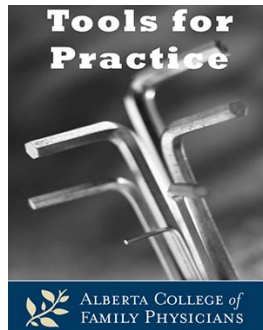


Tools for Practice is proudly sponsored by the Alberta College of Family Physicians (ACFP). ACFP is a provincial, professional voluntary organization, representing more than 4,500 family physicians, family medicine residents and medical students in Alberta. Established over sixty years ago, the ACFP strives for excellence in family practice through advocacy, continuing medical education, and primary care research. www.acfp.ca

January 9, 2017



All You Need is Glove: Are non-sterile gloves safe for excisions in the office?

Clinical Question: Does the use of non-sterile (clean) gloves for office-based excisions result in more infections when compared to the use of sterile gloves?

Bottom-line: Using non-sterile gloves does not increase the number of infections when compared to sterile gloves for outpatient minor/uncomplicated skin (not flap) excisions and laceration repair in immune-competent adults. The current standard of care of using sterile gloves in these procedures is likely unnecessary and more costly. Unclear if this applies to sebaceous cyst excision, as these weren't studied.

Evidence:

- Minor skin excision:
 - Australian primary care Randomized Controlled Trial (RCT) of 493 patients (mean age 65) for mean 2 cm excision (33% head/neck).¹ Infection rate:
 - 8.7% non-sterile gloves versus 9.3% sterile gloves, not statistically different.
 - Prospective cohort of dermatologic surgery.² Infection rates:
 - 3,071 simple excisions: 1.7% non-sterile gloves versus 1.6% sterile gloves, not statistically different.
 - 420 reconstructive (flap) procedures: Non-sterile gloves statistically significantly more infections versus sterile gloves (14.7% versus 1.6%).
 - Retrospective primary care chart review (131 minor procedures).³ Infection rate:
 - 2.4% non-sterile gloves (sterile gloves not reported).
- Mohs dermatological surgery:
 - Small RCT of 60 patients (mean age 73) with mean 2.2 cm excisions (85% head/neck).⁴ Infection rate:
 - 3% non-sterile gloves versus 7% sterile gloves, not statistically significant.
 - Three observational studies:
 - One cohort (20,821 procedures):⁵ Sterile gloves reduces infection rate by 0.47% versus non-sterile (p=0.04).
 - Two cohorts (1,400 and 2,025 procedures) found no difference in infection rates.^{6,7}

Context:

- Important exclusions:
 - Sebaceous cyst excision^{1,2} (possibly due to existing infection²).
 - Complex procedures (like closure requiring flaps)¹ or found may have increased infection risk.²
 - Immuno-compromised patients.^{1,4}
- Other limitations:
 - Mohs excisions often more complex with potentially multiple glove changes: possibly less primary care relevance.⁴⁻⁷
 - Cohort studies: lower-level evidence.^{2,3,5-7}
- Research indicates simple lacerations can be repaired/sutured using non-sterile gloves.⁸
- Another RCT shows that keeping sutured wounds dry beyond 12 hours did not reduce infection rates.⁹
- Sterile gloves cost 3.5-16 times more than non-sterile gloves.^{1,4,6,7}

Authors:

Ezekial Steve MD, G. Michael Allan MD CCFP

Disclosure:

Authors have no conflicts of interest to declare.

References:

1. Heal C, Sriharan S, Buttner PG, *et al.* Med J Aust. 2015; 202:27-31.
2. Rogues AM, Lasheras A, Amici JM, *et al.* J Hosp Infect. 2007; 65:258-63.
3. Bruens ML, van den Berg PJ, Keijman JMG, *et al.* Br J Gen Pract. 2008; 58: 277-8.
4. Xia Y, Cho S, Greenway HT, *et al.* Dermatol Surg. 2011; 37:651-6.
5. Alam M, Ibrahim O, Nodzanski M, *et al.* JAMA Dermatol. 2013; 149:1378-85.
6. Rhinehart MB, Murphy MM, Farley MF, *et al.* Dermatol Surg. 2006; 32:170-6.
7. Mehta D, Chambers N, Adams B, *et al.* Dermatol Surg. 2014; 40(3):234-9.
8. Allan GM. Tools for Practice. Available at: https://www.acfp.ca/wp-content/uploads/tools-for-practice/1397745796_20130913_125822.pdf. Last accessed: December 20, 2016.
9. Heal C, Buettner P, Raasch B, *et al.* BMJ. 2006 May 6; 332(7549):1053-6.

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. If you are not a member of the ACFP and would like to receive the TFP emails, please sign up for the distribution list at <http://bit.ly/signupfortfp>. Archived articles are available on the ACFP website.

This communication reflects the opinion of the authors and does not necessarily mirror the perspective and policy of the Alberta College of Family Physicians.