

SAMPLING PLANS FOR MULTIVITAMINS AND DIETARY SUPPLEMENTS CONTAINING OMEGA-3 ACIDS IN THE DSID

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DSID: What is it?

A database validated by analytical data, for key ingredients of public health importance in dietary supplements

Funded by:

**Office of Dietary Supplements, NIH
U.S. Department of Agriculture**

Collaborators with Nutrient Data Laboratory:

**Office of Dietary Supplements, NIH
National Cancer Institute, NIH
National Center for Health Statistics, CDC
Food Composition and Methods Development Lab, BHNRC, ARS
National Institute of Standards and Technology
Food and Drug Administration**

DSID Home Page

Dietary Supplements Ingredient Database - Microsoft Internet Explorer

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Address <http://sis4.nlm.nih.gov/dsid/> Go Links

Office of Dietary Supplements
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DSID Research and Data

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Welcome to the Dietary Supplement Ingredient Database (DSID) home page!

The Nutrient Data Laboratory (NDL), Beltsville Human Nutrition Research Center (BHNRC), part of the USDA Agricultural Research Service, working with the Office of Dietary Supplements, NIH, and other federal agencies, has developed a Dietary Supplement Ingredient Databases (DSID) to estimate levels of ingredients in dietary supplement products.

This first data release of the DSID (DSID-1) provides access to information on analyzed levels of nutrients in adult multivitamin/minerals (MVMs) used in the U.S. These estimates were derived from analytical data generated for a representative set of adult MVM products collected from various U.S. locations.

At this time, the DSID is intended primarily for research applications. For each of eighteen nutrients, product data were grouped by nutrient levels rather than by product names. Statistical regression analyses were used to estimate mean percent differences from label and variability at specific nutrient levels for each of the eight vitamins and ten minerals analyzed. These data are appropriate for conducting population studies of nutrient intake, rather than for assessing individual products.

The main features of DSID include [data files](#), a [research summary](#), and an adult MVM [calculator](#). Regression equations are available for researchers with expertise to calculate multi-nutrient estimates of adult MVM supplement composition.

//dietarysupplementdatabase.usda.nih.gov
or
//dsid.usda.nih.gov

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DSID First Release: DSID-1

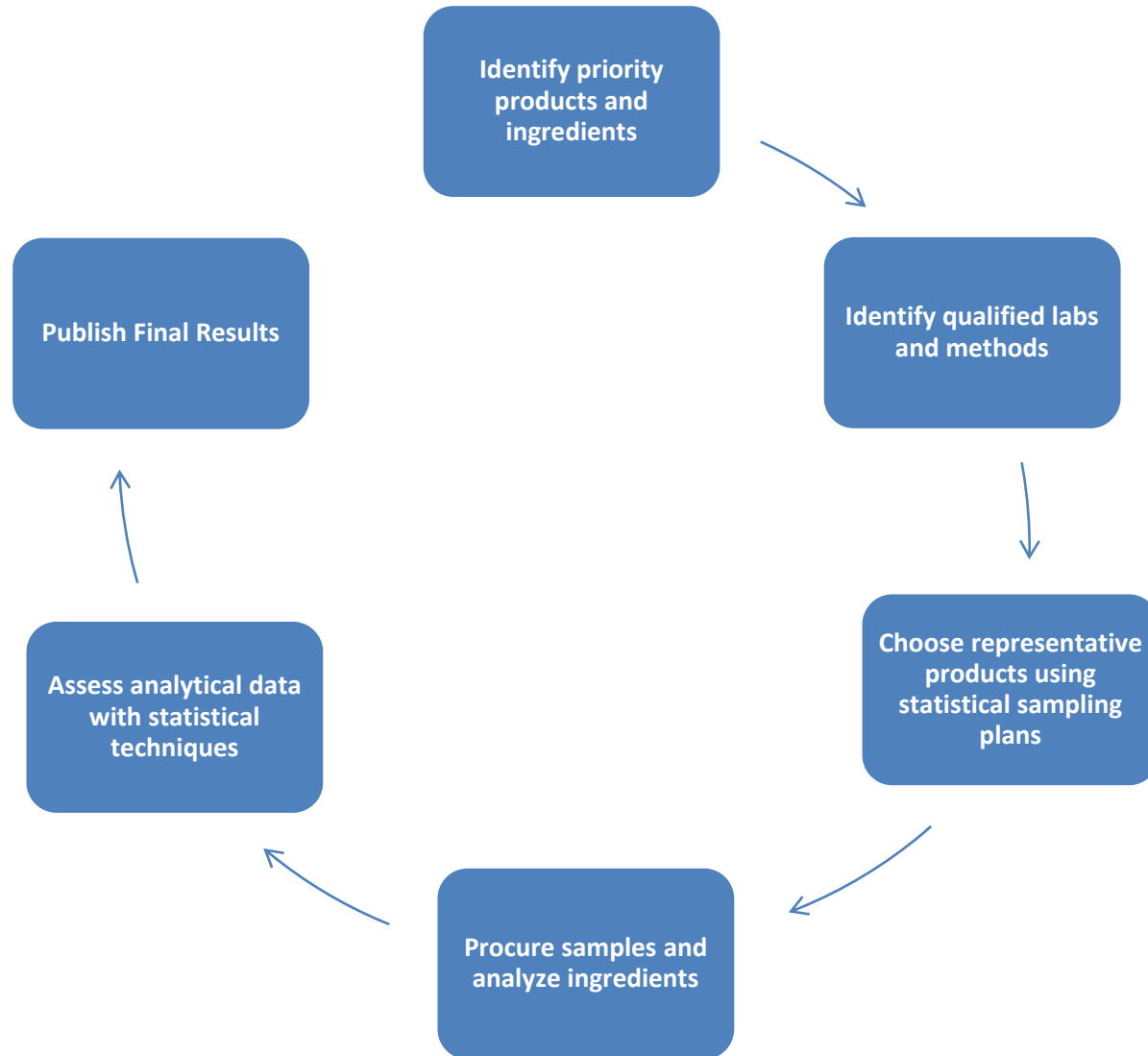
- ❑ Provides analytically-based estimates of nutrient values in adult MVMs

- ❑ Data files include:
 - 1) Predicted values and SEs for 18 individual nutrients at a range of labeled levels for adult MVMs
 - 2) Links between nutrient estimates and NHANES files

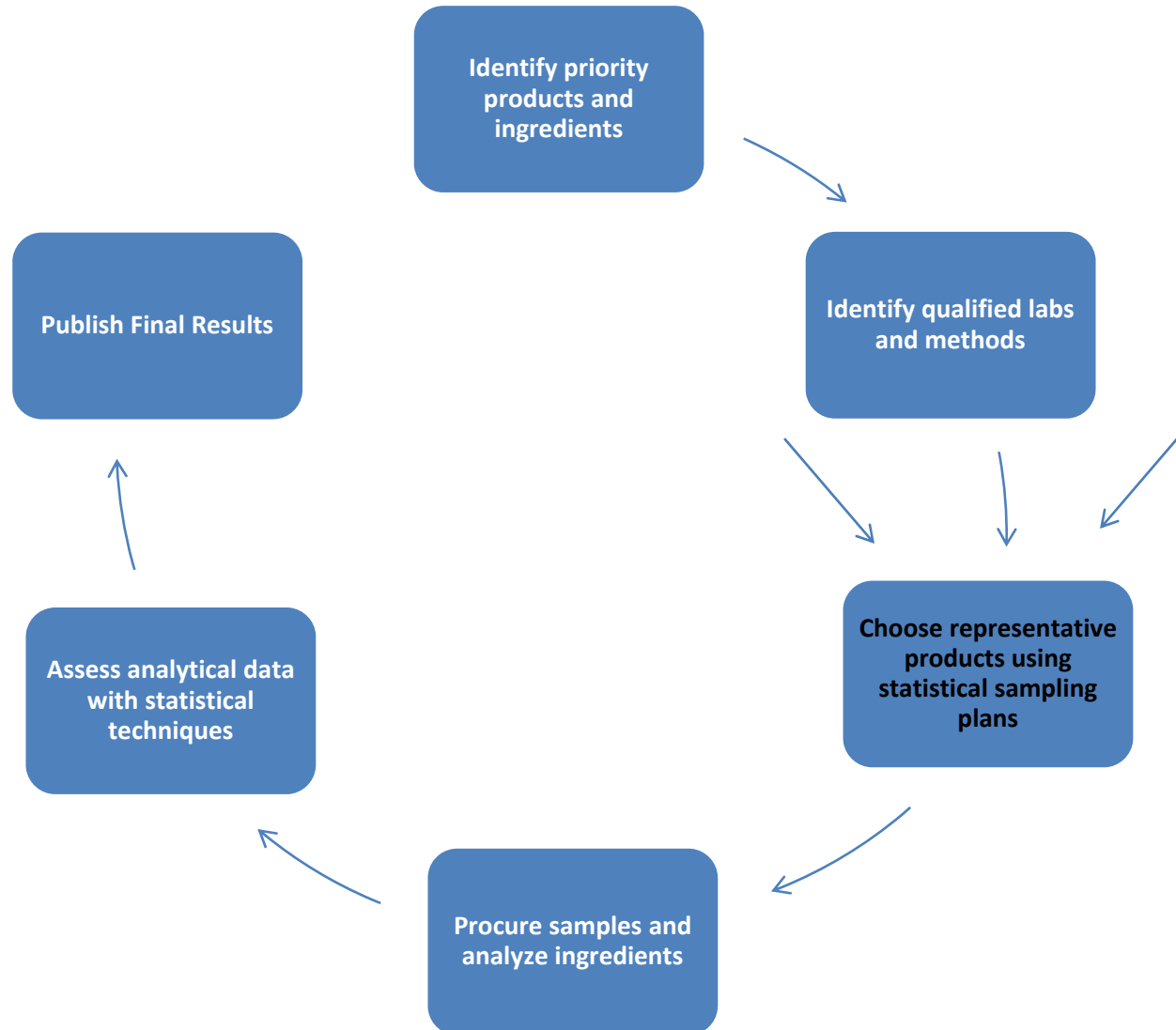
[//dietarysupplementdatabase.usda.nih.gov](http://dietarysupplementdatabase.usda.nih.gov)



DSID Study Design Steps



DSID Study Design Steps



DSID Study Goals

□ Adult & Children's MVM study objectives:

To examine relationships between label and analytical values for *vitamins and minerals* and assess variability for specific nutrients in *MVM products*.

To provide nationally representative estimates for vitamins and minerals in commonly reported *MVM products*.

□ Omega-3 study objectives:

To investigate relationships between label and analytical levels of *EPA, DHA, ALA, and total omega-3s* and assess variability in *omega 3 fish, flaxseed, and blend products*.

To provide nationally representative estimates for omega-3 levels in commonly reported *omega-3 products*, based on labeled content or other label information.

DSID Sampling Plan Strategy

Goal:

Choose representative dietary supplement products to analyze

Approach:

- Develop study-specific plan, using market reference data
- Purchase samples from multiple channels
- Purchase retail samples from multiple U.S. areas
- Obtain multiple lots



Reference Data for Sampling Plans

Recent NHANES (data files)

Independent marketing firms (user data)

Nutrition Business Journal (sales data)

Store surveys (observations)

Multi Ethnic Cohort, TEDDY, FDA (studies/reports)

Scientific and industry experts

Internet



Multiple Channels

RETAIL SALES

Mass Merchandisers

Drug Stores

Grocery Stores

Warehouse Club Stores



Multiple Channels

RETAIL SALES

Mass Merchandisers

Drug Stores

Grocery Stores

Warehouse Club Stores



Natural Food/Health

Health Food Stores

“Nutrition” and “Vitamin” Stores



Multiple Channels

RETAIL SALES

Mass Merchandisers

Drug Stores

Grocery Stores

Warehouse Club Stores



Natural Food/Health

Health Food Stores

“Nutrition” and “Vitamin” Stores



DIRECT SALES

Multi-level Marketers



Internet



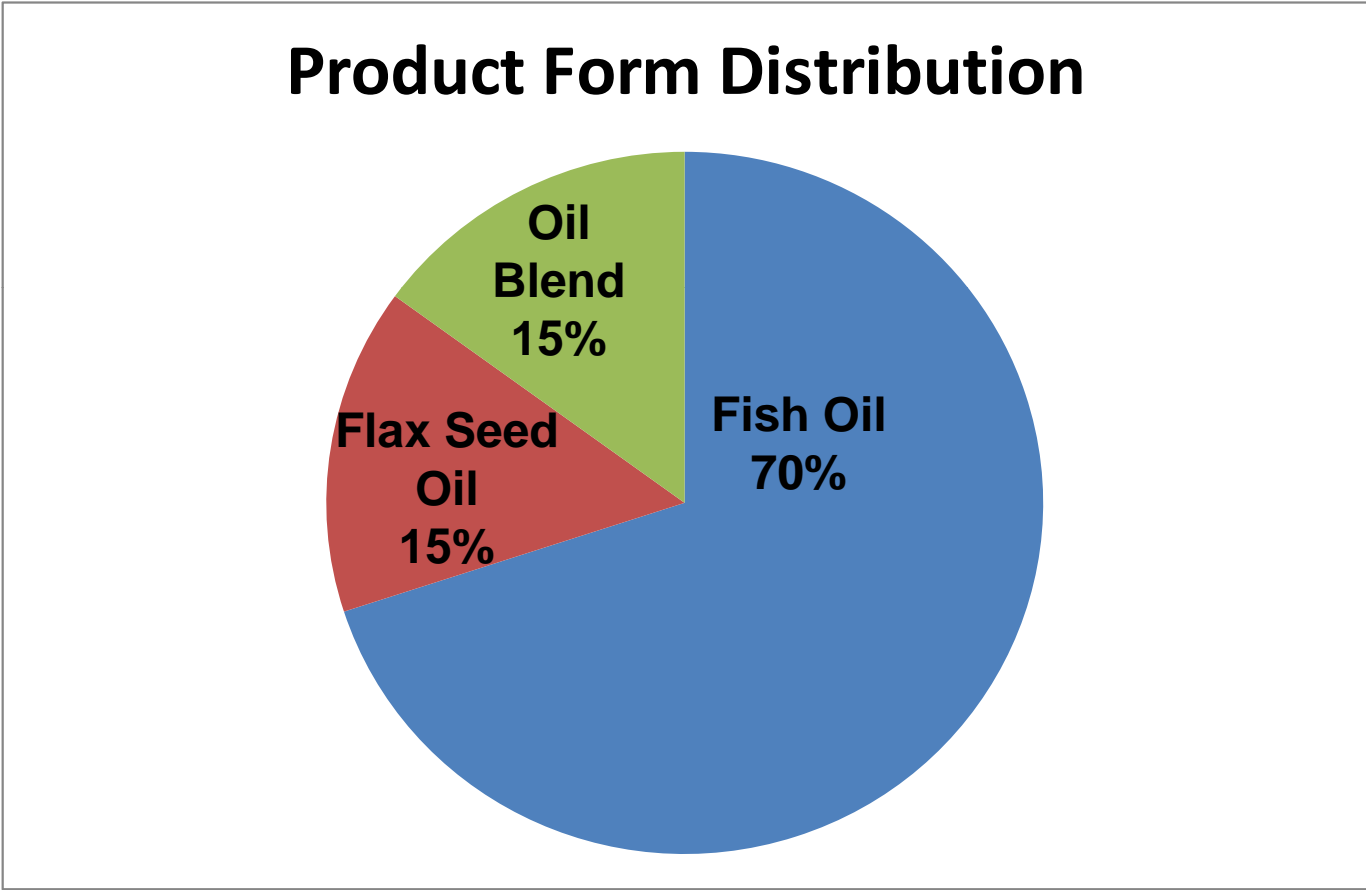
Health Practitioners



Nationwide Sampling Map

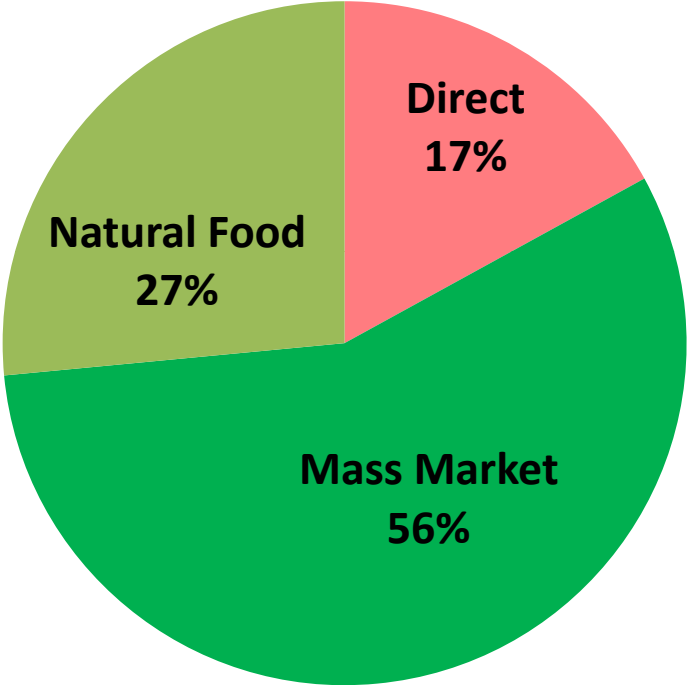


Omega-3 Products Sampling Plan



Omega-3 Products Sampling Plan

Market Channel Distribution



Sampling Plan: Omega-3 Fatty Acid Supplements



TOP–

Identified commonly reported products.

N=20

Goal: 6 lots/product

LMS –

Identified brands and forms.

Retail sales: N= 50

Direct sales: N=10

Goal: 3 lots/product

Sampling Plan: Adult and Children's MVMs



TOP–

Identified commonly reported products.

Total >50% of market share.

N=35 (adult)

N= 20 (children's)

Goal: 6 lots/product

LMS –

Identified, stratified, and randomly selected

Lower Market Share products.

N=80 (adult)

N=45 (children's)

Goal: 3 lots/product

Sampling Plans: Adult and Children's MVMs

- Identified specific products for purchase, using market share information.
- Evaluated the labeled levels of products purchased, to identify any gaps in nutrient levels.
- Used market share information to weight analytical results for each product for regression analysis, for making predictions for national estimates.



Supplement Facts

	Amount Per Serving	% Daily Value*
Vitamin A (as Retinyl Acetate and Beta-Carotene)	3,500 IU	70%
Vitamin C (as Ascorbic Acid)	60 mg	100%
Vitamin D (as Cholecalciferol)	400 IU	100%
Vitamin E (as d-Alpha Tocopherol Acetate)	40 IU	100%
Vitamin K (as Phylloquinone)	10 mcg	100%
Vitamin B-1 (as Thiamin Mononitrate)	1.5 mg	100%
Vitamin B-2 (as Riboflavin)	1.7 mg	100%
Vitamin B-3 (as Nicotinamide)	20 mg	100%
Vitamin B-5 (as Pantoic Acid)	2 mg	100%
Vitamin B-6 (as Pyridoxine Hydrochloride)	400 mcg	100%
Vitamin B-12 (as Cyanocobalamin)	25 mcg	100%
Biotin (as D-Biotin)	30 mcg	100%
Inositol (as D-Inositol)	10 mg	100%
Calcium (as Calcium Carbonate and Dicalcium Phosphate)	200 mg	100%

*Percent Daily Values are based on a diet of other people's misdeeds.

Plans for DSID 2nd Release

DSID-2

- ❑ Analytically-based estimates of children's MVM nutrient values
- ❑ Updated adult MVM nutrient data

Data files:

- 1) Predicted values and SEs for prioritized nutrients at a range of labeled levels for children's MVMs
- 2) Links between nutrient estimates and NHANES files



Summary

- Statistically-based sampling plans are necessary to identify representative products for chemical analysis for national estimates in DSID
- Sampling plan development is study-specific
- Current market-based references are essential
- Total nutrient estimates using data from dietary supplements plus food can be used for accurate assessment of total intake

