

Diet and cancer

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Cancer is a complex group of diseases with numerous possible causes. These include genetic factors, eating habits, lifestyle, viral infections, exposure to different types of potentially mutagenic agents and radiation, among others.

Although it represents an important group, cancers arising from inherited gene mutations correspond to a relatively small amount of all neoplastic processes. It is estimated that about 5%-10% of all cancers are related to one or more inherited gene mutations. These processes have low probability of preventive actions.

Most neoplasms result from gene mutations occurring after birth, and some of these mutations are clearly related to external agents that affect the molecular integrity of the deoxyribonucleic acid (DNA). They enable the adoption of preventive measures, aiming at reducing their incidence.

Regardless of the triggering event, a common reality to almost all cancers is early diagnosis, which is closely related to improving the patient's prognosis in terms of quality of life and survival time. Therefore, the identification of effective protective factors of DNA is highly desirable.

Several lines of research are developed to better understand the intrinsic processes of cancer-related gene mutations and, mainly, to understand the mechanisms by which these changes may be inhibited or minimized.

Extensive epidemiological studies have shown that the intake of some fruits and vegetables, especially those of the cruciferous family, such as watercress, broccoli, cabbage, mustard and cabbage, is associated with a reduction in the risk of several types of cancer^(1,2).

One of the reasons that cruciferous vegetables have protective properties seems to lie in their high content of glucosinolates. This substance, when metabolized by the enzyme myrosinase, also present in these vegetables and produced by the intestinal bacterial flora, results in isothiocyanates and indoles, which present several anticarcinogenic actions that have already been demonstrated by both, *in vivo* and *in vitro*, by many authors⁽²⁻⁵⁾. Some of these actions include changes in the activities of some enzymes and reduced extent of oxidative DNA damage.

The protective ability of cruciferous vegetables, however, is not homogeneous among them and is dependent on the preparation method, notably, the cooking time and temperature.

Therefore, we received with great satisfaction the study of Souza *et al.* (2016)⁽⁶⁾, published in this issue of the *Jornal Brasileiro de Patologia e Medicina Laboratorial (JBPM)*, reporting the positive results obtained in the study on daily watercress intake and inhibition of Ehrlich experimental tumor growth.

Enjoy the reading.

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