

NHANES 2001–2002 Data Documentation
September 2005
Household Interview Questionnaire

Dietary Supplement (DSQ_B)

Survey Years Included in this File: 2001–2002

DSQ_B Section Content and Characteristics Overview:

Dietary Supplement Data

- Reported use of vitamins, minerals, and other dietary supplements
- Supplement name ingredients, amounts, and serving size
- Derived variables
- Related information on dietary supplements and ingredients

Eligible Sample: All Participants

Administration: Household interview

- Self-report for participants 17 years of age and older
- Proxy respondent for participants 16 years and younger

Topics Included in this Document:

Sections

- Differences between the 2001–2002 and the 1999–2000 DSQ data releases
- Data collection
- Data processing, editing, and file preparation
- Development of the NHANES dietary supplement label database
- Data file structure
- Quality control procedures
- Analytic notes
- Data access and analyses

Appendices

- Handcard DSQ1
- Vitamins / Minerals on the “Strength Only” List
- Matching Codes
- Created Default Supplements and Antacids
- Source of Supplement Information
- Conversion Factors for Nutrient Compounds
- Formulation Type
- Rules for Classifying Ingredients
- Reported Dosage Serving Size Units
- Label Serving Size Units
- Ingredient Units

- Ingredient Classification
- Data File Structure and Relationships

Differences between the 2001-2002 and the 1999-2000 DSQ Data Releases (October 2003):

Supplement Characteristics:

1. 01–02: Nutrient strength only: no brand name collected for common single- or double-nutrient supplements. Generic name only was released (see Appendix 2 Vitamins/Minerals on the “Strength Only” List):
 - 99–00: brand name: released if known, otherwise generic name released
2. 01–02: If simple nutrient name (e.g. iron, calcium) released, quantity refers to nutrient. If compound nutrient name released (e.g. ferrous sulfate, calcium carbonate), unclear whether quantity referred to compound or nutrient itself:
 - 99–00: nutrient name and amount was taken directly from label, not edited
3. 01–02: Reported serving size unit and label serving size unit are reported separately (Appendix 9):
 - 99–00: serving size and label units are combined in one variable

User Characteristics

1. 01–02: Frequency of supplement use: reported as number of days a supplement was taken in the past 30 days and quantity of supplement taken per day:
 - 99–00 data: reported as quantity taken per day, week, or month.

Data Collection:

Dietary Supplement and Antacid Data Collection

1. Supplements:
 - Participants shown list of examples of dietary supplement (Appendix 1: Handcard DSQ1)
 - Asked if taken any vitamins, minerals or other dietary supplements in past 30 days
2. Antacids:
 - Asked if taken any non-prescription antacids in past 30 days
3. Asked to bring supplement and antacid containers to interviewer
 - If no container available, asked for detailed name

Recording Procedure

1. Interviewer checks if supplement on “Strength Only” list of common nutrient supplements (Appendix 2: Vitamins / Minerals on the “Strength Only” list)
 - Supplements on list:
Records no brand, only nutrient strength(s)
 - Other supplements and antacids:
Enters complete name, including qualifiers (e.g. “iron-free,” “high potency,” and “with lutein”);

Views list of supplement names on computer:

Selects one if exact match to supplement seen;

Otherwise, no match is made

Participants' Use of Supplements and Antacids (See DSQ_B Codebooks)

1. How long taking?
2. How many days of past 30?
3. How much taken each day?
4. Up to 20 supplements can be recorded

Supplements or Antacids Recorded as Prescription Medications (See RXQ_B Codebook)

1. Product name recorded
2. No strength recorded unless part of name
3. No data on how many days or how much product was taken per day

Data Processing, Editing, and File Preparation:

Matching a Reported Supplement to Known Supplement

1. NCHS nutritionists review names recorded by interviewer
2. Match reported supplement with known supplement
Based upon detailed name and/or version on market at time of interview
3. Supplement reformulations
If possible, use name change to match to reformulation
Otherwise, use 5-month lag time for matching (manufacturer advice)
4. Matches are made with varying degrees of precision (DSDMATCH)
See Appendix 3: Matching Codes

Generic and Default Matches

1. Generic supplements: all supplement ingredients and amounts known; match code = 3
 - Single or dual ingredient (e.g. calcium 600mg; calcium 600 + vitamin D 200 IU);
 - Multi-vitamins by manufacturer of several brands:
All have same ingredients and strengths; e.g. brand X multivitamin reported; brand Y (same manufacturer) known
2. Default supplement: not all supplement ingredients and amounts known; match code = 5 (see Appendix 4: Default Supplements and Antacids)
 - Created based upon similar supplement types:
best selling; most frequently reported in NHANES; or most commonly available at stores or online
2001–2002 and 1999–2000: identical default supplements used

Variable Creation

1. **DSDANTA** (antacid reported in DSQ section): indicator variable
 - if antacid recorded in dietary supplement section (DSQ); coded 1
 - if antacid recorded in antacid section (RXQ); coded 2
 - if product was dietary supplement and NOT antacid; coded 0

- If the same antacid recorded in both DSQ and RXQ: product remained in DSQ, removed from RXQ antacid section
2. **DSDMTCH** (matching code):
 - See “Appendix 3: Matching codes” and Section III, A and B
 3. **DSDCOUNT** (number of supplements taken):
 - All supplements (DSQ, RXQ, and antacids in DSQ; i.e. DSDANTA = 1): count as 1 supplement in DSDCOUNT
 - Supplements named 9999 or 7777 (DK or R): count as 1 in DSDCOUNT
 - No clear evidence that they are not supplements
 - They were recorded as a supplement
 - Antacids not reported in DSQ (i.e. in RXQ section; DSDANTA = 2): do not count as supplements, not included in DSDCOUNT
 - Non-supplements reported in the DSQ section: do not count
 4. **DSDCNT** variables: DSDCNTV, DSDCNTM, DSDCNTA, DSDCNTB, DSDCNTO
 - Number of vitamins, minerals, amino acids, botanicals, and other ingredients in supplement

Data Editing and Release

1. **DSD010**: Indicator of any dietary supplement use
 - Participants who took a product coded as a supplement in the last 30 days (DSDCOUNT ≥1): coded 1
 - Supplements mistakenly recorded as RXQ antacid or prescription medicine: moved to the DSQ section, counted as supplements
 - Participants who reported an antacid containing calcium or magnesium in the last 30 days that was recorded only in RXQ antacid section (DSDANTA = 2), and did not take any dietary supplement: coded 2
 - Participants who did not take any product determined to be a dietary supplement in the last 30 days (DSDCOUNT = 0): coded 2, supplement may mistakenly have been reported
 - Examples of products determined not to be supplements: foods (garlic cloves, raisin bran cereal, PowerBar), drinks (Ensure, Gatorade, tea), over the counter drugs (aspirin, laxatives, electrolyte replacement fluids), homeopathic medicines, prescription medicines other than supplements
 - Prescription medicines and analgesics moved from DSQ to appropriate RXQ section for data release
2. **DSDSUPP**: Name of supplement
 - Recorded supplement name: matched to known supplement name
 - Known supplement has ingredient information
 - Matches: made with varying degrees of certainty (Appendix 3)
 - When no match found: product assigned match of 6, “no match”
 - Unmatched supplement: ID begins with a 6, name is “no product information”
 - Regional brand name product: released with generic name
 - Unknown product names: coded as “7777” and “9999” in data release

3. **DSD090**: How long has the supplement been taken? (days)
 - Responses recorded in days, weeks, months, or years for release
 - To facilitate analysis: responses were converted to days
365 days per year, 30.4 days per month, 7 days per week
 - Participant age: recorded at examination; interview may occur days or weeks earlier
Data edited for release: adjusted length of time supplement used not to exceed child's recorded age
4. **DSD122Q** and **DSD122U**: Reported dosage quantity and unit (Appendix)
 - Refer to amount of product participant reported taking.
 - Dosage unit reported (e.g. teaspoon): sometimes differed from label serving size (e.g. dropper)
When equivalencies known: reported quantity and unit converted to label serving size quantity and unit for release (see below)
When unclear how to convert unit: label serving size used as dosage, since most people report taking standard serving size
 - Some dosage units used in the 1999–2000 data were unnecessary and removed: numbers associated with the remaining units are consistent with the 99–00 release
5. **DSDSERVQ** and **DSDSERVU**: Label serving size quantity and unit (form) (Appendix 10)
 - Taken from supplement label
 - Some supplement labels list a standard and an alternate serving size (e.g. dropper, milliliters)
 - Dosage and unit (DSD122Q, DSD122U): converted to the standard measure where possible
6. Fluoride, potassium, and niacin products
 - Most fluoride supplements released in DSQ, some may mistakenly remain in RXQ
Other prescription fluoride products (mouthwashes, toothpastes): released in RXQ
 - Some Rx fluoride supplements may mistakenly remain in RXQ
Potassium and niacin products in pharmacologic dosages: released in RXQ
7. Antacids
 - Antacids with calcium and magnesium: released in DSQ_B
 - Antacids reported as prescriptions not containing calcium or magnesium: released in RXQ_B
 - Other antacids: not released
Cannot estimate total antacid use
 - **DSDANTA**: denotes whether report was in DSQ_B or RXQ_B
Indicates only where antacid was recorded; not necessarily intended use
 - Use can be dual (supplement and antacid)

Development of Dietary Supplement Database:

Data Collection in the Field

1. Record name
 - Interviewers record name of supplement from supplement container or person's report
2. Match to known product
 - Interviewer views supplement list on computer
 - Selects one only if judged to be exact match to supplement entered: otherwise, no match made
 - No ingredient information usually recorded by interviewer except short list of vitamin/mineral products (Appendix 2)

Data Processing at NCHS

1. Obtain supplement label information
 - Attempt to obtain a label for each supplement reported
 - Sources: manufacturer, retailer, Internet, company catalogs, Physician's Desk Reference (PDR)
2. Enter label information into NHANES dietary supplement database
 - Supplement name; manufacturer; serving size amount and form; ingredients and amounts; operator to indicate that the amount is less than, more than or equal to the amount.
 - Taken directly from supplement facts box on the label or carton, if available, or the equivalent from other sources.
 - Ingredient may be a "proprietary blend"
 - Usually amount is specified for the blend
 - Individual blend ingredients do not have amounts
3. Additional information entered into database
 - Supplement formulation type (Appendix 7): based upon label wording or appearance
 - Ingredients classification (Appendix 8)
 - beta-carotene classified as "other," not a vitamin
 - Generic and default supplements (see Sections III and VII)
 - Supplement names and ID numbers; serving size amount and unit; ingredient name and ID number; quantity, unit and category; blend flag, name and ID number; source of information; and formulation type classifications

Limitations of Supplement Label as a Data Source

1. Supplement composition not verified with analytical testing
 - database contains label information only
2. Label information may not be available
 - Alternate sources (internet, PDR) may not accurately reflect label (apparent name or ingredients)

3. Supplement labels may change in appearance
 - Name change, no content change
 - Content change, no name change
 - Indent to diamond Both change
4. Updating Labels
 - Request label updates from manufacturers or retailers yearly
response not complete
 - Update when reformulation noticed in data, on internet
no systematic notification of reformulations from companies
5. Appendix 5 lists Source of Supplement Information
 - Label or manufacturer information is more reliable than internet

Limitations and Editing of Ingredient Data

1. Ingredients may be listed in various ways:
 - elemental form (e.g. calcium);
 - compound;
 - plant form (e.g. extract, concentrate, oil) or plant part (e.g. root, leaf);
 - percentage (e.g. beta carotene- % of vitamin A); and
 - blend or complex (e.g. bioflavonoid complex; proprietary blend)
2. Nutrient amounts generally refer to actual nutrient, even if compound is listed
 - This is requirement for supplements in DSHEA,
 - Some products (e.g. made in other countries and antacids) may list compound amounts
3. Names of many compound ingredients were changed to generic names (e.g. calcium) except when not clear whether ingredient amount referred to ingredient only or to compound
4. Appendix 6: "Conversion Factors for Nutrient Compounds"
 - Refer to compounds listed on supplement labels of products in 2001–2002 data
 - Based upon literature searches
 - May contain errors; users should verify these conversion factors
 - Several conversions factor exist for ferrous sulfate depending upon form (may not be specified on the label). Conversion factor in Appendix 6 is for most common ferrous sulfate form

Data File Structure:

The data relating to dietary supplements are being released in five separate files. The files can be linked by participant id, supplement id, or ingredient id. This structure is used to avoid unwieldy record length. The content of each file is described below. To minimize the size of the files for downloading, names of supplements, ingredients, etc are included in a format library (DSQFMT) rather than as variable names. For instructions on formatting these files, refer to the DSQ Readme file.

File 1

1. Variables indicate whether a person took a dietary supplement and how many supplements were taken in the past 30 days

File 1: Supplement counts	
Variable Name	Label
SEQN	Respondent sequence number
DSD010	Any dietary supplements taken?
DSDCOUNT	Total # of dietary supplements taken

File 2

1. Variables describe the person's use of each supplement taken; variables pertaining to the supplement itself
2. Separate record exists for each supplement a person took
3. Text descriptions of supplement name are in a format library (DSQFMT).
4. When no match can be made, matching code is 6, files 3–5 omitted

File 2: Supplement records	
Variable Name	Label
SEQN	Respondent sequence number
DSDSUPID	Supplement ID number
DSDSUPP	Supplement name
DSD070	Was container seen?
DSDMTCH	Matching code (Appendix 3)
DSD090	How long supplement taken (days)?
DSD103	Days supplement taken, past 30 days
DSD122Q	Quantity of supplement taken per day
DSD122U	Dosage form (Appendix 9)
DSDANTA	Antacid reported as a dietary supplement

File 3

1. Contains general information about the supplement derived from the supplement label
2. Count of the number of each type of ingredient (DSDCNT variables) was created by NCHS (see Appendix 8: Rules for Classifying Ingredients)
3. Serving size quantity and unit are taken from Supplement or Nutrition Facts box on the label.
 - Units include: tablet, softgel, spray, teaspoon, ml, etc.
4. Label may include alternative serving size (e.g. 1 dropperful = 1 mL).
5. Text descriptions of supplement name, information source, formulation type, and serving size unit are located in format library (DSQFMT).

File 3: Supplement information	
Variable Name	Label
DSDSUPID	Supplement ID number
DSDSUPP	Supplement name
DSDSRCE	Supplement information source (Appendix 5)
DSDTYPE	Formulation type (Appendix 7)
DSDSERVQ	Serving size quantity
DSDSERVU	Serving size unit (Appendix 10)
DSDSERVA	Alternative serving size
DSDCNTV	Count of vitamins in the supplement
DSDCNTM	Count of minerals in the supplement
DSDCNTA	Count of amino acids in the supplement
DSDCNTB	Count of botanicals in the supplement
DSDCNTO	Count of other ingredients in the supplement

File 4

1. Contains information on supplement ingredients and quantity for each supplement, including blends
2. Blend ingredients with no amounts are in separate file (File 5), which can be linked to File 4.
3. Nutrient ingredients listed basically as they appear on a particular label
 - list common name of nutrient if nutrient amount known
 - list compound name if unclear whether amount referred to nutrient or compound
4. Ingredients are categorized by NCHS as vitamin, mineral, amino acid, botanical, or other (See Appendix 8: Rules for Classifying Ingredients, and Appendix 12: Ingredient Classification)
5. Blend flag (yes/no) indicates whether the supplement includes a proprietary blend (ingredients without quantities; See File 5).
6. Text descriptions of ingredient name, unit, and category are in a format library (DSQFMT).

File 4: Ingredient Information	
Variable Name	Label
DSQSUPID	Supplement ID number
DSQSUPP	Supplement name
DSDINGID	Ingredient ID
DSDINGR	Ingredient name
DSDOPER	Ingredient operator (<, =, >)
DSDQTY	Ingredient quantity
DSDUNIT	Ingredient unit (Appendix 11)
DSDCAT	Ingredient category (Appendices 8 and 12)
DSDBLFLG	Blend flag

File 5

1. Contains information on proprietary blends (also listed as ingredients in File 4: Ingredient information file)
2. Ingredients in blends have no amounts
3. Most are botanicals or “other” ingredients, few are nutrients
4. Text descriptions of the ingredient name, blend component name and blend component category are in a format library (DSQFMT)

File 5: Supplement blend	
Variable Name	Label
DSDINGID	Ingredient ID number
DSDINGR	Ingredient name
DSDBCID	Blend component ID
DSDBCNAM	Blend component name
DSDBCCAT	Blend component category

Quality Control Procedures:

Trained Nutritionists Reviewed Incoming Data and Matched Reported to Known Supplements from the NHANES Database, and

1. sought additional supplement labels as needed;
2. assigned generic or default supplements as appropriate;
3. transferred or removed inappropriate products; and
4. assigned matching codes as described in Appendix 3: Matching Codes
 - coding reviewed by the coding supervisor and adjusted as necessary

Analytic Notes:

Differences between the 2001–2002 (DSQ_B) Release and the 1999–2000 (DSQ) Release Requiring Attention in Analysis

1. 2001–02: If nutrient name is in simple form (e.g. iron, calcium), the quantity refers to the nutrient itself. Nutrient units were converted to one standard unit. If nutrient name in release is a compound (e.g. ferrous sulfate, calcium carbonate), we could not determine whether the amount referred to the nutrient or the nutrient compound.
 - 1999–2000: Nutrients were listed exactly as they were on the label, no editing. To analyze 1999–2002 data, need to convert different nutrient names and units to common ones. (Non-nutrients were not converted in either dataset)
2. 2001–02: Intake frequency is always the number of times that a supplement was taken in the past 30 day.
 - 1999–2000: Frequency reported as times per day, week or month. If “per day or per week” used, then need to convert all to days

3. Reported serving size unit (what the person took) and label serving size unit (recommended dosage) are distinct variables; alternative label serving size also released if available (e.g. 1 dropper = 1 ml). Dosage reported was edited to be consistent with label standard or alternate serving size.
 - 1999–2000: Dosage reported may not be consistent with product, especially for default supplements (e.g. report of 1 tsp; default supplement may be a tablet). User needs to assess comparability and if necessary, adjust dosage taken. Because most people report taking a standard dose, using the standard dosage would often be a logical choice if dose amount unknown.

Matching Codes (See Section V. Data Processing and Appendix 3)

1. For “reasonable” and “default” matches (Match codes 4 and 5): less certainty that ingredient type and amount in supplement assigned exactly match those in supplement actually taken than for codes 1–3.
2. Match codes of 6: no match could be made with any degree of certainty.

Entries of Refused and Don’t Know

1. If respondent “refused” or answered “don’t know” to DSQ010: codes 7777 or 9999, respectively, used in both DSD010 and DSDCOUNT; all other variables coded as missing.
2. If respondent “refused” or answered “don’t know” to supplement name: name of the variable is 7777 or 9999; matching codes are 7 and 9; information on participant’s use of the supplement is retained.

DSD070: Was the Container Seen?

1. When the interviewer records a supplement name directly from the supplement container a more precise name for a supplement can be recorded by the interviewer, and thus a more precise match to a known supplement can be made.
2. A participant’s report of the supplement name is usually less precise (for example, multivitamin/multimineral are often reported as multivitamins) than if the container is seen.
3. The matching code generally reflects imprecision, but analysts should be aware that precision is greater when a container is seen.

Supplement ID Numbers

1. Supplement ID numbers are 10 digits long; all Supplement IDs begin with the number ‘1’. Next 3 digits (positions 2–4) are ‘888’ if supplement was created by NCHS as generic or default product; otherwise the digits in positions 2–4 coded ‘000’. Next 4 digits (positions 5–8) assigned automatically; do not indicate anything about supplement.
2. The last 2 digits (positions 9–10) indicate formulations of the same supplement: the first formulation entered into the database = 00, the first reformulation = 01, the next = 02, etc. These are reformulations of the same product: different versions (e.g. liquid vs. tablet, with iron vs. without iron, regular vs. high potency) have different 4 digit numbers (positions 5–8).
3. When a product name was entered as “refused” or “don’t know”, the ID number is a string of 7’s or 9’s.

Unidentifiable Products

1. If no corresponding product label could be found for a reported supplement, nor could a reasonable default product be assigned, the report is counted as a supplement, since there is no evidence that they are not supplements. The product "name: is "no product information available" and given a match code of 6. The supplement ID number begins with 7 sixes followed by an assigned 3-digit number.

Using Self-Reported Data

1. NHANES data are self-reported and recorded by interviewers, and thus may contain inconsistencies or errors. Except when data entry is clearly recorded incorrectly, and the correct response can be confidently identified, possible errors or inconsistencies are not edited except as noted previously.
2. Users are advised to assess the data and edit it as deemed appropriate for the analyses being undertaken.

Special Notes on DSD103, and DSD122

1. In addition to truly missing data, missing values may be recorded in these fields because:
 - The participant reported the amount or frequency of supplement use as "varied";
 - supplements were recorded in the prescription medicine section which does not include these questions.

Release and Use of Supplement Brand Names

1. NCHS collects brand name information on supplements whenever feasible, to ensure as much accuracy as possible in finding the label information for the exact product taken, to provide the exact label ingredient information for this product. Products with very similar names but manufactured by different companies may contain different ingredient and for strengths.
2. Brand names that are available in a limited geographic area of the U.S. are not released; generic names are used for these products.
3. Brand names are usually released for multi-ingredient supplements that are matched with a high degree of product or brand certainty, as this information may be useful in the design of other surveys. However, matching of brand names to reported products may contain errors, and many matches are made to generic or default products, especially for private label brands. Thus, analyses of consumer usage by brand name using NHANES data may not be accurate and is not recommended.

Serving Size and Nutrient Estimation

1. When calculating the amount of a nutrient consumed from supplements, it is important to take serving size into consideration. For some supplements, the serving size may be more than one tablet, drop, teaspoon, etc. A person taking more or less would consume more or less of the nutrient than is listed on the facts box.

Counts of Ingredients in Supplements

1. For each supplement, this is the number (count) of ingredients in each ingredient category (vitamin, mineral, amino acid, botanical, other) listed in the facts box on the label, including ingredients listed within blends.

2. For products with blends, where the same vitamin or mineral was listed as both an ingredient with an amount and as part of a blend, the doubly-reported vitamin or mineral is only counted as one.

Use of Format Libraries

1. The text labels for supplements, ingredients, units, etc. are provided in a separate data file called "Supplement Format File (DSQFMT)" in order to keep the data files a reasonable length. Refer to the DSQ Readme file for DSQFMT for details.
2. SAS code to link the Supplement Format File with the data files or to obtain a list of formatted text labels is provided in the documentation.
3. A list of the supplement and ingredient ID numbers and names can be made by running a proc freq of these variables and using the format library to link the name to the ID number.

Deriving Nutrient Estimates from Dietary Supplement Data

1. Dietary supplement and antacid intake data (DSQ) refer to the past 30 days. The data necessary for computation of total nutrient intake are:
 - personal usage data (DSQ files 1& 2);
 - dietary supplement composition data (DSQ files 3–5)
4. The analyst must combine these files: File 1 portrays a participant's overall use of supplements; file 2 refers to the person's usage of one particular supplement; and files 3–5 refer to the content of one specific supplement.
5. DSQ codebooks, documentation, and data are described in the questionnaire section of this data release.
6. Dietary supplement data were reported as times per month in 1999–2000 and days in the past month in 2001–2002. For participants who took one supplement each day, one time per day, daily nutrient intake from supplements can be estimated directly from the label ingredients.
7. Intake of multiple supplements with the same nutrient(s), multiple use of the same supplement on the same day, and nutrients in blends must be taken into account in nutrient calculations. Nutrient names and the quantity units need to be synchronized and nutrient amounts from all these calculations must then be summed. Some nutrient amounts are for a nutrient compound (generally a foreign-made product or an antacid) and these must be converted to a nutrient amount (see Appendix 6 for recommended conversions).
8. If one or more supplements were taken less than daily, estimation of supplement nutrient intake could be calculated for a month, a daily average, highest possible daily intake, or lowest non-zero intake.
 - see analytic notes (L) above and Appendix 13 for information on how to link the files containing the person, supplement, and ingredient variables

Combining Nutrient Estimates from Dietary Supplement plus Food-Recall Data

1. To estimate total dietary nutrient intake, nutrients from diet, supplements, and antacids should be combined. Because of different data collection, referent time periods, and release systems, these data require some manipulation and assumptions to combine. Consequently, the resultant total may not provide a very accurate estimate of daily total nutrient intake nor is a variance estimate directly available. This would need to be calculated using special programs developed for this purpose (e.g. C-Side).

1. Deriving nutrient quantity from dietary supplement requires extracting the nutrient content of each supplement, as described above. Dietary recall data (DRX) are released as total combined nutrient amount from all foods reported on the one day dietary recall; no derivation is needed (e.g. calcium quantities from all food sources are combined and released as a single one day quantity). RXQ codebooks, documentation, and data are located in the exam section of the data release.
2. Because of the different time referents for dietary supplement and food intake, an analyst must decide upon the most useful way to combine these data to estimate intake for a given purpose. For example, if supplement use was reported to be daily, the nutrient value from the supplement could be simply added to the recall nutrient value, although the time frames do not overlap. When some or all supplements were taken less than daily (1999-2000) or less than 30 times a month (2001-2002), the nature of the analysis and the data itself should guide the decision about nutrient calculation.
 - For instance, if a supplement were taken nearly monthly, an analyst could:
 - 1) assume intake to be daily;
 - 2) calculate monthly intake based on intake frequency;
 - 3) calculate average daily value from the monthly value; or
 - 4) analyze data only from people who took supplements daily
 - The latter would mean that the sample would no longer be representative of all supplement users, but should represent daily supplement users.
2. Because of the data differences, combining nutrient intake from these different variables to estimate total nutrient intake requires thoughtful consideration of the analytic goal and methods, and deserves accurate description of methods, assumptions, and weaknesses in any presentation of results.

Data Access

The five data files described in these notes are located on the NHANES website at:

1. <http://www.cdc.gov/nchs/about/major/nhanes/nhanes01-02.htm>.
2. For instructions general information about this data release, as well as how to access the SAS transport files, refer to:
http://www.cdc.gov/nchs/data/nhanes/nhanes_01_02/general_data_release_doc.pdf.
3. Additional general information about the release, including data analysis, is found at: http://www.cdc.gov/nchs/about/major/nhanes/nhanes01_02faqs.htm.
4. The NHANES Analytic guidelines give guidance on how to analyze data and sample programs:
http://www.cdc.gov/nchs/data/nhanes/nhanes_general_guidelines_june_04.pdf.
5. Additional information on using sample weights is given in
http://www.cdc.gov/nchs/data/nhanes/nhanes_01_02/weights_to_use.pdf.
6. Another SAS program sample is given at:
<http://www.cdc.gov/nchs/data/nhanes/examrgcd.txt>.

APPENDIX 1: HANDCARD DSQ1

ANTACIDS TAKEN AS A CALCIUM SUPPLEMENT	Tums Antacid/Calcium Supplement™, Tums E-X Antacid/Calcium Supplement™
BOTANICALS, HERBS, AND HERBAL MEDICINE PRODUCTS	Echinacea, ginseng, ginkgo, St. John's Wort, kava kava, dong quai, saw palmetto
FIBER TAKEN AS A DIETARY SUPPLEMENT	Fiberwafers™, Florafiber™, Herb-lax™, Psyllium™, Metamucil™, Fibercon™
INDIVIDUAL OR SINGLE VITAMINS	Vitamin A, vitamin C, or vitamin E
MULTIPLE VITAMINS (2 OR MORE COMBINED)	B complex, Centrum™, Flintstones™, vitamins C and E
INDIVIDUAL OR SINGLE MINERALS	Calcium, copper, iron, or zinc
MULTIPLE MINERALS (2 OR MORE COMBINED)	Iron and zinc, or calcium and magnesium
VITAMIN AND MINERAL COMBINATIONS	Centrum™ with minerals, Flintstones with iron™, Calcium plus Vitamin D
COMBINATIONS OF VITAMINS, MINERALS AND OTHER PRODUCTS	One-a-Day™ with Ginkgo
AMINO ACIDS	Lysine, methionine, and tryptophan
FISH OILS	Omega-3 fatty acids
GLANDULARS	Pancreas, liver, and organ extracts
ZINC LOZENGES	Coldeeze™

Include products formulated to improve athletic performance, muscle strength, memory, increase energy, etc.

APPENDIX 2: VITAMINS / MINERALS ON THE “STRENGTH ONLY” LIST

- Vitamin A
- Vitamin B1 (thiamin)
- Vitamin B6
- Vitamin B12
- Vitamin C
- Vitamin D
- Vitamin E
- Beta Carotene
- Calcium
- Chromium (chromium picolinate)
- Folate (folic acid)
- Iron (ferrous xxxate)
- Niacin (niacinamide)
- Zinc (zinc gluconate)
- Vitamins A & D
- Calcium & Vitamin D
- Calcium & Magnesium

APPENDIX 3: MATCHING CODES

1. Exact or near exact match; this is the only product that could match this entry.
2. Probable match; the match is not exact, but knowledge of the company's products strongly suggests that this is the only possible match choice. For example the entry may not specify strength or include words such as timed release, but no other options are available for this brand according to manufacturer or retailer information.
3. Generic match; product has known strength for all ingredients, either a) as part of name (e.g. vitamin C 500 mg) or b) because the manufacturer is known and NCHS has an identical product made by this manufacturer for a different distributor or retailer. Thus the ingredients and amounts are considered to be accurate despite an exact brand match.
4. Reasonable match; the product name may be incomplete or could be complete but other products of this brand also start with these same words so this cannot be assured. In these cases, the entered name is matched to either: a) the most frequently reported of these products in the NHANES 1999-2000 data, if this could be determined; b) the best selling product by this company that matches the entered name; or c) the most basic product by this company, as assessed by label wording.
5. Default match; the exact product could not be obtained because the name was imprecise or the exact brand product could not be located and no generic could be assigned. In these cases, the entered product was matched to a created default product based upon: a) the most commonly reported strengths for single ingredients; b) the most commonly reported brands for major multiple ingredient products such as multivitamins and multivitamin/multimineral for children, seniors, or adults, if available; or c) products manufactured by a large, private-label manufacturer. Because NHANES 1999-2000 data and sales data indicate that far more people take multivitamin/multimineral rather than just multivitamins; that numerous supplement labels calling a product a multivitamin actually also contain minerals; and that products that only exist as multivitamin/minerals are often named by NHANES participants as multivitamins, supplements recorded as multivitamins without further identifying information are matched to multivitamin/multimineral, not multivitamins.
6. No match; no product could be found and there was not enough detail in the name to assign a generic or default match with any confidence. The words "no product information available" are listed as the product name.
7. Refused; product name was refused.
9. Don't know; product name was not known.

APPENDIX 4: CREATED DEFAULT SUPPLEMENTS AND ANTACIDS

Default Supplement	Assigned Strength or Supplement	Selection of Assigned Strength or Supplement Based On:
Alfalfa	500 mg	Most Commonly Reported Strength
Algae	Your Life Natural Spirulina Blue Green Algae	Commonly Available Product
Amino Acid Capsules	Optimum Nutrition Superior Amino 2222 Caps	Commonly Available Product
Amino Acid Liquid	Twinlab Anabolic Liquid Amino Acid Concentrate Amino Fuel	Commonly Available Product
Antioxidant Vitamin And Mineral Formula	Naturite Antioxidant Vitamin And Mineral Formula	Commonly Available Product
B 50 B-Complex	Vitasmart B 50 B-Complex	Commonly Available Product
Balanced B 100 B-Complex	Vitasmart Balanced B 100 B-Complex	Commonly Available Product
Barley Caplet	Aim Barley Green Caplets	Most Commonly Reported Product
B-Complex With Vitamin C	The Medicine Shoppe B-Complex With Vitamin C	Commonly Available Product
Bee Pollen	500 mg	Commonly Available Strength
Beta Carotene	25,000 IU	Most Commonly Reported Strength
Bilberry	60 mg	Commonly Available Strength
Black Cohosh	540 mg	Most Commonly Reported Strength
Borage Oil	Spectrum Essentials Organic Borage Oil (1000 mg)	Commonly Available Product
Brewer's Yeast	Nature's Life Brewer's Yeast 500 Mg	Commonly Available Product
Calcium	500 mg	Most Commonly Reported Strength
Calcium & Magnesium	Calcium 334 mg, Magnesium 167 mg	Commonly Available Strength
Calcium + D + K	Viactiv 500 + D + K Soft Calcium Chews	Commonly Available Product
Calcium + Vitamin D 125 IU	Calcium 500 mg, Vitamin D 125 IU	Most Commonly Reported Strength
Calcium + Vitamin D 400 IU	Calcium 630 mg, Vitamin D 400 IU	Most Commonly Reported Strength
Calcium 500500 mg With Vitamin D	Calcium 500500 mg, Vitamin D 200200 IU	Most Commonly Reported Strength
Calcium 600600 mg With Vitamin D	Calcium 600600 mg, Vitamin D 200 IU	Most Commonly Reported Strength
Calcium Magnesium & Zinc	Vitasmart Calcium Magnesium & Zinc	Commonly Available Product

Default Supplement	Assigned Strength or Supplement	Selection of Assigned Strength or Supplement Based On:
Calcium Magnesium Phosphorus Liquid	Nature's Life Calcium Magnesium Phosphorus Liquid	Commonly Available Product
Calcium With Vitamin D	Calcium 500 mg, Vitamin D 200 IU	Most Commonly Reported Strength
Calcium With Vitamin D & Minerals	Caltrate 600 Plus Calcium With Vitamin D & Minerals	Commonly Available Product
Cherry Extract	Enzymatic Therapy Natural Medicines Cherry Fruit Extract	Commonly Available Product
Chewable Multivitamin With Fluoride	Copley Chewable Multivitamin With Fluoride (1mg)	Commonly Available Product
Children's Liquid Vitamin With Iron And Fluoride	Enfamil Tri-Vi-Flor 0.25 mg With Iron	Commonly Available Product
Children's Multivitamin/Multimineral	Vitasmart Children's Multivitamin/Multimineral Complete	Commonly Available Product
Children's Multivitamins Plus Iron	Vitasmart Children's Multivitamins Plus Iron	Commonly Available Product
Chromium Picolinate	Chromium 200 mcg	Most Commonly Reported Strength
Citrus Bioflavonoids	Twinlab Citrus Bioflavonoid Caps	Commonly Available Product
Cod Liver Oil Softgels	Vitasmart Cod Liver Oil Softgels	Commonly Available Product
Coenzyme Q-10	30 mg	Most Commonly Reported Strength
Colloidal Gold	10 ppm	Commonly Available Strength
Colloidal Silica Boron	Silica 5000 ppm, Boron 2 ppm	Commonly Available Strength
Colloidal Silver	10 ppm	Commonly Available Strength
Colostrum	Symbiotics New Life Colostrum 480 mg	Commonly Available Product
Cranberry	307 mg	Commonly Available Strength
Creatine Monohydrate	5000 mg (5 G)	Most Commonly Reported Strength
Daily Pak Maximum Multivitamin With Herbs And Minerals	Your Life Daily Pak Maximum Multivitamin With Herbs And Minerals	Commonly Available Product
Echinacea	400 mg	Most Commonly Reported Strength
Echinacea & Goldenseal	Echinacea 113 mg, Goldenseal 25 mg	Commonly Available Strength
Elderberry Liquid	Nature's Way Sambucol Black Elderberry Extract	Commonly Available Product
Enzymes	Genuine N-Zimes Dr. Howell's Original Formula 1	Commonly Available Product
Ephedra	850 mg	Commonly Available Strength

Default Supplement	Assigned Strength or Supplement	Selection of Assigned Strength or Supplement Based On:
Essential Fatty Acids	Now Foods Omega 3-6-9 Essential Fatty Acids Flax, Soy, Borage And Wheat Germ Oil	Commonly Available Product
Ester-C	Your Life Ester-C 500500 mg With Bioflavonoids	Commonly Available Product
Evening Primrose Oil	500 mg	Commonly Available Strength
Fat Burner	Weider Fat Burners	Commonly Available Product
Ferrous Sulfate Iron Tablets	325 mg (65 mg Elemental Iron)	Most Commonly Reported Strength
Fish Oil	1000 mg	Most Commonly Reported Strength
Flax Seed Oil	1000 mg	Commonly Available Strength
Fluoride Tabs	Sodium Fluoride 1.1 mg	Commonly Available Strength
Folic Acid	400 mcg	Most Commonly Reported Strength
Garlic	500 mg	Most Commonly Reported Strength
Gelatin	Solgar Natural Gelatin With Calcium Lactate	Commonly Available Product
Ginger Root	150 mg	Commonly Available Strength
Ginkgo Biloba	60 mg	Most Commonly Reported Strength
Ginseng	500 mg	Most Commonly Reported Strength
Glucosamine	Vitasmart Glucosamine Sulfate Complex 500 mg	Commonly Available Product
Glucosamine & MSM	Glucosamine 250 mg, MSM 250 mg	Commonly Available Strength
Glucosamine Chondroitin	CVS Regular Strength Glucosamine Chondroitin	Commonly Available Product
Goldenseal Root	250 mg	Commonly Available Strength
Gotu Kola	435 mg	Commonly Available Strength
Grapefruit Pectin	The Vitamin Shoppe Grapefruit Pectin 1000 mg	Commonly Available Product
Grapeseed Extract	60 mg	Most Commonly Reported Strength
Green Tea	100 mg	Commonly Available Strength
Gummy Bear Multivitamin	L'il Critters Gummy Vites	Commonly Available Product
High Potency Stress Formula Vitamins	Perrigo Formula High Potency Stress Formula Vitamins	Commonly Available Product
Horsetail	440 mg	Commonly Available Strength
Iron	65 mg	Most Commonly Reported Strength

Default Supplement	Assigned Strength or Supplement	Selection of Assigned Strength or Supplement Based On:
Iron With Folate And Vitamin C	Iberet-Folic-500 Controlled-Release Iron With Vitamin C And B-Complex Including Folic Acid Filmtab Tablets	Commonly Available Product
Kava Kava (Root)	250 mg	Commonly Available Strength
Kelp	GNC Natural Brand Kelp (Iodine 150 mcg)	Commonly Available Product
Kelp, Lecithin And Vitamin B6	Nature Made Kelp, Lecithin And Vitamin B6 With Cider Vinegar	Commonly Available Product
Klamath Lake Blue Green Algae	500 mg	Most Commonly Reported Strength
Lactobacillus Acidophilus	10 mg	Commonly Available Strength
L-Arginine	500500 mg	Commonly Available Strength
Lecithin	1200 mg	Most Commonly Reported Strength
Licorice Root	396 mg	Commonly Available Strength
Liquid Colloidal Minerals	GNC Liquid Multi Colloidal Minerals	Commonly Available Product
Liquid Flaxseed Oil	Omega Nutrition Flax Oil	Commonly Available Product
Lutein	6 mg	Most Commonly Reported Strength
Lysine	500 mg	Most Commonly Reported Strength
Magnesium	250 mg	Most Commonly Reported Strength
Melatonin	1 mg	Most Commonly Reported Strength
Memory Formula	One A Day Memory & Concentration Formula	Commonly Available Product
Men's Multivitamin/Multimineral	One A Day Men's High Potency Multivitamin / Multimineral	Most Commonly Reported Product
Methylcellulose Fiber	Citrucel Sugar Free	Commonly Available Product
MSM	1000 mg	Most Commonly Reported Strength
Multimineral	Twinlab Multimineral Caps	Commonly Available Product
Multivitamin / Multimineral	Centrum Advanced Formula High Potency Multivitamin Multimineral with Lutein	Most Commonly Reported Product
Multivitamin And Fluoride Drops	Enfamil Poly-Vi-Flor 0.25 mg Multivitamin And Fluoride Drops	Commonly Available Product
Multivitamin And Fluoride Drops With Iron	Enfamil Poly-Vi-Flor 0.25 mg With Iron Multivitamin, Iron And Fluoride Drops	Commonly Available Product
Multivitamin Plus Iron	The Medicine Shoppe Daily Multiple Vitamins Plus Iron	Commonly Available Product
Multivitamin With Herbs	Eckerd Daily Impact Multivitamin With Herbs	Commonly Available Product

Default Supplement	Assigned Strength or Supplement	Selection of Assigned Strength or Supplement Based On:
Multivitamin/Multimineral Pack	Your Life Daily Pak Essential	Commonly Available Product
Niacin (Vitamin B-3)	500 mg	Most Commonly Reported Strength
Nopal Cactus (Prickly Pear)	400 mg	Commonly Available Strength
Oat Bran	1000 mg	Commonly Available Strength
Omega-3	Great Earth Cholesterol-Free Omega-3 625 mg	Commonly Available Product
Pantothenic Acid (Vitamin B-5)	250 mg	Most Commonly Reported Strength
Pediatric Iron Drops	Fer-In-Sol Iron Drops	Commonly Available Product
Polyvitamin And Fluoride Chewable Tablets	Enfamil Poly-Vi-Flor 0.25 mg Multivitamin And Fluoride Chewable Tablets	Commonly Available Product
Polyvitamin Chewable Tablets	Enfamil Poly-Vi-Sol Multivitamin Chewable Tablets	Commonly Available Product
Poly-Vitamin Drops	Enfamil Poly-Vi-Sol Vitamin Drops	Commonly Available Product
Potassium	99 mg	Most Commonly Reported Strength
Prenatal Vitamins	Vitasmart Prenatal Vitamins	Commonly Available Product
Probiotic	Shaklee Bifidus & Acidophilus Optiflora Probiotic Complex	Commonly Available Product
Protein Powder	GNC Pro Performance 100% Whey Protein Instantized, Chocolate Powder	Commonly Available Product
Psyllium Fiber	Metamucil Powder Original Texture Regular Flavor Dietary Fiber	Most Commonly Reported Product
Red Clover	Nature's Way Red Clover Blossom & Herb 430 Mg	Commonly Available Product
Rutin	500 mg	Commonly Available Strength
Saw Palmetto	160 mg	Commonly Available Strength
Selenium	100 mcg	Most Commonly Reported Strength
Senior Multivitamin / Multimineral	Centrum Silver Multivitamin / Multimineral For Adults 50+ From A To Zinc with Lutein Iron Free	Most Commonly Reported Product
Shark Cartilage	500 mg	Commonly Available Strength
Sodium Fluoride Drops	Teva Sodium Fluoride Drops Rx Only (0.25 mg)	Commonly Available Product
Soy Isoflavones	Sundown Soy Isoflavones	Commonly Available Product
St. John's Wort	300 mg	Most Commonly Reported Strength
Stress Vitamins	Perrigo Stress Formula High Potency Stress Formula Vitamins	Commonly Available Product

Default Supplement	Assigned Strength or Supplement	Selection of Assigned Strength or Supplement Based On:
Trivitamin And Fluoride Chewable Tablets	Enfamil Tri-Vi-Flor 1.00 mg Vitamins A, D, C And Fluoride Chewable Tablets	Commonly Available Product
Tri-Vitamin With Fluoride Drops	Enfamil Tri-Vi-Flor 0.25 mg Vitamins A, D, C And Fluoride Drops	Most Commonly Reported Product
Tri-Vitamin With Iron And Fluoride Drops	Enfamil Tri-Vi-Flor 0.25 mg With Iron Vitamins A, D, C, And Fluoride Drops	Commonly Available Product
Valerian Root	100 mg	Commonly Available Strength
Vanadyl Sulfate	Biochem Vanadyl Sulfate 5000 Mcg	Commonly Available Product
Vitamin A	8000 IU	Most Commonly Reported Strength
Vitamin A & D	Vitamin A 8000 IU, Vitamin D 400 IU	Commonly Available Strength
Vitamin A 1250 IU + Vitamin D	Vitamin A 1250 IU, Vitamin D 135 IU	Commonly Available Strength
Vitamin B-1 (Thiamin)	100 mg	Most Commonly Reported Strength
Vitamin B-12	500 mcg	Most Commonly Reported Strength
Vitamin B-6	100 mg	Most Commonly Reported Strength
Vitamin B-Complex	Your Life Vitamin B-Complex	Commonly Available Product
Vitamin C	500 mg	Most Commonly Reported Strength
Vitamin D	400 IU	Most Commonly Reported Strength
Vitamin E	400 IU	Most Commonly Reported Strength
Women's Multivitamin / Multimineral	One A Day Women's High Potency Multivitamin / Multimineral	Most Commonly Reported Product
Women's Ultra Multivitamin/Multimineral	GNC Women's Ultra Mega	Most Commonly Reported Product
Zinc	50 mg	Most Commonly Reported Strength
Default Antacid	Antacid Assigned	Selection of Assigned Antacid Based On:
Default Antacid Anti-Gas Liquid	Mylanta Regular Strength Antacid Anti-Gas Liquid	Commonly Available Product
Default Antacid Liquid	Maalox Antacid Liquid	Commonly Available Product
Default Antacid Plus Tablets	Maalox Plus Tablets	Commonly Available Product
Default Calcium Antacid	Tums Regular Strength	Commonly Available Product

APPENDIX 5: SOURCE OF SUPPLEMENT INFORMATION

1. Directly from manufacturer
2. Directly from distributor
4. Inferred from supplement name
5. Physician's Desk Reference (PDR)
7. Product catalog
8. Internet listing
9. Supplement label or carton
10. Supplement from same manufacturer

If there is no designation, the supplement was a generic supplement (e.g. vitamin C 500 mg) or a default supplement (e.g. default daily multivitamin) created at NCHS. Some numbers are skipped intentionally as the associated sources weren't used.

APPENDIX 6: CONVERSION FACTORS FOR SUPPLEMENT NUTRIENT UNITS TO FOOD UNITS AND FOR NUTRIENT COMPOUNDS TO ELEMENTAL NUTRIENTS

INGREDIENT	INGREDIENT_ID	CONVERSION FACTOR
Vitamin A Conversion Factors		
ALPHA CAROTENE	10000656	1 IU alpha carotene = 7.2 mcg vitamin A
ALPHA CAROTENE	10000656	1 RAE = 24 mcg alpha carotene
BETA CAROTENE	10000433	1 IU beta carotene = 0.6 mcg vitamin A
BETA CAROTENE	10000433	1667 IU beta carotene = 1 mg beta carotene
BETA CAROTENE	10000433	1 RAE = 12 mcg beta carotene
VITAMIN A*	10000381	1 IU = 0.3 mcg vitamin A
VITAMIN A*	10000381	1 RAE = 1 mcg vitamin A
CRYPTOXANTHIN	10000686	1 RAE = 24 mcg cryptoxanthin
Vitamin D Conversion Factors		
VITAMIN D [†]	10000385	40 IU vitamin D = 1 mcg
Vitamin E		
VITAMIN E [‡]	10000386	1 IU = 0.67 mg vitamin E
Calcium Conversion Factors		
CALCIUM CARBONATE	10000611	40% elemental calcium
CALCIUM HYPOPHOSPHITE	10002193	23.6% elemental calcium
CALCIUM PANTOTHENATE	10000437	91.6% pantothenate
DOCUSATE CALCIUM	10000757	4.5% elemental calcium
Iron Conversion Factors		
FERROUS FUMARATE	10000863	32.9% elemental iron
FERROUS SULFATE	10000436	20.1% elemental iron
Glucosamine Conversion Factors		
GLUCOSAMINE	10000453	83.0% glucosamine
GLUCOSAMINE SULFATE	10000157	65% glucosamine
GLUCOSAMINE SULFATE .2 KCL	10000935	29.6% glucosamine
D-GLUCOSAMINE SULFATE.2	10001109	31.3% glucosamine
Magnesium Conversion Factors		
MAGNESIUM CARBONATE	10000625	28.9% elemental magnesium

INGREDIENT	INGREDIENT_ID	CONVERSION FACTOR
MAGNESIUM HYDROXIDE	10000612	41.7% elemental magnesium
MAGNESIUM TRISILICATE	10002215	18.3 % elemental magnesium
Vitamin B-6 Conversion Factors		
PYRIDOXINE HYDROCHLORIDE	10000523	82% vitamin B-6
PYRIDOXAL ALPHA KETO-GLUTARATE	10001641	53.4 % vitamin B-6
Other		
CHROMIUM PICOLINATE	10000541	12.4% elemental chromium
CHOLINE BITARATE	10000091	41% choline
CREATINE MONOHYDRATE	10000533	88% creatine
CYSTEINE HCL	10000857	76.9% cysteine
DOCUSATE SODIUM	10000122	5.1% sodium
GLUTAMIC ACID HYDROCHLORIDE	10000725	80.1% glutamic acid
L-ARGININE HCL	10000551	82.7% arginine
L-CARNITINE TARTRATE	10001014	68.2% carnitine
L-CYSTEINE HCL	10000542	69.0% cysteine
L-GLUTAMIC ACID HCL	10000683	80.1% glutamic acid
L-LYSINE HCL	10000820	80.03% lysine
LYSINE HYDROCHLORIDE	10002249	80.03% lysine
POTASSIUM PHOSPHATE	10000644	28.7% elemental potassium
SODIUM FLUORIDE	10002151	45.3% elemental fluoride
THIAMIN MONONITRATE	10000520	92% thiamin
ZINC PICOLINATE	10002820	21.1% elemental zinc
Basic Unit Conversion		
1 gm = 1000 mg		
1 mg = 1000 mcg		

* Conversion factor used for Vitamin A is Retinol, most common form

† Conversion factor for Calciferol

‡ Conversion factor for Alpha Tocopherol, most common form

APPENDIX 7: FORMULATION TYPE

1. Infant/pediatric formulation
2. Prenatal formulation
3. Mature formulation
4. Standard formulation

APPENDIX 8: RULES FOR CLASSIFYING INGREDIENTS

VITAMINS

An ingredient is classified as a vitamin if it is:

- A single vitamin listed by its name (eg vitamin A)
- A standard chemical form of the vitamin (retinol, retinal, retinoic acid) in synthetic or natural form

A vitamin will be classified as Other when it exists as:

- A precursor or provitamin to the active form of the vitamin (eg 7-dehydrocholesterol, a precursor to Vitamin D)
- A complex, since the ingredient content is unclear (eg B-complex)

The following appear in supplements as a source of vitamins and are therefore classified as a vitamin:

- Vitamin A: palmitate, vitamin A acetate, vitamin A palmitate
- Vitamin B-1/Thiamin: thiamin monophosphate or TMP, thiamin mononitrate, thiamin hydrochloride
- Vitamin B-2/Riboflavin: riboflavin mononitrate, riboflavin-5-phosphate sodium
- Vitamin B-3/Niacin
- Vitamin B-5/Pantothenic Acid: pantothenate, calcium pantothenate
- Vitamin B-6: pyridoxine hydrochloride, vitamin B₆ hydrochloride
- Vitamin B-12/Cobalamin: cyanocobalamin
- Vitamin C/Ascorbic Acid: ascorbyl palmitate, sodium ascorbate
- Vitamin D/Calciferol: cholecalciferol, ergocalciferol, calcitriol
- Vitamin E/Tocopherol: d- α tocopheryl acid succinate, dl- α tocopheryl acetate, d- α tocopheryl acetate, d- α tocopherol, d- α tocopheryl, tocopherols, mixed tocopherols, vitamin E acetate, tocotrienol
- Vitamin K/Menadione: phytonadione
- Biotin: choline, choline bitartrate
- Folic Acid/Folate

MINERALS

An ingredient is classified as a mineral if it is a macro or micromineral (trace element):

- in its elemental form (eg iron)
- is the source of the mineral in a supplement (eg ferrous gluconate, potassium iodide, nickel chloride).

An ingredient containing a mineral is classified as Other when it is:

- an enzyme (eg boron protease)
- a complex, since the ingredient content is unclear (eg Trace Mineral Complex)
- used as an electrolyte (chloride, potassium, sodium)

The following are classified as minerals:

Arsenic	Copper	Phosphorus
Barium	Fluoride	Selenium
Boron	Iodine	Silicon
Bromine	Iron	Strontium
Cadmium	Magnesium	Sulfur
Calcium	Manganese	Tin
Chromium	Molybdenum	Vanadium
Cobalt	Nickel	Zinc

BOTANICALS

An ingredient is classified as a botanical if it is:

part of a plant, tree, shrub, herb, etc.

Botanicals may include the following words:

Extract, Powder

Leaf, Root, Flower, Stem, Peel, Fruit

Component of a botanical that specifically mentions it is from the plant (eg soy isoflavones, citrus bioflavonoids)

An ingredient containing a botanical is classified as Other if it is:

listed only as an unspecified blend

a chemical structure derived originally from a botanical (eg bromelain, the enzyme found in pineapple; Alliin, a phytochemical in garlic; apple cider vinegar)

AMINO ACIDS

An ingredient is classified as an amino acid if it is an essential or nonessential amino acid. It can exist in:

its free form (eg lycine, glutamine)

its post-translational form with one or two added groups (e.g. cystine, hydroxylysine, hydroxyproline, dimethylglycine, and 3-methylhistidine)

one of its isomeric forms (e.g. l-tyrosine)

the source of an amino acid in a supplement (e.g. l-lysine monohydrochloride, glutamic acid hydrochloride)

An amino acid would be classified as Other if it is:

in its post-translational form with three or more added groups (Trimethylglycine, Tetramethylglycine, etc.)

an alpha-keto acid (an amino acid with its amino group, NH₃, replaced by a keto group) (eg α -ketoglutarate)

a residue of an amino acid ((-carboxyglutamic acid also known as GLA)

as a complex of amino acids (eg natural amino acid complex), since the ingredient content is unclear

The following are classified as amino acids:

Alanine	Glycine	Proline
Arginine	Histidine	Serine
Asparagine	Isoleucine	Taurine
Aspartic Acid	Leucine	Threonine
Cysteine	Lysine	Tryptophan
Glutamic Acid	Methionine	Tyrosine
Glutamine	Phenylalanine	Valine

OTHER

The following are examples of ingredients that would be classified as other:

an electrolyte (eg chloride, potassium, sodium)

a hormone (eg DHEA, cholesterol), unless if it is the active form of a vitamin (calcitriol)

an enzyme (eg cellulase, glucoamylase)

Complexes and blends (unless all components are of the same type ex. amino acid blend)

Bioflavonoids and Isoflavones (if not associated with a plant, in which case it would be classified as a Botanical)

Vinegars

Phytochemicals (eg lutein, allin)

Vitamin precursors, eg some carotenoids

APPENDIX 9: REPORTED SERVING SIZE UNITS

- | | |
|---|----------------------|
| 1. Tablets, capsules, pills, caplets, softgels, gelcaps | 18. Cups |
| 2. Droppers | 19. Sprays/Squirts |
| 3. Drops | 20. Chews |
| 5. Injections/Shots | 21. Scoop |
| 6. Lozenges | 22. CC |
| 7. Milliliters | 23. Capful |
| 10. Powder/Granules | 24. MG |
| 11. Tablespoons | 25. Units |
| 12. Teaspoons | 26. Gulp |
| 13. Wafers | 27. Ounces |
| 15. Cans | 28. Packages/Packets |
| 16. Grams | 29. Vial |
| 17. Dots | 30. Gumball |

APPENDIX 10: LABEL SERVING SIZE UNITS

- | | |
|-----------------------|-------------------------|
| 1. Caplet | 24. Scoop/Powder |
| 2. Capsule | 25. Cup/Powder |
| 3. Dropper | 27. Chew |
| 4. Drop | 29. Vegicap |
| 5. Fluid Ounce | 30. Can/Liquid |
| 6. Gel Cap | 31. Capful |
| 8. Injection/Shot | 32. Gumball |
| 9. Lozenge | 33. Gram/Powder |
| 10. Milliliter | 34. Teaspoon/Powder |
| 12. Package/Packet | 35. Can/Powder |
| 13. Pill | 36. Scoop/Liquid |
| 14. Tablespoon/Powder | 37. Cup/Liquid |
| 16. Softgel | 38. Gram/Liquid |
| 17. Tablespoon/Liquid | 39. Drop/Lozenge |
| 18. Tablet | 99. Unknown Dosage Form |
| 19. Teaspoon/Liquid | |
| 20. Wafer | |
| 21. Ounce/Powder | |
| 22. Spray/Squirt | |

APPENDIX 11: INGREDIENT UNITS

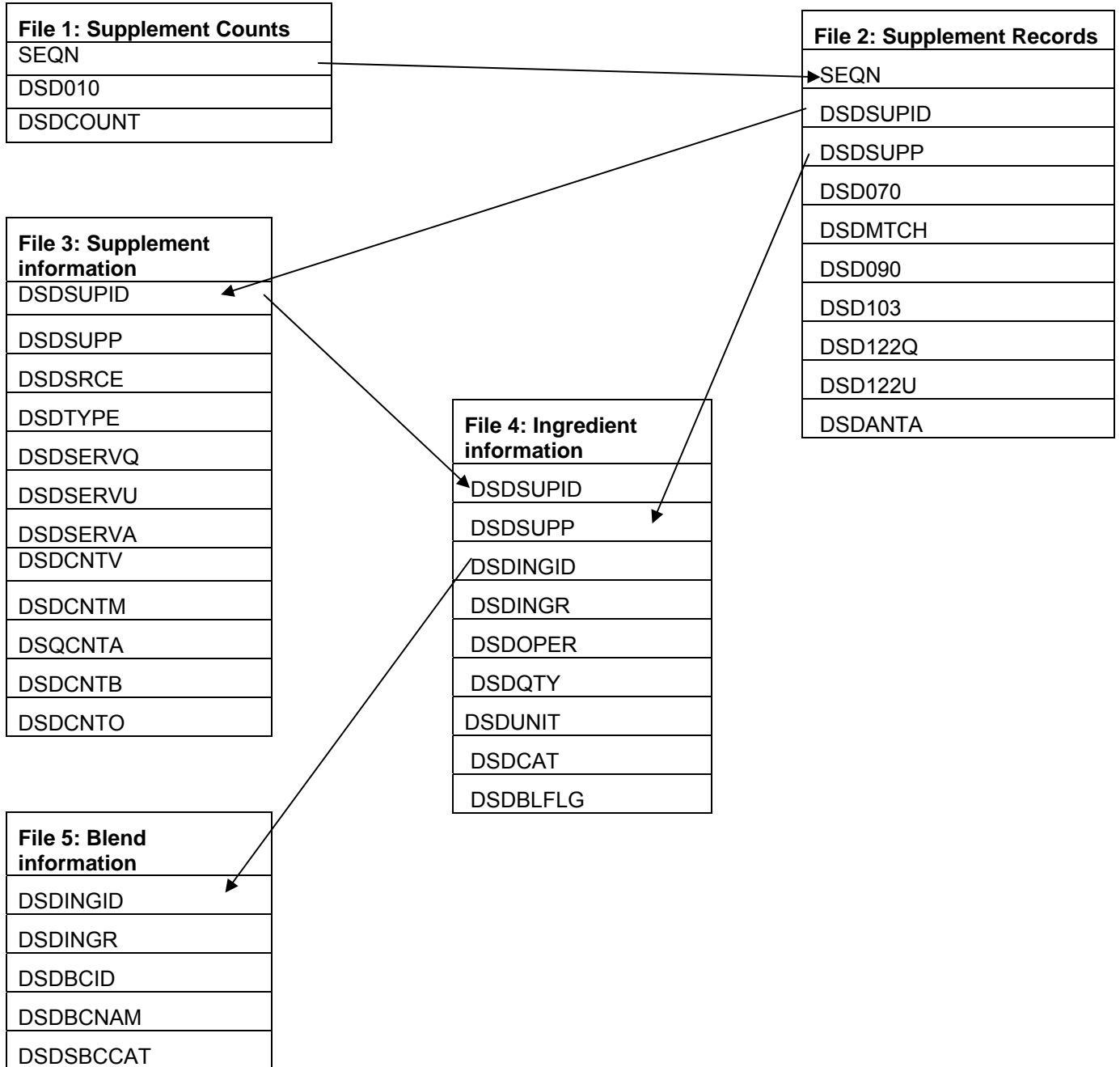
- | | |
|--------------|-------------|
| 1. mg | 17. LacU |
| 2. IU | 18. X |
| 3. % | 19. PPB |
| 4. mcg | 20. Trace |
| 5. gm | 21. Unknown |
| 6. mL | 22. PU |
| 7. kcal | 23. SEU |
| 8. DU | 24. InvU |
| 9. HUT | 25. °DP |
| 10. LU | 26. HCU |
| 11. CU | 27. CFU |
| 12. endo-PGO | 28. GALU |
| 13. AGU | 29. ALU |
| 14. PPM | 30. FTU |
| 15. Million | 31. NG |
| 16. Billion | |

APPENDIX 12: INGREDIENT CLASSIFICATION

1. Vitamin
2. Mineral
3. Botanical
4. Other
5. Amino acid

APPENDIX 13: DATA FILE STRUCTURE AND RELATIONSHIPS

Diagram of relationship between the five files



EXAMPLE OF DATA FILE INFORMATION AND RELATIONSHIPS:

File 1:

SEQN	DSD010	DSDCOUNT
101 (Steve)	1 (Yes)	2
102 (Bob)	2 (No)	0
103 (Mary)	1 (Yes)	1

File 2:

SEQN	DSDSUPID	DSDSUPP	DSD070
101 (Steve)	1888340200	Calcium 600 mg + Vitamin D 200 IU	1 (Yes)
101 (Steve)	1000228800	Brand X Fat Reducer	1 (Yes)
103 (Mary)	1888340200	Calcium 600 mg + Vitamin D 200 IU	2 (No)

File 3:

DSDSUPID	DSDSUPP	DSDCNTV	DSDCNTM	DSDCNTO
1888340200	Calcium 600 mg + Vitamin D 200 IU	1	1	0
1000228800	Brand X Fat Reducer	0	0	2

File 4:

DSDSUPID	DSDSUPP	DSDINGID	DSDINGR	DSDQTY	DSDUNIT	DSDBLFLG
1888340200	Calcium 600 mg + Vitamin D 200 IU	10000070	Calcium	600.000	1 (mg)	2 (not a blend)
1888340200	Calcium 600 mg + Vitamin D 200 IU	10000385	Vitamin D	200.000	2 (IU)	2 (not a blend)
1000228800	Brand X Fat Reducer	10001227	Chitozyme	1200.000	1 (mg)	1 (blend)

File 5:

DSDINGID	DSDINGR	DSDBCID	DSDBCNAM
10001227	Chitozyme	10000317	Psyllium Seed Husks
10001227	Chitozyme	10000642	Chitosan