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# Nuts in the Prevention of Hyperuricemia and Gout: A New Line of Research



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New research has demonstrated that nuts can be an important food group reducing the risk of hyperuricemia, a metabolic condition increasing the risk of gout and other cardiometabolic diseases.

Hyperuricemia is an important health condition, but usually undervalued, which appears when serum uric acid (SUA) accumulates in the body (1,2). This compound is the final product of the endogenously purine metabolism in the liver of humans and it is mainly excreted by kidneys and a minor portion via intestines (2,3). Hence, an abnormality in one of these procedures or a combination may be the onset this disorder (1–3). Despite this, there is no consensus about the definition of hyperuricemia, usually concentrations higher than 6.8 mg/dL in blood are considered as abnormally high (hyperuricemia) (1).

It is estimated that around 20% of the global population is affected by hyperuricemia and over the last few years, its prevalence has been rapidly growing (3,4). Although some people do not exhibit any signs or symptoms of SUA accumulation, many of them suffer gout, the most common painful joint disease owing to uric acid accumulation in blood and tissues (1,3,5,6). In addition, previously, hyperuricemia has been positively associated with several comorbidities with a huge impact on people's health and quality of life, especially with the incidence of cardiovascular diseases, but also other cardiometabolic conditions such as hypertension, obesity, metabolic syndrome and diabetes (1,2,6). Hyperuricemia has also been frequently used as a biomarker of renal function decline. Therefore, the application of appropriate preventive measures in order to avoid high accumulation levels of SUA in the human body may contribute to reduce the adverse conditions associated to this condition and therefore the burden of the healthcare system.

In view of what has been previously mentioned, it is crucial to identify the potential risk factors for developing hyperuricemia. Age, sex, genetics and other modifiable factors such as lifestyle habits, medication use and the socioeconomic status are recognized risk factors of hyperuricemia and gout (3,6,7). However, the recently remarkable increase of SUA levels in developed countries in the last years has been attributed to changes in lifestyle and, particularly, in dietary habits (5,7). In fact, a low-purine diet is considered one of the first choices to treat hyperuricemia, which means a reduction of meat, seafood, alcohol and sweets consumption and an increase of vitamin C intake and fiber-rich foods such as fruits and vegetables (6). Moreover, antioxidant and anti-inflammatory properties of some foods and plant-based dietary patterns may also improve SUA concentrations (8). Thus, previous studies showed that a greater adherence to the Mediterranean Diet is associated with lower hyperuricemia risk (9,10), as well as several individual components of the diet such as vegetables, fruits, coffee, low-fat dairy products, soy foods (5,7) and other foods as legumes (11), which in the last decades have been object of concern because of their high content in purines.

There is an increasing number of studies focused on nuts, which reported the beneficial effect of their consumption in human health through decreasing the risk



of different chronic diseases (12). In addition, nowadays, there is widespread evidence that even though this food group is high in calories, they are dense and full of beneficial nutrients. Nuts are rich in healthy unsaturated fatty acids, vegetable proteins, vitamins, minerals, fiber and other substances with potential antioxidant and anti-inflammatory effects, such as carotenoids and phytosterols (12,13), which may partly explain their protective effects on different health outcomes, such as cardiovascular diseases, diabetes, obesity, hypertension, and metabolic syndrome (12). Nevertheless, given that only a few investigations have focused on the influence of nut consumption on hyperuricemia, little is widely known.

“Nuts are rich in healthy unsaturated fatty acids, vegetable proteins, vitamins, minerals, fiber and other substances with potential antioxidant and anti-inflammatory effects, such as carotenoids and phytosterols”

To the best of our knowledge, there is an exclusive paper, which cross-sectionally studied the association between different types of nuts and the risk of hyperuricemia. The authors of this study reported, for the first time, that the consumption of some specific nuts, particularly pine nuts and walnuts, were associated with a lower risk of hyperuricemia in a sample of 14,056 Chinese young adults (13). Furthermore, in a randomized controlled clinical trial of 150 middle-age patients with coronary artery disease, it has been shown that those participants in the intervention group supplemented with almonds significantly decreased SUA levels compared to those avoiding the consumption of nuts after 6 and 12 weeks of follow-up (14). Hence, the potential beneficial effect of consuming nuts in order to avoid hyperuricemia was demonstrated.

In summary, although the fact that nuts can confer protection against chronic diseases is well recognized, the current evidence regarding the association between nut consumption and hyperuricemia is limited. However, these preliminary study results are encouraging and they suggest that nuts could be an important food group to include in the diet to prevent hyperuricemia onset or even its progression. Taking into consideration that hyperuricemia prevention may provide protection to cardiovascular, renal and other diseases, nuts consumption within a healthy diet could allow great benefits for human health. Consequently, further clinical trials and prospective studies are warranted to confirm the prior aforementioned study results and future investigations should focused on this novel line of research. ■

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