

# Study finds bacteria may reduce risk for kidney stones

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Researchers from Boston University's Slone Epidemiology Center have found that the bacteria *Oxalobacter formigenes* (*O. formigenes*), a naturally occurring bacterium that has no known side effects, is associated with a 70 percent reduction in the risk of recurrent kidney stones. These findings appear online in the March issue *Journal of the American Society of Nephrology*.

Kidney stones are an important health problem in many countries. In the United States, the lifetime risk for developing a stone is five to 15 percent, and a five-year risk for recurrence is 30 to 50 percent. The economic impact of hospital admissions for this condition is \$2 billion per year.

According to the researchers, up to 80 percent of kidney stones are predominately composed on calcium oxalate (CaOx) and urinary oxalate is a major risk factor for CaOx stone formation. *O. formigenes* metabolizes oxalate in the intestinal tract and is present in a large proportion of the normal adult population.

Data was collected in the Boston, Massachusetts and Durham, North Carolina areas from 247 adult patients with recurrent CaOx stones and compared with 259 age, sex, and region-matched controls. *O. formigenes* colonization was determined by culture of stool samples. Information was obtained by interview and self-administered dietary questionnaire. 24-hour oxalate excretion and other urinary risk factors were measured in a subset of 139 cases and 138 controls. The prevalence

of *O. formigenes* was 17 percent among cases and 38 percent among controls, giving an odds ratio of 0.3. The finding was consistent in subgroups defined according to age, sex, race, region and antibiotic use.

“We observed a strong inverse association between colonization with *O. formigenes* and recurrent CaOx kidney stones, with a 70 percent reduction in overall risk,” said lead researcher David Kaufman, ScD, a professor of epidemiology at Boston University School of Public Health. “Our findings are of potential clinical importance. The possibility of using the bacterium as a probiotic is currently in the early stages of investigation,” added Kaufman.

Source: Boston University

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