Federal Monitoring Activities Related to Food: How do they Compare?

Jaspreet KC Ahuja[1], WenYen Juan[2], Katie Egan[2], Hazel Hiza[3], Hodan Wells[4], Paula Trumbo[2], Alanna Moshfegh[1], Joanne Holden[1]
[1]Beltsville Human Nutrition Research Center, ARS, USDA, [2] Center For Food Safety and Applied Nutrition, FDA, DHHS,
[3]Center For Nutrition Policy and Promotion, USDA, [4]Economic Research Service, USDA

Abstract:

Background: 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), conducted by the U.S. Department of Health and Human Services (DHHS) and the U.S. Department of Agriculture (USDA), the Total Diet Study (TDS), conducted by the U.S. Food and Drug Administration (FDA), DHHS and the Nutrient Availability Data compiled by USDA's Center for Nutrition Policy and Promotion (CNPP), using USDA's Economic Research Service's (ERS) Food Availability data.
Objective: To better understand the intent, purpose, and methodology of these monitoring activities, how they are related to each other, and how they differ.
Description: The intent, purpose, and methodology of each listed monitoring activity, and their inter-relationships will be examined. Mean intakes of selected nutrients common to the datasets will be determined and presented. For instance, the mean (SE) calcium intake for all individuals over 2 years of age for 2007-2008 based on WWEIA, NHANES is 946 (20.2) mg/day and based on the TDS is 816 (16.2) mg/day. The mean availability of calcium is 960 mg/day based on the Nutrient Availability data (2006). The reasons for the differences will be discussed.
Conclusion: These nutrition monitoring activities provide useful information to policy makers and researchers for examining nutrient adequacy, dietary trends, and tracking nutrition and health objectives, to name a few. It is important to keep in consideration the intent and purpose of these datasets when comparing results.

Objective:

To better understand the purpose and methodology of various monitoring activities conducted by the U.S. government, how they are related to each other, and how they differ.

Data Sources:

- Nutrient Availability Data, 2006; food availability for 230 commodities, not adjusted for spoilage and waste, merged with nutrient data from USDA National Nutrient Database for Standard Reference (SR).
- Total Diet Study, 2007-2008, 8 market baskets of 286 foods, merged with 24-hour dietary recall data from WWEIA, NHANES 2007-2008, day 1, excludes breast-fed children, n = 9118.
- WWEIA, NHANES 2007-2008, 24-hour dietary recall data, day 1, excludes breast-fed children, n = 9118, merged with nutrient data for 7,174 foods from Food and Nutrient Database for Dietary Studies (FNDDS) 4.1.

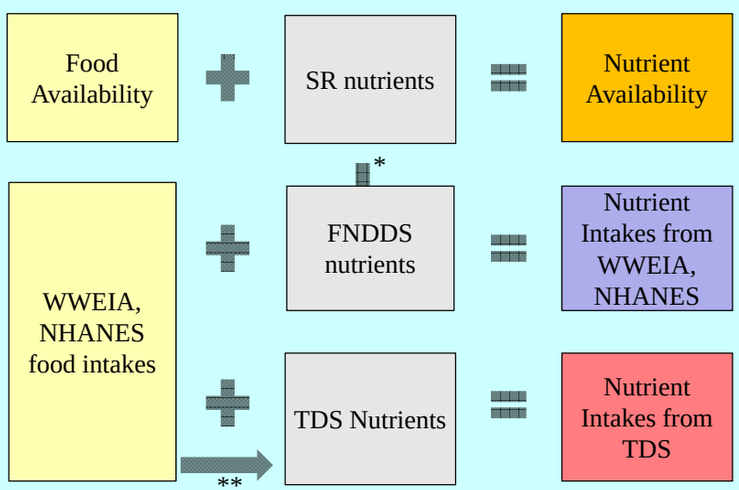
Analysis:

- The purpose and methodology of each listed monitoring activity, and their inter-relationships were examined.
- Per capita, mean daily availability and intakes of nutrients (weighted) were determined, and compared for nutrients common to the datasets. Sodium intakes were not compared, as the 3 systems are inconsistency in what is measured.

Major Federal Monitoring Activities:

Surveillance system	Purpose	Method for determining nutrient intakes	Key nutrient variables	Sponsor Agency
Nutrient Availability Data System	Nutrient Availability in the U.S. food supply	Food availability data + SR nutrients	Per capita availability of food energy and 27 nutrients	ERS and CNPP, USDA
Total Diet Study	Nutrients in the Market Basket	WWEIA, NHANES food intakes + TDS nutrients	Per capita intake of 16 elements	FDA, DHHS
What We Eat In America, NHANES	Individual Nutrient Intake	WWEIA, NHANES food intakes + FNDDS nutrients (based on SR)	Per capita intake of food energy and 64 nutrients	NCHS, CDC, DHHS and ARS, USDA

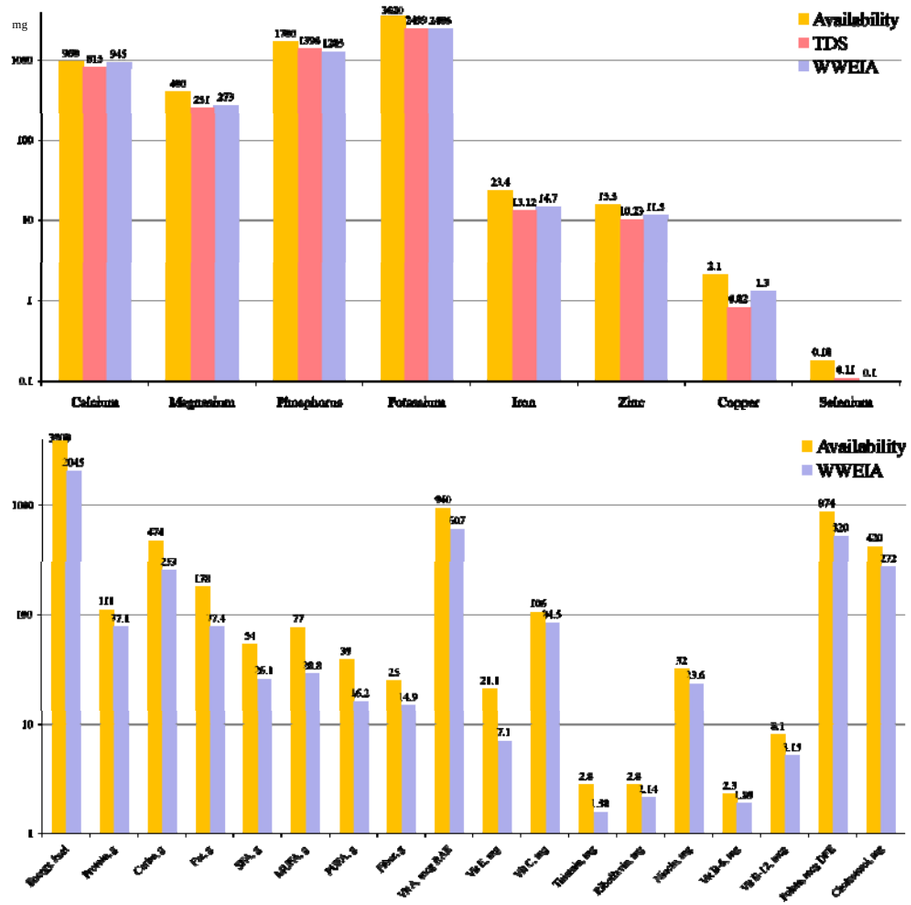
How are they related?



* Nutrient data for about 3,000 foods in SR 22 provided the basis for the 7,174 foods in FNDDS 4.1

** Food lists for TDS market basket are based on foods reported in WWEIA, NHANES

How do mean intakes/availability of nutrients compare?



Conclusions:

- Differences in intakes from WWEIA and TDS were within ±20%, except for copper.
- Food Availability data does not adjust for waste and spoilage. Hence, Nutrient Availability was higher, usually by ~20 to 40%. The differences were greater for proximates, fatty acid classes, and vitamin E, but less for calcium. The difference may be higher for fat components as all separable fat on meat and waste grease from deep frying are included. Reasons for the inconsistencies need to be reviewed by the sponsor agencies.
- Similar comparisons for food intake would be of interest.
- It is important to consider the purpose of these datasets and the methods used when comparing results.

The views expressed in this presentation are those of the authors and do not necessarily reflect the positions of USDA or FDA