

Do Cranberry Proanthocyanins Prevent Recurrent Urinary Tract Infections?

A Review of the Evidence

CRANDOR™
TotalPAC



Why is there interest in cranberry products for the prevention of urinary tract infections (UTIs)?

Figure 1.

Up to 1 in 10 Women May Experience Recurrent UTIs.¹⁻⁵



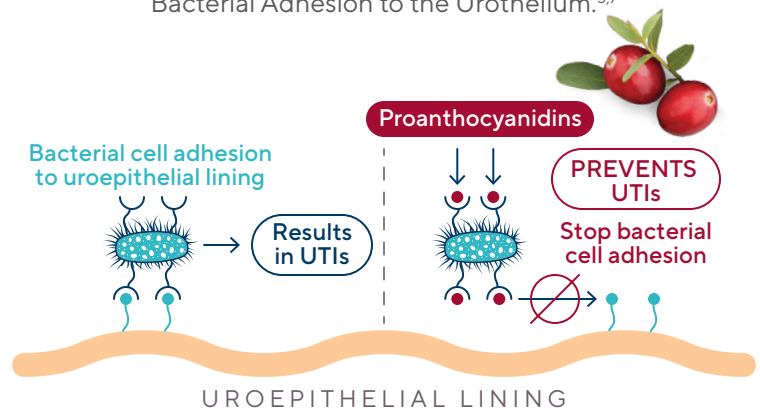
● No UTI ● Lifetime UTI ● Multiple UTIs ● Multiple recurrent episodes of UTIs

- The lifetime prevalence of UTI is estimated to be about 60% among women, with approximately one-third of these individuals experiencing more than one episode, and up to half of those with multiple episodes experiencing recurrent UTIs (Figure 1).¹⁻⁵
- The elevated prevalence of UTIs means that they pose a significant burden on the healthcare system, accounting for up to 1% of all ambulatory care visits.⁶
- While low-dose antibiotic prophylaxis is effective in preventing recurrent UTIs, the growing issue of antibiotic resistance has increased interest in alternative means of prevention, such as cranberry (*Vaccinium macrocarpon*)-based products.⁵

What is the proposed mechanism of action of cranberries with regards to the prevention of UTIs?

Figure 2.

Cranberry PACs Are Thought to Act by Preventing Bacterial Adhesion to the Urothelium.^{5,7}



Adapted from: Jangid H, et al. Front Nutr 2025; 12:1502720.

The active compounds in cranberries are thought to be proanthocyanidins (PACs), which have been shown to prevent adhesions of bacteria to the uroepithelial lining, a key step in the pathogenesis of UTIs (Figure 2).^{5,7}

What does the evidence say about cranberries and UTI prevention?

- A systematic Cochrane review identified 50 studies that investigated cranberry products for the prevention of UTIs, including 19 studies evaluating cranberry juice or juice concentrate and 29 evaluating cranberry tablets, capsules, or powder.⁸
- These studies found that cranberry products in general were effective in reducing the risk of UTIs, including in women with recurrent UTI, with cranberry powders/tablets also demonstrating significant efficacy in this population (Table 1). The overall risk reduction across studies and populations was 30%.⁸
- No difference in the risk ratio for symptomatic culture-verified UTI was observed in the studies comparing cranberry products to prophylactic antibiotics.⁸
- Estimates of the PAC dose administered were available for less than half of the studies included in the meta-analyses, with only 3 studies looking at efficacy across PAC amounts.⁸

Table 1.

Summary of Results of Meta-analyses of Cranberry Products for the Prevention of UTIs.⁸

Product	Any cranberry product		Cranberry juice or syrup		Cranberry tablets or powder		Any cranberry product	
Comparator	Placebo or control						Antibiotics	
Population	Any	Women with recurrent UTI	Any	Women with recurrent UTI	Any	Women with recurrent UTI	Any	Women with recurrent UTI
Number of RCTs	28	8	13	6	16	3	2	1
Number of participants	6211	1555	2831	1322	3473	333	385	199
Risk ratio for symptomatic culture-verified UTI (95% CI)	0.7	0.74	0.78	0.84	0.65	0.45	1.03	1.02
	(0.58-0.884)	(0.55-0.99)	(0.62-0.97)	(0.63-1.10)	(0.49-0.84)	(0.28-0.72)	(0.80-1.33)	(0.76-1.37)

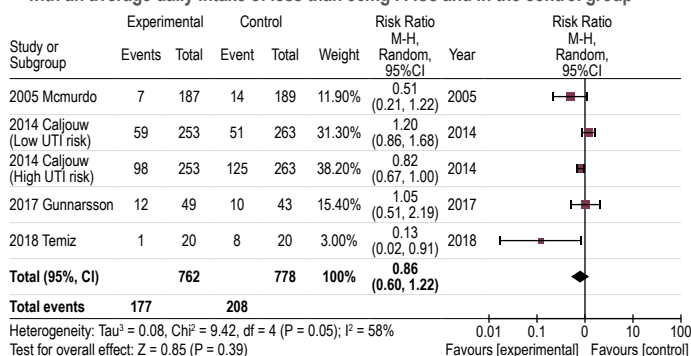
CI, confidence interval; RCT, randomized controlled trial

What dose of PAC is required for the prevention of recurrent UTIs?

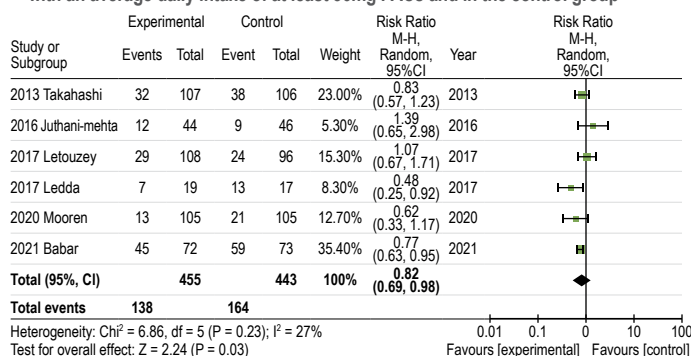
- A recent meta-analysis concluded that daily intake of ≥ 36 mg of cranberry PACs significantly reduced the risk of UTIs (risk ratio 0.92, 95% CI 0.60-0.98), while doses of <36 mg had no significant impact (figure 3).⁹

Figure 3. Forest Plots for Incidence of UTIs with Average Daily Intake of <36 mg and ≥ 36 mg of Cranberry PACs.⁹

a. Forest plot showing the incidence of UTIs after intervention for cranberry products with an average daily intake of less than 36mg PACs and in the control group



b. Forest plot showing the incidence of UTIs after intervention for cranberry products with an average daily intake of at least 36mg PACs and in the control group



What can we conclude?

- Cranberry products are recommended by the American Urological Association (AUA)/Canadian Urological Association (CUA)/Society of Urodynamics, Female Pelvic Medicine & Urogenital Reconstruction (SUFU) guidelines as an alternative to antibiotics for prophylaxis of recurrent uncomplicated UTIs in women.^{5,10}
- Meta-analyses have shown that cranberry products can prevent recurrent UTIs in women at risk, although there appears to be considerable variation between studies in terms of product efficacy.^{8,9}
- Some of this variation may be due to the differences in the amount or concentration of PACs in the various products used, with a recent meta-analysis finding that daily dose of PAC had to be ≥ 36 mg in order to have a significant impact on the prevention of recurrent UTIs.⁹
- Careful selection of a cranberry product containing validated quantities of PACs should help optimize preventative outcomes in women with recurrent UTIs.
- Crand'Or™ TotalPAC is a premium, full-spectrum organic cranberry powder that guarantees a minimum of 7.2% of soluble and insoluble PAC content.¹ One 500 mg capsule of Crand'Or™ TotalPAC delivers the 36 mg of cranberry PAC needed to prevent recurrent UTI.¹¹

References:

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