#FruitVeg4You

Nutritional Factsheet: Apple

Nutritional and Dietary Information

An apple has many nutritional benefits, providing as a food an important complement of vitamins, minerals and trace elements. Its diuretic action is recognised, which is linked to its richness in water and potassium, with its low sodium content, and the presence of sorbitol. Apples promote therefore urinary excretion.

Thanks to its high fibre content, apples have a particularly interesting effect on the proper bowel function (pectin has a regulatory effect on transit). Thus, apples are effective against intestinal laziness and helpful to treat diarrhoea. It has also been demonstrated that the regular consumption of apples (2-3 per day) may help to normalise an excessive cholesterol rate and decrease a too high blood sugar level.

Principle characteristics

With its varied and well balanced composition, the apple can be seen as a virtual “model” fruit. Apples provide a moderate energy intake with 54 kcal (226 kJ) per 100 grams, or about 80 to 95 kcal for a medium apple (weighing 150 to 175 g net).

Their carbohydrates (9 to 15 g per 100 g) provide the bulk of calories. These are mainly fructose (it represents about half of the total carbohydrates) and sucrose and glucose (22% and 18% of the total carbohydrates). There are also some less common sugars present, such as pentosans and hexosans (5 to 6% of total carbohydrates), and finally to a lesser extent (4-5% of total carbohydrates) sorbitol, a sugar alcohol derived from glucose. These are the carbohydrates that give the apple its flavour – a sweet flavour balanced by a tangy touch, which is provided by organic acids. They are present in the fruit at 0.4 to 0.9 g per 100 g and consist almost entirely of malic acid, an organic acid characteristic for apples. Citric acid, abundant in many other fruits (especially citrus fruits) is only present at a level of 4-5% of the total organic acids. Nitrogen compounds (proteins), as well as lipids (or fats), are very scarce, since both do not exceed an average of 0.3 g per 100 g. They therefore play a negligible role.

A refreshing fruit, apples contain more than 84% water, in which many minerals and trace elements (a total of about 320 mg per 100 g) are dissolved. Potassium is best represented, with a level of about 145 mg. Small quantities of phosphorus, calcium, magnesium (between 4 and 9 mg per 100 g) and sodium (3 mg) can be found in apples as well. Trace elements (zinc, manganese, copper, iron, boron, fluoride, selenium, vanadium, molybdenum, etc.) play an essential role in cellular metabolism, and are also all present.The vitamin composition of the apple is diversified, with a wide range of B vitamins, small amounts of vitamin E (0.5 mg per 100 g), provitamin A (0.07 mg) and vitamin C (on average 5 mg per 100 g, but the level can range from 2 to 25 mg depending on the variety). The skin of apples contains

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more vitamin C than the pulp (4-6 times). But given that its relative weight is low, it represents only a small fraction (about 25%) of the overall intake of vitamin C. Storage does not have a significant effect on decreasing the vitamin C level, with a loss of about 15% after several weeks in a neutral atmosphere and temperature controlled. However, cooking causes partial destruction of vitamins (e.g. 25 to 30% in the oven).

Fibres are abundant in the apple and average about 2.1 g for 100 g in a peeled fruit (and 3 to 3.7 g in a fruit with skin). They are composed in large parts of soluble pectic substances (pectins, protopectin acid, etc.), cellulose and hemicellulose (concentrated in the skin), and lignin that forms the hard parts of the fruit (in the area central to the core).

Nutritional Content

Components	(g)
Carbohydrates	12.6
Proteins	0.30
Lipids	0.30
Water	84.3
Fibres	2.10

Minerals	(mg)
Phosphorus	9.000
Calcium	4.000
Magnesium	4.000
Sodium	3.000
Iron	0.200
Copper	0.040
Zinc	0.090
Manganese	0.030

Vitamins	(mg)
Vitamin C	5.000
Provitamin A	0.070
Vitamin B1	0.030
Vitamin B2	0.020
Vitamin B3 or PP	0.300
Vitamin B5	0.100
Vitamin B6	0.050
Vitamin B9	0.012
Vitamin E	0.500

Energy Intake	
KCalories	54.00