

NUTRITION AND NUTRIGENOMICS

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There are many evidence in scientific literature that relate to causal nutrition and risk of disease. The concept that proper nutrition can be a significant protective factor that can significantly affect the risk of cardiovascular and neoplastic diseases is widely demonstrated by scientific literature . Evidence has been shown at an epidemiological level first: it has been shown that a certain qualitative and quantitative composition of nutritional support can be both a protective factor that can reduce the incidence of pathologies and, in other dietary formulations, a causal factor that can increase its etiopathogenetic effect. It is well known, for example, how the incidence of cardiovascular disease is closely related to the lifestyle of the person, and in particular the excess energy and / or lipids, particularly saturated. Likewise, the characteristics of the diet also significantly affect the incidence of neoplastic diseases. It is believed that on the combination of neoplastic and cardiovascular diseases, which then represent the first two causes of death in the most developed countries, at least one-third of case histories recognize diet as the main causal factor. While the first evidence of nutrition and health relationship has come from epidemiological data on populations, subsequent research is progressively identifying the molecular pathophysiological mechanisms at the basis of the observed effects. The evidence that they are showing shows significant mechanisms involved in nutrition. Nutrients, ie molecules absorbed within the body by the digestive tract, are classically divided into energetic and structural, wanting to indicate with what food-derived molecules can or give the energy needed for various metabolic processes or become part of the cellular and tissue structures of the body. The study of the relationship between nutrition and health has recently added to those categories that of chemiopreventive or bioactive nutrients. With this term we want to point out those molecules made by the diet, for which, regardless of their role as nutritional energy or structural, it is noticed how the magnitude of their representation in the diet is associated with a reduction in the risk of pathologies, sometimes being also known explanations of the molecular mechanism with which this occurs. For example, polyunsaturated omega-3 fatty acids derived from diet seem to be the basis of the mechanism for which epidemiology has shown that a diet with various weekly fish portions significantly reduces cardiovascular risk. Many other substances, often with protective power against the mechanisms of oxidative cell damage, are increasingly placed under careful attention to explain the relationship between nutrition and health at the molecular level.