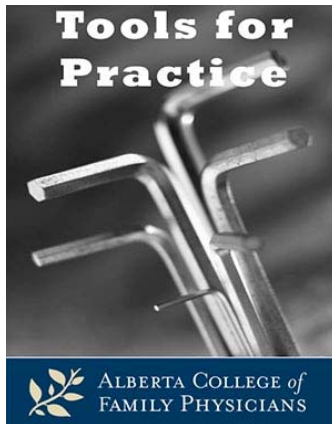


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Lacerations: Sterile Gloves & Water?

Clinical Question:

In the management of simple lacerations, are sterile gloves and sterile saline required to reduce infection?

Evidence:

- A Randomized Control Trial (RCT) in Canadian Emergency Departments compared sterile vs non-sterile gloves (both latex-free) in sutured repair of lacerations.¹
 - The study enrolled 816 patients (age ≥ 1) with blinding of patients and outcome assessors.
 - Infection rates by 23 days were 4.3% in the non-sterile group and 6% in the sterile group (no statistical difference).
- In a Cochrane Systematic Review, 3 RCTs (with 1338 patients) were combined in a meta-analysis comparing tap water to saline for the irrigation of lacerations.²
 - Infection rates were 4.4% for tap water and 7% for saline, with borderline statistical difference ($p=0.045$) for fewer infections using tap water.
 - The two largest studies (with 94% of the patients in this analysis) used sterile saline, while one small study (77 patients) used non-sterile saline.

Context:

- The study of non-sterile gloves is the only RCT we have but it is high quality and reasonable in size.
- Two older studies (with 50 and 408 patients)^{3,4} with questionable randomization surprisingly compared no gloves at all to sterile gloves and infections did not increase.
 - These two studies have significant limitations, and suturing without any gloves is clearly not appropriate for a host of reasons including blood-borne infective diseases.
 - However, these do lend support to the idea that sterile gloves likely offer little advantage in the repair of simple lacerations.
- When considering the Cochrane review of tap water irrigation, there is a suggestion that saline increases the risk of infection but this includes a small study of non-sterile saline and one study of questionable randomization.
- However, if we focus on the best study - a high quality RCT of 713 patients comparing tap water and sterile saline with no difference in infections - it appears that sterile saline offers no advantages over tap water.⁵

Bottom-line: The present evidence indicates simple lacerations can be cleaned with tap water and repaired with clean non-sterile gloves without an increased risk of infection.

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1. [Ann Emerg Med 2004; 43\(3\): 362-370.](#)
2. [Cochrane Database Syst Rev 2008; \(1\):CD003861.](#)
3. [Can FamPhysician. 1987; 33: 1185-1187.](#)
4. [Lancet. 1982; 2: 91-92.](#)
5. [Acad Emerg Med 2007; 14: 404-9.](#)

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. Archived articles are available on the Toward Optimized Practice website.

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