

Calculating Nutrient Intake from Food and Dietary Supplement Sources Combined

Nutrients from Foods/Output File 04	Output File 04 Location	Output File 12 Location	Nutrients from Dietary Supplements/Output File 12
Energy (kcal)	20	35	Energy (kcal)
Total Fat (g)	21	37	Total Fat (g)
Total Carbohydrate (g)	22	38	Total Carbohydrate (g)
Total Protein (g)	23	36	Total Protein (g)
Cholesterol (mg)	27	43	Cholesterol (mg)
Total Saturated Fatty Acids (SFA) (g)	28	39	Total Saturated Fatty Acids (SFA) (g)
Total Monounsaturated Fatty Acids (MUFA) (g)	29	40	Total Monounsaturated Fatty Acids (MUFA) (g)
Total Polyunsaturated Fatty Acids (PUFA) (g)	30	41	Total Polyunsaturated Fatty Acids (PUFA) (g)
Total Trans-Fatty Acids (TRANS) (g)	132	144	Total Trans-Fatty Acids (TRANS) (g)
Total Conjugated Linoleic Acid (CLA 18:2) (g)	204	146	Total Conjugated Linoleic Acid (CLA 18:2) (g)
Total Sugars (g)	168	150	Total Sugars (g)
Added Sugars (by Total Sugars) (g)	210	151	Added Sugars (by Total Sugars) (g)
Fructose (g)	31	130	Fructose (g)
Glucose (g)	33	131	Glucose (g)
Sucrose (g)	36	132	Sucrose (g)
Total Dietary Fiber (g)	38	124	Total Dietary Fiber (g)
Soluble Fiber (g)	39	125	Soluble Fiber (g)
Insoluble Fiber (g)	40	126	Insoluble Fiber (g)
Total Vitamin A Activity (International Units) (IU)	42	60	Total Vitamin A Activity (International Units) (IU)
Total Vitamin A Activity (Retinol Activity Equivalents) (mcg)	165	152	Total Vitamin A Activity (Retinol Activity Equivalents) in Supplements (mcg)
Retinol (mcg)	44	61	Retinol (mcg)
Vitamin D (calciferol) (mcg)	45	62	Vitamin D (calciferol) (mcg)
Vitamin E (International Units) (IU)	171	63	Vitamin E (International Units) (IU)
Vitamin E (Total Alpha-Tocopherol) (mg)	47	64	Vitamin E (Total Alpha-Tocopherol) (mg)
Synthetic Alpha-Tocopherol (all rac-alpha-tocopherol or dl-alpha-tocopherol) (mg)	173	65	Synthetic Alpha-Tocopherol (all rac-alpha-tocopherol or dl-alpha-tocopherol) (mg)
Beta-Tocopherol (mg)	48	66	Beta-Tocopherol (mg)
Gamma-Tocopherol (mg)	49	68	Gamma-Tocopherol (mg)
Delta-Tocopherol (mg)	50	67	Delta-Tocopherol (mg)
Vitamin K (phylloquinone) (mcg)	51	69	Vitamin K (phylloquinone) (mcg)
Vitamin C (ascorbic acid) (mg)	52	70	Vitamin C (ascorbic acid) (mg)
Thiamin (vitamin B1) (mg)	53	71	Thiamin (vitamin B1) (mg)

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Nutrients from Foods/Output File 04	Output File 04 Location	Output File 12 Location	Nutrients from Dietary Supplements/Output File 12
Riboflavin (vitamin B2) (mg)	54	72	Riboflavin (vitamin B2) (mg)
Niacin (vitamin B3) (mg)	55	73	Niacin (vitamin B3) (mg)
Pantothenic Acid (mg)	56	74	Pantothenic Acid (mg)
Vitamin B-6 (pyridoxine,pyridoxyl,& pyridoxamine)(mg)	57	75	Vitamin B-6 (pyridoxine,pyridoxyl,& pyridoxamine) (mg)
Vitamin B-12 (cobalamin) (mcg)	59	77	Vitamin B-12 (cobalamin) (mcg)
Dietary Folate Equivalents (mcg)	149	153	Dietary Folate Equivalents in Supplements (mcg) ^a
Synthetic Folate (folic acid) (mcg)	151	76	Synthetic Folate (folic acid) (mcg)
Calcium (mg)	60	86	Calcium (mg)
Phosphorus (mg)	61	96	Phosphorus (mg)
Magnesium (mg)	62	92	Magnesium (mg)
Manganese (mg)	170	93	Manganese (mg)
Iron (mg)	63	91	Iron (mg)
Zinc (mg)	64	102	Zinc (mg)
Copper (mg)	65	88	Copper (mg)
Selenium (mcg)	66	98	Selenium (mcg)
Sodium (mg)	67	100	Sodium (mg)
Potassium (mg)	68	97	Potassium (mg)
SFA 8:0 (caprylic acid) (g)	71	44	SFA 8:0 (caprylic acid) (g)
SFA 10:0 (capric acid) (g)	72	45	SFA 10:0 (capric acid) (g)
SFA 12:0 (lauric acid) (g)	73	46	SFA 12:0 (lauric acid) (g)
SFA 14:0 (myristic acid) (g)	74	47	SFA 14:0 (myristic acid) (g)
SFA 16:0 (palmitic acid) (g)	75	48	SFA 16:0 (palmitic acid) (g)
SFA 18:0 (stearic acid) (g)	77	49	SFA 18:0 (stearic acid) (g)
SFA 20:0 (arachidic acid) (g)	78	50	SFA 20:0 (arachidic acid) (g)
SFA 22:0 (behenic acid) (g)	79	51	SFA 22:0 (behenic acid) (g)
MUFA 14:1 (myristoleic acid) (g)	80	143	MUFA 14:1 (myristoleic acid) (g)
MUFA 16:1 (palmitoleic acid) (g)	81	52	MUFA 16:1 (palmitoleic acid) (g)
MUFA 18:1 (oleic acid) (g)	82	53	MUFA 18:1 (oleic acid) (g)
MUFA 20:1 (gadoleic acid) (g)	83	54	MUFA 20:1 (gadoleic acid) (g)
PUFA 18:2 (linoleic acid, undifferentiated) (g)	85	55	PUFA 18:2 (linoleic acid, undifferentiated) (g)
PUFA 18:2 n-6 (linoleic acid [LA]) (g)	238	148	PUFA 18:2 n-6 (linoleic acid [LA]) (g)
PUFA 18:3 (linolenic acid, undifferentiated) (g)	86	56	PUFA 18:3 (linolenic acid, undifferentiated) (g)

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PUFA 18:3 n-3 (alpha-linolenic acid [ALA]) (g)	214	145	PUFA 18:3 n-3 (alpha-linolenic acid [ALA]) (g)
PUFA 18:3 n-6 (gamma-linolenic acid [GLA]) (g)	239	149	PUFA 18:3 n-6 (gamma-linolenic acid [GLA]) (g)
PUFA 20:4 (arachidonic acid, undifferentiated) (g)	88	57	PUFA 20:4 (arachidonic acid, undifferentiated) (g)
PUFA 20:5 n-3 (eicosapentaenoic acid [EPA]) (g)	89	58	PUFA 20:5 n-3 (eicosapentaenoic acid [EPA]) (g)
PUFA 22:5 n-3 (docosapentaenoic acid [DPA]) (g)	90	139	PUFA 22:5 n-3 (docosapentaenoic acid [DPA]) (g)
PUFA 22:6 n-3 (docosahexaenoic acid [DHA]) (g)	91	59	PUFA 22:6 n-3 (docosahexaenoic acid [DHA]) (g)
CLA cis-9, trans-11 (g)	205	140	CLA cis-9, trans-11 (g)
CLA trans-10, cis-12 (g)	206	141	CLA trans-10, cis-12 (g)
Tryptophan (g)	92	103	Tryptophan (g)
Threonine (g)	93	104	Threonine (g)
Isoleucine (g)	94	105	Isoleucine (g)
Leucine (g)	95	106	Leucine (g)
Lysine (g)	96	107	Lysine (g)
Methionine (g)	97	108	Methionine (g)
Cystine (g)	98	109	Cystine (g)
Phenylalanine (g)	99	110	Phenylalanine (g)
Tyrosine (g)	100	111	Tyrosine (g)
Valine (g)	101	112	Valine (g)
Arginine (g)	102	113	Arginine (g)
Histidine (g)	103	114	Histidine (g)
Alanine (g)	104	115	Alanine (g)
Aspartic Acid (g)	105	116	Aspartic Acid (g)
Glutamic Acid (g)	106	117	Glutamic Acid (g)
Glycine (g)	107	118	Glycine (g)
Proline (g)	108	119	Proline (g)
Serine (g)	109	120	Serine (g)
Caffeine (mg)	112	129	Caffeine (mg)
Phytic acid (mg)	113	135	Phytic acid (mg)
Beta-Carotene (provitamin A carotenoid) (mcg)	144	79	Beta-Carotene (provitamin A carotenoid) (mcg)
Alpha-Carotene (provitamin A carotenoid) (mcg)	145	80	Alpha-Carotene (provitamin A carotenoid) (mcg)
Beta-Cryptoxanthin (provitamin A carotenoid) (mcg)	146	81	Beta-Cryptoxanthin (provitamin A carotenoid) (mcg)

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Lutein + Zeaxanthin (mcg)	147	82, 84	Lutein + Zeaxanthin (mcg) + Zeaxanthin (mcg) [ALERT: Use for output files generated in NDSR 2010 or earlier]
Lutein + Zeaxanthin (mcg)	147	82	Lutein and/or Zeaxanthin (mcg) [ALERT: Use for output files generated in NDSR 2011 or later]
Lycopene (mcg)	148	83	Lycopene (mcg)
Omega-3 Fatty Acids (g)	169	42	Omega-3 Fatty Acids in Supplements (mg) [ALERT: Before combining you must convert supplement value from milligrams (mg) to grams (g) (Divide by 1000)]
Omega-6 Fatty Acids (g)	241	147	Omega-6 Fatty Acids in Supplements (mg) [ALERT: Before combining you must convert supplement value from milligrams (mg) to grams (g) (Divide by 1000)]
Daidzein (mg)	174	121	Daidzein (mg)
Genistein (mg)	175	122	Genistein (mg)
Glycitein (mg)	176	123	Glycitein (mg)
Total Lignans (mcg)	233	154	Total Lignans (mcg)
Choline (mg)	192	128	Choline (mg)
Betaine (mg)	193	127	Betaine (mg)
Inositol (g)	195	133	Inositol (g)
Mannitol (g)	199	134	Mannitol (g)
Pinitol (g)	200	136	Pinitol (g)
Sorbitol (g)	201	137	Sorbitol (g)
Xylitol (g)	202	138	Xylitol (g)

a To derive Total Dietary Folate Equivalent from supplement values for data collected in NDSR 2019 or earlier: Multiply the 'Synthetic Folate' variable in output file 12 by a factor of 1.7 to convert to dietary folate equivalent unit. For data collected using NDSR 2020 or later: Total Dietary Folate Equivalents may be derived by 1) multiplying the 'Synthetic Folate' variable in output file 12 by a factor of 1.7 to convert to dietary folate equivalent unit; and 2) summing the dietary folate equivalent values created in step 1 with the 'Dietary Folate Equivalent' variable in output file 12.

Caveats When Combining Output Files 04 and 12

All nutrient values and other components assigned to dietary supplements in the DSAM database are limited to the information provided on the product's Supplement Facts panel. Dietary supplement manufacturers have some discretion with respect to the information they provide on this panel. Most notably, they are not required to list on the Supplement Facts panel all of the nutrients the product contains. Since NCC does not calculate or impute nutrients for dietary supplements, the level of completeness for some nutrients and components may therefore be low. Due to this limitation, the nutrient totals may be under-estimated for some nutrients because the DSAM database does not contain the usual relationships to other nutrients or components.

Some examples of nutrients and other supplement components for which completeness may be an issue are as follows:

Amino Acids

The amount of protein contained in a 'serving' of a dietary supplement must be provided on the Supplement Facts panel if a product contains protein. The individual amino acids in a protein containing supplement may be listed, but inclusion on the Supplement Facts panel is not mandatory. As a result, amino acid information for protein containing products may be incomplete.

Fatty Acids

The amount of fat contained in a 'serving' of a dietary supplement must be provided on the Supplement Facts panel if a product contains fat. Likewise, the total saturated and trans fatty acid content must be listed. Other classes of fatty acids and individual fatty acids do not have to be provided. However, manufacturers may provide this information if they wish. Consequently, fatty acid information for fat containing products may be incomplete.

Soluble and Insoluble Fiber

The amount of fiber contained in a 'serving' of a dietary supplement must be provided on the Supplement Facts panel of fiber containing supplements. The amounts of soluble and insoluble fiber do not have to be provided. However, manufacturers may provide this information if they wish. As a result, soluble and insoluble fiber information may be incomplete for some fiber containing products.

Total Vitamin A

Starting in 2016 when the FDA published the final rule for the new Nutrition Facts panel for foods and Supplement Facts panel for dietary supplements, vitamin A could be included on product labels in either Retinol Activity Equivalents (RAE) (mcg) or International Units (IU). The new Supplement Facts panel, which manufacturers could begin using anytime between the final rule and mandatory implementation in 2020, requires vitamin A to be listed on the label in the unit of mcg RAE whereas the old label required listing vitamin A in IU. As a result of this labeling change, starting in NDSR 2020 vitamin A containing products in the DSAM database may include vitamin A values in either mcg RAE or IU.

There is no direct conversion factor from the vitamin A declared on labels in IU to mcg RAE, only individual conversion factors for provitamin A carotenoids and pre-formed vitamin (<https://www.fda.gov/media/129863/download>). Consequently, Total Vitamin A Activity (International Units) (IU) from Files 04 and 12 can be combined and Total Vitamin A Activity (Retinol Activity Equivalents) (mcg) from Files 04 and 12 can be combined but the two cannot be combined to calculate one Total Vitamin A value from foods and supplements.

Total Vitamin E

Starting in 2016 when the FDA published the final rule for the new Nutrition Facts panel for foods and Supplement Facts panel for dietary supplements, vitamin E could be included on product labels in either Total Alpha-Tocopherol (mg) or International Units (IU). The new Supplement Facts panel, which manufacturers could begin using anytime between the final rule and mandatory implementation in 2020, requires vitamin E to be listed on the label in the unit of Total Alpha-Tocopherol (mg) whereas the old label required listing vitamin E in IU. As a result of this labeling change, starting in NDSR 2020 vitamin E containing products in the DSAM database may include vitamin E values in either Total Alpha-Tocopherol (mg) or IU.

Without knowing the form of vitamin E (i.e. natural RRR- α -tocopherol vs. synthetic all-rac- α -tocopherol), there is no direct conversion factor from the vitamin E declared on labels in IU to mg of Total Alpha-Tocopherol. Consequently, Vitamin E (International Units) (IU) from Files 04 and 12 can be combined and Vitamin E (Total Alpha-Tocopherol) (mcg) from Files 04 and 12 can be combined but the two cannot be combined to calculate one Total Vitamin E value from foods and supplements.