



## **Antioxidants and Kidney Calculi**

**Devendra Saran and Arshida Khatun**

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### **Abstract**

A common urinary condition that can be extremely painful and uncomfortable is kidney calculi. Kidney calculi can be treated in a variety of ways, including with medication, surgery, and dietary changes. However, antioxidant use has drawn more attention recently as a potential therapeutic strategy as these can eliminate/reduce the chances of urinary calculus development. According to studies, antioxidants can help prevent kidney calculi from forming as well as treat them once they have already formed by lowering pain and inflammation. The vital role of antioxidants related to the treatment of kidney/urinary calculi will be discussed in this article.

### **Introduction**

When kidney calculi move through the tract of urinary system, they can cause unbearable pain.

Urinary calculi or calculi are hard mineral deposits that form in the kidneys. They are more common than ever, affecting about 1 in 11 people worldwide. Despite the fact that there are many treatments available, such as medication, surgery, and dietary modifications, these procedures can be invasive, expensive, and have side effects.

In past few years, the interest in antioxidants as a potential kidney stone treatment has been developed very much. Free radicals, which can result in oxidative stress and aid in the development of kidney calculi, are neutralised by antioxidants in order to do their job. Antioxidants may aid in the inhibition and treatment of kidney calculi by lowering oxidative stress.

### **Antioxidants in the inhibition of Kidney calculi:**

According to studies, antioxidants may aid in preventing kidney calculi. According to a study that appeared in the Journal of Urology, patients who took antioxidant supplements had a lower risk of developing kidney calculi than those who did not. Antioxidants assisted in reducing the size and quantity of kidney calculi in rats, according to a different study that was published in the Journal of Endourology.



By lowering oxidative stress and inflammation, antioxidants may help prevent kidney calculi. Inflammation brought on by free radicals has been linked to kidney and urinary tract damage as well as kidney stone formation

Additionally, antioxidants may be useful in the management of kidney calculi already present.

According to a study that appeared in the International Journal of Urology, antioxidant therapy helped patients with calcium oxalate calculi have smaller kidney calculi and had better kidney function.

By lowering pain and inflammation, antioxidants may aid in the treatment of kidney calculi. Patients with kidney calculi frequently experience inflammation, which can worsen the pain and discomfort related with kidney calculi. Through the elimination of free radicals and the reduction of oxidative stress, antioxidants can reduce inflammation.

### **Conclusion:**

A common condition that can result in excruciating pain and discomfort are kidney calculi. While there are a variety of treatments available, such as prescription drugs, surgery, and dietary modifications, the use of antioxidants has drawn attention as a potential treatment option recently. According to studies, antioxidants can help prevent kidney calculi from forming as well as treat them once they have already formed by lowering pain and inflammation. The use of antioxidants may offer a promising approach for the inhibition and treatment of kidney calculi, though more research is required.

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