5]. The foods and amounts reported by the respondents are then coded using the Food and Nutrient Database for Dietary Survey (FNDDS). The FNDDS is a database of foods, their nutrient values, and weights for typical food portions. It contains over 7,000 foods and beverages, food energy and 64 nutrient and food components for each of these foods and beverages, and over 30,000 portion weights [6]. The nutrient values for the FNDDS are derived from the USDA National Nutrient Database for Standard Reference (SR), maintained by the Nutrient Data Laboratory (NDL), also at the BHNRC, ARS, USDA [7]. Nutrient intakes by the US population are calculated by multiplying the reported amount of the foods and beverages from the 24-hour recalls by the nutrient values in the FNDDS.

Total Diet Study (TDS)

The Total Diet Study (TDS), also referred to as the market basket study, is an on-going program since 1961 to monitor the food supply for levels of chemical contaminants, pesticide residues, industrial chemicals, and toxic and nutritional elements. The TDS is a collaborative effort among FDA's laboratories, regional and district offices, and the Center for Food Safety and Applied Nutrition.

Samples of foods are purchased four times a year, once from each of four regions (West, North Central, South, and Northeast) of the US. The foods are purchased at retail grocery stores and fast food

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