

Role of diet in nephrolithiasis

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Abstract

Introduction: Nephrolithiasis consists of the formation of mineral crystals due to their supersaturation in the urine, resulting in the formation of kidney stones in the upper urinary system. This pathology is a common health problem with a multifactorial etiology that arises from the interaction of metabolic, genetic and environmental factors (1).

Diet is closely related to the prevention, formation and recurrence of kidney stones. The mechanisms involved in the prevention of kidney stones through dietary components include diuretic activity, antioxidant and inhibitory effect on crystallization and crystal aggregation (2).

In this sense, fluid intake stands out as the main determinant of urine volume and plays a critical role in the formation of kidney stones.

Materials and Methods: Regarding the composition of kidney stones, the majority consist mainly of calcium oxalate, however, high dietary calcium intake has been associated with a lower incidence of kidney stones compared with a deficient intake of it. On the other hand, a higher sodium intake generates a proximal sodium reabsorption and subsequently a reduction in calcium reabsorption (3).

Sucrose and fructose consumption increases the risk of kidney stones in men and women by increasing urinary calcium excretion. A higher intake of animal protein can increase urinary calcium and decrease urinary citrate which increases the risk of stone formation in men. A caloric surplus in the diet and obesity have been identified to increase the risk of nephrolithiasis (4).

Result: Among the protective factors, the consumption of fruits, vegetables, and legumes, balanced vegetarian and vegan diets are protective factors and reduce the risk of nephrolithiasis in older men and women (5). The DASH diet can reduce the incidence of kidney stone formation by 40-45% (6).

Conclusion: Finally, the Mediterranean diet has been associated with a lower incidence of renal lithiasis, due to the abundant contribution of protective dietary components (7).

Biography:

Cecilia L Arteaga is an Ecuadorian Dietitian-Nutritionist candidate for a master's degree in nutrition and metabolism from the Rovira i Virgili University. She has developed her professional expertise in renal nutrition, especially hemodialysis. In this area of health, she highlights the importance of promoting food and nutrition education and healthy lifestyles as basic strategies for the prevention of kidney diseases. In renal lithiasis, she recommends that modifications, and not restrictions, in the diet should be applied in all patients as part of the medical-nutritional treatment.

Publication of speakers:

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