The Nutritional Value of Tea

Introduction

As a nation we enjoy drinking tea on a daily basis, getting through 165 million cups a day. On-going research is discovering that drinking just 4 cups of tea a day may offer significant health benefits.

In addition to tea's contribution to overall daily fluid intake as well as the presence of powerful antioxidants called flavonoids, tea, when taken with milk, may also contribute to our daily intake of certain nutrients. For further information about fluid and antioxidants, please refer to the fact sheets, 'Tea and Hydration' and 'Tea and Antioxidant Properties.'

Nutritional Value of Tea

Taken on its own tea has no calories. Using semi-skimmed milk adds 13 calories per cup, but also provides a number of valuable vitamins and minerals. Table 1 lists these nutrients present in 4 cups of tea, along with the added semi-skimmed milk, as well as the overall contribution to the UK Reference Nutrient Intakes. Table 2 outlines the main functions of these nutrients.

In addition to the nutrients described in Table 1, tea provides a good natural source of Fluoride. Fluoride is needed to support bone mineralisation and protect teeth against dental caries.

In Summary…

As well as contributing to fluid and antioxidant intake, drinking 4 cups of tea a day with milk, can provide certain vitamins and minerals, thereby helping to support overall health and well being.

Table 1; Nutritional content of tea and estimated contribution, with and without milk, to the UK Reference Nutrient Intake

NUTRIENT[1]	AMOUNT PROVIDED BY 4 CUPS OF TEA ALONE*	% RNI FROM TEA ALONE[2]**	AMOUNT PROVIDED BY THE SEMI-SKIMMED MILK IN 4 CUPS OF TEA***	% RNI FROM SEMI-SKIMMED MILK ALONE IN 4 CUPS OF TEA**	TOTAL AMOUNT PROVIDED BY 4 CUPS OF TEA WITH SEMI-SKIMMED MILK
Minerals:					
Calcium			144mg	21%	**144mg**
Zinc			0.48mg	7% (females) 5% (males)	**0.48mg**
Potassium	129mg	4%	180mg	5%	**309mg**
Manganese	1.1mg	n/a			**1.1mg**
Vitamins:					
Thiamin (B1)			48mcg	6% (females), 5% (males)	**48mcg**
Riboflavin (B2)	76mcg	7% (females) 6% (males)	216mcg	20% (females), 17% (males)	**292mcg**
Vitamin (B6)			72mcg	6% (females), 5% (males)	**72mcg**
Folate			7.2mcg	4%	**7.2mcg**
Niacin	0.76mg	6% females 5% males	0.12mg	< 1% (females), < 1% (males)	**0.88mg**
Pantothenate			0.4mg	n/a	**0.4mg**
Vitamin B12			0.48mcg	32%	**0.48mcg**

Notes:

*1 cup = 190ml[3] ** Based on reference intake for 19-50 year olds[2] ***Portion of milk in 1 cup = 30ml[3]

Table 2; Functions of nutrients present in tea and milk

MAIN FUNCTIONS
– Calcium is vital for the formation of bones and teeth. It also has a role at the cellular level where it is important for activities such as muscle contraction, blood clotting and nerve transmission – Zinc is present in many enzymes and is required for growth, tissue repair and for sexual maturation – Potassium is important in the regulation of fluid balance as well as for the proper functioning of cells, including nerves and muscles – Manganese is essential for the development of enzymes, as well as being an important component for bone and cartilage
– Thiamin is needed to release energy from carbohydrate – Riboflavin is required to release energy from protein, carbohydrate and fat – Vitamin B6 is involved in the metabolism of protein. Vitamin B6 dependent enzymes are also involved in the metabolism of glycogen and lipids and the synthesis of haem – Folate is essential for the synthesis of DNA and therefore plays a crucial role in cell division as well as the formation of blood cells – Niacin is involved in the release of energy in tissues and cells – Pantothenate plays a central role in energy metabolism – Vitamin B12 is necessary for the proper formation of blood cells and nerve fibres

Table 2; Nutrient Requirements For Comparison To Tea

* RNI = Reference Nutrient Intake

** EAR = Estimated Average Requirements

Nutrient	RNI (19-50 year olds)	RNI (50+ year olds)
Energy (kcal)**	1940 (females) 2550 (males)	1900 (females) 2550 (males)
MINERALS*		
Calcium (mg)	700	700
Zinc (mg)	7 (females) 9.5 (males)	7 (females) 9.5 (males)
Potassium (mg)	3,500	3,500
Manganese (mg)	NA	NA
VITAMINS*		
Vit B2 (mg)	1.1 (females) 1.3 (males)	1.1 (females) 1.3 (males)
Vit B1 (mg)	0.8 (females) 1.0 (males)	0.8 (females) 0.9 (males)
Vit B6 (mg)	1.2 (females) 1.4 (males)	1.2 (females) 1.4 (males)
Folate (mcg)	200	200
Niacin (mg)	13 (females) 17 (males)	12 (females) 16 (males)
Pantothenate (mg)	NA	NA
Vitamin B12 (mcg)	1.5	1.5

References:

[1] Holland, B., Welch, A.A., Unwin, I.D., Buss, D.H., Paul, A.A. and Southgate, D.A.T. (1991) McCance and Widdowson's The Composition of Foods, 5th edition, Royal Society of Chemistry, Cambridge.
[2] DoH (1991) Dietary Reference Values for Food Energy and Nutrients for the United Kingdom; Report of the panel on Dietary Reference Values of the Committee on Medical Aspects of Food Policy
[3] Crawley H. Food Portion Sizes. FSA 2002