
Does postoperative showering or bathing of a surgical site increase the incidence of infection? A systematic review of the literature

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CRD summary

The authors concluded there was no basis for recommending that a patient avoid showering or bathing a surgical incision site as part of their normal hygiene during the healing process. The authors' conclusions reflect the evidence presented but limitations in the evidence and potential for missed data question the reliability of the conclusions.

Authors' objectives

To assess the effect of postoperative showering or bathing on surgical site infection.

Searching

PubMed, Cochrane Central Register of Controlled Trials (CENTRAL) and ACP Journal Club databases and Google Scholar were searched for relevant articles published in English to September 2012. Search terms were reported. Bibliographies of retrieved articles, "common" foot and ankle journals and general surgical references were searched.

Study selection

Eligible studies were either case series or prospective observation studies with clearly defined patient groups and that assessed the effect of showering or bathing as part of a daily hygiene routine on a surgical incision site. Studies had to include 50 or more patients. Participants could bathe or shower and wet the surgical site before suture or staple removal. Studies where patients used a form of prolonged emersion such as swimming or soaking were excluded.

All studies appeared to use tap water but it varied whether soap or antibiotic soap was used. Intervals before washing a wound site varied in the intervention groups from immediately to one week postoperatively. Studies with control groups stated participants could wash wound site once sutures/staples were removed (where reported). Material used to close wounds varied between studies. Site of surgical procedures varied and included spinal surgery and foot and ankle surgery, where reported. Surgical procedures varied.

Two or more reviewers independently assessed studies for inclusion.

Assessment of study quality

The quality of studies was assessed with criteria for study design, use of clearly defined methods, rational and objective outcomes, appropriate follow-up, controlled variables, controlled study population and absence of mixed modalities. Studies that were graded level 1, 2, 3 and 4 according to the American College of Foot and Ankle Surgeons levels of clinical evidence guidelines were included; the lower number indicated higher quality of study design.

The authors did not state how many reviewers assessed study quality.

Data extraction

The authors stated neither how data were extracted nor how many reviewers extracted data.

Methods of synthesis

Data were combined in a narrative synthesis.

Results of the review

Nine studies (2,150 participants, range 60 to 857) were included in the review. Five studies were randomised controlled trials, one was a prospective cohort study with an historical control group and three were uncontrolled case series.

Early bathing or showering of surgical wound incisions did not increase the risk of infection. Infection rates ranged from 0% to 8.4% in intervention groups and 0% to 18% in control groups.

Authors' conclusions

There was no basis for recommending that a patient should avoid showering or bathing a surgical incision site as part of their normal hygiene during the healing process.

CRD commentary

The review question was clearly reported with broadly defined inclusion criteria. Several relevant sources were searched. The restriction to studies published in English meant that some data may have been missed. The authors stated that they conducted a quality assessment but reporting of results was limited to level of evidence by study design so it was difficult for the reader to determine the accuracy of the results. Appropriate methods to reduce reviewer error and bias were used for study selection by using two or more independent reviewers; whether similar methods were used for quality assessment and data extraction was unclear. A narrative synthesis was appropriate given the between-study diversity of procedures used, surgical sites and study designs.

The authors' conclusions reflect the evidence presented but uncertainty about the quality of the included studies, small sample sizes, limitations with study designs, variations between studies and potential for missed data question the reliability of the conclusions.

Implications of the review for practice and research

Practice: The authors stated that the findings might not represent accurate recommendations for foot and ankle surgery.

Research: The authors stated that further research was needed into the effect of different suture materials, nutritional status of the patient, immunosuppression, corticosteroid use and rate of perfusion to the wounded area on the risk of infection when washing was permitted after surgery. Further research was needed to clarify the role of showering, bathing and water contact with regard to postoperative surgical site infection in the foot and ankle.

Funding

None.

Bibliographic details

Dayton P, Feilmeier M, Sedberry S. Does postoperative showering or bathing of a surgical site increase the incidence of infection? A systematic review of the literature. *Journal of Foot and Ankle Surgery* 2013; 52(5): 612-614

PubMedID

[23587992](#)

DOI

[10.1053/j.jfas.2013.02.016](#)

Original Paper URL

<http://www.sciencedirect.com/science/article/pii/S1067251613000707>

Indexing Status

Subject indexing assigned by NLM

MeSH

Bandages; Baths; Humans; Postoperative Care; Skin Care; Surgical Wound Infection /etiology; Sutures

AccessionNumber

12013020709

Date bibliographic record published

29/04/2013

Date abstract record published

08/08/2013

Record Status

This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.