

Derived Variables - Nutrients

Responses to the 116 items on the DQES are converted to nutrients by programs developed at the CCV. Two standard portion factors used in the calculation of nutrient are included in the data sets.

Variable	Description
PSF	Portion Standard Factor
APSF ^a	Alcohol Portion Standard Factor

Sources of nutrient data

Values for most nutrients are based on the Australian food composition data base, NUTTAB95.¹ Nutrient values from other sources are listed below. None of these new values have been tested or validated so the CCV recommend that the values be used with caution; the CCV welcome any feedback.

- Folate (*Folate*) and vitamin E (*VitE*) are derived from British food composition tables.²
- Alpha-Carotene (*AlphCarot*), Beta-Carotene (*Bet_Carot*), Beta-Cryptoxanthin (*BetaCrypt*), Lutein plus Zeaxanthin (*LutnZeax*) and Lycopene (*Lycopene*) are derived from the USDA data base³ and are measured in micrograms/day.
- Glycemic index (*GlycIndex*) and glycemic load (*GlycLoad*) are derived from an international table.⁴

Note that the variable *Bet_Carot* measures total β -carotene intake, and should not be confused with the variable *BetaCarot* which estimates β -carotene equivalents (mcg/day) from NUTTAB and is calculated as the sum of the β -carotene and half the amounts of α -carotene and α - and β -cryptoxanthins present. Although values for the 2 variables are likely to be highly correlated, values may differ to a large extent, having been estimated from different databases, developed at different times in different countries. Also different foods would have been averaged to match values with the DQES items.

Hodge et al have described the derivation of values for Glycemic index (GI) and glycemic load (GL) as follows:⁵

‘Glycemic index is a method of ranking foods on the basis of the blood glucose response to a given amount of carbohydrate from that food. GI values of individual food items were obtained from the 2002 International table of GI and GL values.

⁴Where there was more than one value, GI values were averaged, with preference being given to Australian figures. Dietary GL was computed by summing the product of carbohydrate intake from each food by the GI for that food. GL was divided by total carbohydrate intake to obtain dietary GI, i.e an average of individual food GI values, weighted according to their contribution to carbohydrate intake ⁴ Alcoholic beverages were not included in the overall GI.’

Variable names

Like DQES items, nutrient variable names are a concatenation of the cohort-survey descriptor and the nutrient name.

Nutrient Variables

Nutrients are provided separately for foods (Table 1) and Alcoholic beverages (Table 2).

Table 1 **Nutrients from foods**

Variable	Description
PSF	Portion Standard Factor
APSF ^a	Alcohol Portion Standard Factor
Energy	Energy (kJ/day)
Macronutrients	
Carbhyd	Carbohydrate (g/day)
AllFat	Total Fat (g/day)
Protein	Protein (g/day)
MonoFat	Monounsaturated Fat (g/day)
PolyFat	Polyunsaturated Fat (g/day)
SatFat	Saturated Fat (g/day)
Cholest	Cholesterol (mg/day)
Sugars	Sugars (g/day)
Starch	Starch (g/day)
Fibre	Fibre (g/day)
GlycIndex ^a	Glycemic Index
GlycLoad ^a	Glycemic Load
Vitamins	
Folate	Folate (ug/day)
Niacin	Niacin (mg/day)
NiacnE	Niacin Equivalent (mg/day)
Retinol	Retinol (ug/day)
RetinolE	Retinol Equivalent (ug/day)
Riboflv	Riboflavin (mg/day)
Thiamin	Thiamin (mg/day)
VitC	Vitamin C (mg/day)
VitE	Vitamin E (mg/day)
<i>Carotenoids</i>	
BetCarot	Beta Carotene Equivalents (ug/day)
AlphaCarot ^a	Alpha-Carotene (mcg/day)
Bet_Carot ^a	Beta-Carotene (mcg/d)
BetaCrypt ^a	Beta-Cryptoxanthin (mcg/day)
LutnZeax ^a	Lutein + Zeaxanthin (mcg/day)
Lycopene ^a	Lycopene (mcg/day)
Minerals	
Calcium	Calcium (mg/day)
Iron	Iron (mg/day)
Magnes	Magnesium (mg/day)
Phosph	Phosphorus (mg/day)
Potass	Potassium (mg/day)
Sodium	Sodium (mg/day)
Zinc	Zinc (mg/day)

^a Variable was not included in the DQES data for the Mid-age Survey 3

Table 2 Nutrients from alcoholic beverages

Variable	Description
Alcohol	Alcohol
AEnergy	Energy from Alcohol
Macronutrients	
ACarbyhd	Carbohydrate from Alcohol
AAIIFat ^a	Total Fat from Alcohol
AProtein	Protein from Alcohol
AMonoFat ^a	Monounsaturated Fat from Alcohol
APolyFat ^a	Polyunsaturated Fat from Alcohol
ASatFat ^a	Saturated Fat from Alcohol
ACholest ^a	Cholesterol from Alcohol
AStarch	Starch from Alcohol
ASugars	Sugars from Alcohol
AFibre ^a	Fibre from Alcohol
Vitamins	
AFolate	Folate from Alcohol
ANiacin	Niacin from Alcohol
ANiacnE	Niacin Equivalents from Alcohol
ARetinol ^a	Retinol from Alcohol
ARetinolE ^a	Retinol Equivalents from Alcohol
ARiboflv	Riboflavin from Alcohol
AThiamin ^a	Thiamin from Alcohol
AVitC	Vitamin C from Alcohol
AVitE ^a	Vitamin E from Alcohol
<i>Carotenoids</i>	
ABetaCarot ^a	Beta Carotene from Alcohol
Minerals	
ACalcium	Calcium from Alcohol
Alron	Iron from Alcohol
AMagnes	Magnesium from Alcohol
APhosph	Phosphorus from Alcohol
APotass	Potassium from Alcohol
ASodium	Sodium from Alcohol
AZinc ^a	Zinc from Alcohol

^a Variable was not included in the DQES data for the Mid-age Survey 3

Fatty Acids

Variables for the intake of specific fatty acids (Table 3) were not included in data for the Mid-age Survey 3.

Table 3 **Fatty acids**

Variable	Fatty Acid Name	Fatty Acid Structure
<i>Saturates</i>		
FD40	butyric acid	4:0
FD60	caproic acid	6:0
FD80	caprylic acid	8:0
FD100	capric acid	10:0
FD120	lauric acid	12:0
FD140	myristic acid	14:0
FD150		
FD160	palmitic acid	16:0
FD170	margaric acid	17:0
FD180	stearic acid	18:0
FD200	arachidic acid	20:0
FD220	behenic acid	22:0
FD240	lignoceric acid	24:0
<i>Monounsaturates</i>		
FD141	myristoleic acid	14:1
FD151		
FD161	palmitoleic acid	16:1 undifferentiated
FD161T		16:1 t
FD171		17:1
FD181	oleic acid	18:1 undifferentiated
FD181T		18:1 t
FD201	gadoleic acid	20:1
FD221	erucic acid	22:1 undifferentiated
<i>Polyunsaturates</i>		
FD182N6	linoleic acid	18:2n-6
FD182N6T		18:2n-6t
FD183N3	alpha-linolenic acid	18:3 n-3 c,c,c
FD202N6		18:2 n-6 c,c
FD203N6		20:3n-6
FD204N6	arachidonic acid	20:4n-6
FD205N3		20:5n-3
FD205N6		20:5n-6
FD224N6		22:4n6
FD225N3		22:5n-3
FD226N3		22:6 n-3

References

1. Lewis J, Milligan G, Hunt A: NUTTAB95 Nutrient Data Table for Use in Australia. Canberra, Australian Government Publishing Service, 1995
2. Holland B, Welch AA, Unwin ID, Buss DH, Paul AA, Southgate DAT: *McCance and Widdowson's The Composition of Foods*. Cambridge, Royal Society of Chemistry, 1993
3. USDA-NCC: USDA-NCC Carotenoid Database for U.S.Foods. 11th ed., 1998
4. Foster-Powell K, Holt HA, Brand-Miller JC: International tables of glycemic index and glycemic load values: 2002. *Am J Clin Nutr* 76:5-56, 2002
5. Hodge AM, English DR, O'Dea K, Giles GG. Glycemic index and dietary fiber and the risk of type 2 diabetes. *Diabetes Care* 27:2701-2706, 2004
6. Mann, N., Sinclair, A., Percival, P., Lewis, J., Meyer, B. and Howe, P. 2003, 'Development of a database of fatty acids in Australian foods', in *Nutrition and Dietetics*, Dietitians Association of Australia, Australia, vol.60, pp.42-45 ISSN: 1446-6368