

## Whole grains... for long lives in good health

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*Three studies which have been published almost concurrently show that regular consumption of foods made from whole grain cereals is associated with a significant reduction in the risk of premature death.*

The **cereal grains** were the first plants to be domesticated by humans over 10,000 years ago and, even today, these foods are staples in the diets of most cultures on the planet.

Traditionally these cereals (wheat, for example) were consumed in their entire form, i.e. the flour was obtained by milling the entire kernel containing sugar, in the form of starch, along with the external coat (bran) as well as the embryo (germ). Within this complete form, the cereal grains represent foods of high quality, not only as a source of energy (the sugar from starch), but also due to their elevated content of fibre, vitamins and minerals derived from the bran and germ.

The current nutritional situation is quite different because the very large majority of grain products which we consume daily (bread, pasta, cakes etc.) are made from white refined flours, in which the bran and germ have been eliminated. In other words, these foods do not contain anything but starch, their fibre has been removed and they are ultimately an impoverished version of the original cereals.

### ADVANTAGES

This difference in composition between whole grain and refined flours results in very different effects on the human body, particularly on blood glucose levels. The presence of fibre in the whole grain flours makes the starch sugars more difficult to digest and assimilate, which permits maintaining the blood sugar at levels sufficient to assure the proper functioning of the body's cells yet without reaching excessive levels.

Conversely, the absence of these fibres in the bleached, refined flours increases the absorption of sugars from starch, causing sudden spikes of glycemia. Our metabolism is poorly adapted to these rapid variations in glucose levels, which lead in time to several metabolic disorders that can have serious repercussions on our health.

The fibre slows gastric emptying, which increases the sensation of satiety and prevents the ingestion of excess calories, and they are also fermented within the colon to produce short chain fatty acids which are noted for their anti-inflammatory effects. The list of benefits associated with the consumption of alimentary fibre is long and there is no doubt that it is greatly preferable to consume these cereals in the whole grain format in order to take advantage of these benefits.



### DECREASED MORTALITY

The positive effect of whole grains on health is well illustrated by the results of three independent meta-analyses examining the link between consumption of these foods and the risk of premature death<sup>1-3</sup>. By analyzing several dozen studies performed over the past few years, each team of researchers was able to show that daily consumption of about three portions of whole grains (one portion = one slice of bread, 30 g of cereal, ½ cup of pasta or ½ pita) was associated with a significant reduction in the risk of premature death:

- Decrease of 22 to 30% in mortality linked to cardiovascular diseases
- Decrease of 14 to 18% in mortality linked to cancer
- Decrease of 19 to 22% in mortality from all causes

In summary, the simple act of integrating whole grains into our eating habits has a very positive effect on health. The preventive potential remains however largely unused, with less than 5% of the population eating the recommended three portions of whole grains. It is, however, easy to fix this problem because our food markets are more and more offering products made with whole grains, either breads, pastas, cereals or crackers, which can be used to replace (as much as possible) the versions made with bleached, refined flours.

- (1) Zong G et al. Whole grain intake and mortality from all causes, cardiovascular disease, and cancer: a meta-analysis of prospective cohort studies. *Circulation* 2016;133:2370-2380.
- (2) Chen GC et al. Whole-grain intake and total, cardiovascular, and cancer mortality: a systematic review and meta-analysis of prospective studies. *Am. J. Clin. Nutr.* 2016;104:164-172.
- (3) Aune D et al. Whole grain consumption and risk of cardiovascular disease, cancer, and all cause and cause specific mortality: systematic review and dose-response meta-analysis of prospective studies. *BMJ* 2016;353:i2716.