










Non-sterile gloves were as safe as sterile gloves for repair of uncomplicated lacerations

Perelman VS, Francis GJ, Rutledge T, *et al.* Sterile versus nonsterile gloves for repair of uncomplicated lacerations in the emergency department: a randomized controlled trial. *Ann Emerg Med* 2004;**43**:362–70.

Clinical impact ratings FP/GP/Emergency ★★★★★☆☆ Emergency Medicine ★★★★★☆☆ GP/FP/Primary care ★★★★★☆☆

Q In patients with soft tissue lacerations, is the use of clean non-sterile gloves for the repair of lacerations as safe as sterile gloves?

METHODS

	Design: randomised controlled trial.
	Allocation: {concealed*}†.
	Blinding: blinded (patients, outcome assessors, {data collectors, and data analysts}†).*
	Follow up period: mean telephone follow up of 23 days.
	Setting: 3 community hospitals in Toronto, Ontario, Canada.
	Patients: 816 patients ≥1 year of age (mean age 30 y, 73% men) who presented to the emergency department (ED) with any type of uncomplicated soft tissue laceration. Exclusion criteria: diabetes mellitus, renal failure, asplenia, immunodeficiency, liver cirrhosis, tendency to form keloid scars, current use of antibiotics, or need for prophylactic antibiotics.
	Intervention: wound repair by the physician wearing latex free gloves that were non-sterile (n=408) or sterile (n=408) (both types of gloves Allegiance, Cardinal Health Company, IL, USA).
	Outcomes: wound infection rate determined by the physician providing wound follow up (with culture results if the wound was deemed sufficiently infected to warrant a swab) or by standardised questions to patients in telephone interviews. The study had 80% power to detect a 50% relative risk reduction in infection rate by using sterile gloves.
	Patient follow up: 98%.
	*See glossary. †Information provided by author.

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Sources of funding: Canadian Association of Emergency Physicians and Bales Research Foundation of North York General Hospital.

MAIN RESULTS

Infection rates did not differ between the clean non-sterile glove group and the sterile glove group (table).

CONCLUSION

In patients with soft tissue lacerations, the rate of wound infection was no greater with the use of clean non-sterile gloves than with sterile gloves.

Commentary

Tradition would dictate that repairing traumatic lacerations should be done using sterile technique, although little evidence exists to support this practice. The interesting study by Perelman *et al* calls into question the need for sterile gloves when repairing lacerations. The study included a convenience sample of patients who presented to the ED with various types of lacerations and were randomised to have their wounds closed using sterile or clean non-sterile gloves. Patients were blinded to the type of gloves used and were given an assessment form to be completed by their physician at the time of follow up. If the form was not returned, telephone follow up was done. Although the return rate of the forms was relatively low (49%), overall follow up was excellent (98%). One wonders if telephone follow up might overestimate the presence of wound infections, but even if it did, the patients were blinded to the type of gloves used, so it should not bias the reporting of infections. It seems reasonable that telephone follow up should be able to determine the occurrence of significant infections.

Overall, no significant difference in infection rates was found between the sterile and clean glove groups. However, the trial was not designed to prove equivalence between the 2 treatments, as the sample size required for an equivalence trial was prohibitively large. None the less, the results do not suggest a large difference between the 2 groups, and looking at the confidence intervals, there is unlikely to be a clinically important difference between the groups.

Despite the methodological issues, this trial provides the best evidence yet that sterile gloves are probably unnecessary for suturing simple lacerations in the ED. And I'm impressed by the simplicity of the study and that clinicians enrolled patients and collected the initial study data, which would have made this relatively clean study possible on a modest budget.

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Clean non-sterile gloves v sterile gloves for laceration repair*

Outcome at mean 23 days	Clean non-sterile gloves	Sterile gloves	RRR (95% CI)	NNT
Wound infection rate	4.3%	6.0%	28% (-30 to 60)	Not significant

*Abbreviations defined in glossary; RRR, NNT, and CI calculated from data in article.