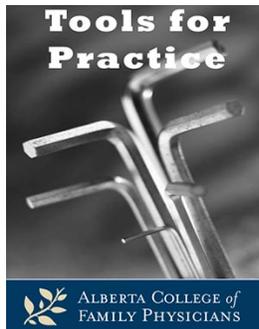


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Cranberry juice/tablets for the prevention of urinary tract infection: Naturally the best?

Clinical Question: Does Cranberry juice or extract prevent recurrent urinary tract infections (UTI)?

Bottom-line: Available evidence does not support cranberry products for reduction of UTIs. The overall quality of evidence is poor.

Evidence:

Two 2012 systematic reviews^{1,2} and 1 randomized controlled trial (RCT),³ all with ~6 months follow-up.

- Cochrane: 24 RCTs (13 RCTs with juice/concentrate, 10 tablets/capsules and 1 both) of 4473 mostly female patients.¹
 - 13 RCTs meta-analyzed
 - No significant difference in number of patients getting ≥ 1 UTI, Relative Risk (RR) 0.86 (0.71-1.04).
 - No difference in recurrent UTI, elderly, catheterized patients, pregnant, or children.
 - Studies not meta-analyzed: 8 found no benefit; 2 found benefit.
 - RCTs at high risk of bias: For example 75% of RCTs excluded patients from analysis and 46% lost $\geq 20\%$ of patients.
- Archives: 13 RCTs (8 RCTs of juice/concentrate, 4 tablets/capsules and 1 both) in 1616 mostly female patients.²
 - Statistically significant reduction in UTIs, RR 0.62 (0.49-0.80). Number Needed to Treat (NNT) 12 to avoid recurrent UTI.
 - Excluded one negative outlier trial, but not the one positive outlier trial from analysis.
 - If positive outlier excluded, results no longer significant.
 - Issues: Poorer quality literature search, poor quality RCTs (as above), and selective analysis.
- RCT: 176 young women with recent UTI.³
 - No difference in UTI between cranberry juice or placebo.

Context:

- Proposed active ingredient in cranberry (A-type proanthocyanidins) is believed to inhibit adherence of *Escherichia coli* to the urogenital mucosa.^{1,2} Clinically unproven.

- Cranberry juice/cocktail costs ~\$0.45-0.66 and contains 120-150 calories per 250ml.
 - Assuming 2 cups per day and the most positive data:² A one in 12 chance of avoiding UTI over 6 months would cost ~\$180 and ~45,000 calories. (5.8kg potential weight gain)
- Cranberry products likely inferior to antibiotics.
 - RCT of 221 women with recurrent UTI: statistically significant more UTIs over 12 months for cranberry capsules (4/woman) versus trimethoprim-sulfamethoxazole (1.8/woman).⁴

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Tools for Practice is a biweekly article summarizing medical evidence with a focus on topical issues and practice modifying information. It is coordinated by G. Michael Allan, MD, CCFP and the content is written by practising family physicians who are joined occasionally by a health professional from another medical specialty or health discipline. Each article is peer-reviewed, ensuring it maintains a high standard of quality, accuracy, and academic integrity.

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