Medicine by the Numbers

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The NNT Group rating system:

Green:	Benefits greater than harms
Yellow:	Unclear benefits
Red:	No benefits
Black:	Harms greater than benefits

Tap Water vs. Sterile Saline for Wound Irrigation

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TAP WATER VS. STERILE SALINE FOR WOUND IRRIGATION

No significant difference

Benefits	*Harms*
	None were harmed by using tap water

Details for This Review

Study Population: Adults with superficial wounds

Efficacy End Points: Prevention of wound infection

Harm End Points: None identified

Narrative: Various solutions are available for use in wound irrigation. It has been suggested that normal saline may be preferable because of its isotonicity and sterility. This review examines tap water as an alternative to normal saline for wound cleansing and prevention of subsequent infection.

A Cochrane review, including three studies of adults and two studies of children, compared the rates of acute infection from the use of these two solutions for acute wound cleansing.[1] In adults (1,328 participants), there was a nonsignificant decrease in wound infection in the tap water group (relative risk = 0.66; 95% confidence interval [CI], 0.42 to 1.04). In children (535 participants), there was a nonsignificant increase in wound infections in the tap water group (relative risk = 1.07; 95% CI, 0.43 to 2.64).

A double-blind randomized controlled trial published since this Cochrane review found similar results. In the 663 participants studied, there was no difference between those irrigated with tap water vs. normal saline, with a trend toward decreased infections in the tap water group.[2]

Given the lack of adverse events and the affordability of tap water, tap water should be considered as preferable to normal saline for cleansing of acute wounds.

Caveats: In the Cochrane review studies, there was no standardization for wound infection diagnosis across the pooled data. In the case of chronic wounds, a small study found a similar, nonsignificant decrease in infection in the tap water group compared with the normal saline group (number needed to treat = 9; 95% CI, 0.01 to 2.96).[3]

Interestingly, two studies comparing the use of tap water for wound cleansing vs. no cleansing (one enrolling patients with acute head wounds and the other enrolling postoperative hernia patients caring for their wounds at home) found no difference in infection rates.[4,5] However, these studies were small and of moderate quality, and further investigations are needed before these findings can be generalized to a broader group.

This series is coordinated by Dean A. Seehusen, MD, MPH, *AFP* Contributing Editor, and Daniel Runde, MD, from the NNT Group.

This review is available from the NNT Group at http://www.thennt.com/nnt/tap-water-for-wound-irrigation/.

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