

## SUMMARY OF FINDINGS

# Cranberries for Preventing Urinary Tract Infections

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### ABSTRACT

As part of its efforts to disseminate the results of Cochrane reviews to a wider audience, the Cochrane Complementary and Alternative Medicine (CAM) Field develops Summary of Findings (SoF) tables and then uses those tables as a basis for its plain-language summaries. Each SoF table presents the most important outcomes for the review as well as the effect of the intervention and the quality of the evidence for each outcome. The process of developing the SoF table involves deciding which out-

comes to present for which time points and evaluating the strength and quality of the evidence for the outcomes.

In this article, we present a Cochrane review about the effects of the use of cranberries for preventing urinary tract infections. The Cochrane CAM Field contacted the authors of the Cochrane review to request clarification on points that we did not understand and to have them review the SoF tables. (*Altern Ther Health Med.* 2012;18(2):9-10)

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**T**he term urinary tract infection (UTI) refers to the presence of a certain threshold in the number of bacteria in the urine (usually >100 000/mL). The most common type of UTI is an infection in the bladder, which is called cystitis. A UTI also can occur in the upper urinary tract or kidney, which is called pyelonephritis. Although UTIs can occur in both men and women, they are about 50 times more common in adult women than adult men. This situation may occur because women have short-

er urethras, which allow bacteria to ascend more easily into the bladder. Signs and symptoms of UTIs include pain on passing urine, frequent urination, and cloudy urine. Occasionally, UTIs may also cause blood in the urine, flank pain and back pain, fever, chills with shaking, and a generally ill feeling.

Practitioners of complementary and alternative medicine have used cranberries (usually as cranberry juice) to prevent urinary tract infections. It is not clear what the optimum dosage and method of administration (eg, juice, tablets, or capsules) are. Researchers have established no definite mechanism of action for cranberries in the prevention or treatment of UTIs. The primary proposed mechanism of action, however, is that cranberries prevent bacteria from adhering (sticking) to cells that line the wall of the bladder.

### The Research

Not all research provides the same quality of evidence. The higher the quality, the more certain we can be about an effect that the research has found. The words will (high-quality evidence), probably (moderate-quality evidence), and may (low-quality evidence) describe how certain we are about the effect.

After searching for all relevant trials, the review authors found 10 trials that they included in the review. Only 4 of these 10 trials, however, had results data that the review authors could extract for a meta-analysis. In addition, one of these 4 trials included only 10 people, and the review authors did not

**Table.** Summary of Findings: Cranberries Compared to Placebo for Urinary Tract Infection

**Patient or population:** Patients with urinary tract infection  
**Settings:** Hospital and outpatient  
**Intervention:** Cranberries  
**Comparison:** Placebo or no treatment<sup>a</sup>

Outcomes	Illustrative Comparative Risks <sup>b</sup> (95% CI)		Relative Effect (95% CI)	No. of Participants (Trials)	Quality of Evidence (GRADE)
	Assumed risk	Corresponding risk			
	Placebo or No Treatment	Cranberries			
Women with recurrent UTI; at least one symptomatic UTI during previous 6 to 12 mo	37 per 100	22 per 100 (15-33 per 100)	RR 0.61 (0.4-0.91)	241 (2 trials)	⊕⊕○○ low <sup>c</sup>
Elderly men and women; at least one symptomatic UTI during previous 6 mo	7 per 100	4 per 100 (2-9 per 100)	RR 0.51 (0.21-1.22)	376 (1 trial)	⊕⊕○○ low <sup>d</sup>

**GRADE Working Group grades of evidence**

**High-quality:** Further research is very unlikely to change our confidence in the estimate of effect.

**Moderate-quality:** Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.

**Low-quality:** Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.

**Very low-quality:** We are very uncertain about the estimate.

<sup>a</sup>The comparator was no intervention in 1 of the 2 trials among women with recurrent UTI and placebo in both the other trial among women with recurrent UTI and the trial among elderly men and women.

<sup>b</sup>We calculated the assumed risk based on the median control group risk across trials. We based the corresponding risk (and its 95% confidence interval [CI]) on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).

<sup>c</sup>Only 2 small studies included. Wide CI but significant effect.

<sup>d</sup>One study with wide CI.

Abbreviations: CI, confidence interval; RR, risk ratio; UTI, urinary tract infection.

include it in the quantitative analysis. The findings from the 3 remaining trials show that taking cranberry products compared to placebo products (1) may decrease the number of symptomatic UTIs over a 6-to-12 month period for women with recurrent UTI and (2) may not improve the number of symptomatic UTI over a 6-month period for elderly men and women.

In general, the studies poorly documented side effects, and the review authors found it difficult to obtain precise information. A large number of participants dropped out/withdrew

(20%-55%) both in the intervention and the placebo groups due to symptoms of reflux, mild nausea, and increased frequency of bowel movements.

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