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[Intervention Review]

Removal of nail polish and finger rings to prevent surgical infection

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ABSTRACT

Background

Surgical wound infections may be caused by the transfer of bacteria from the hands of surgical teams to patients during operations. Surgical scrubbing prior to surgery reduces the number of bacteria on the skin, but wearing rings and nail polish on the fingers may reduce the efficacy of scrubbing, as bacteria may remain in microscopic imperfections of nail polish and on the skin beneath rings.

Objectives

To assess the effect of the presence or absence of rings and nail polish on the hands of the surgical scrub team on postoperative wound infection rates.

Search methods

For this fifth update, we searched The Cochrane Wounds Group Specialised Register (searched 23 July 2014); The Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library*); Ovid MEDLINE; Ovid MEDLINE (In-Process & Other Non-Indexed Citations); Ovid EMBASE and EBSCO CINAHL.

Selection criteria

Randomised controlled trials (RCTs) evaluating the effect of wearing or removing finger rings and nail polish on the efficacy of the surgical scrub and postoperative wound infection rate.

Data collection and analysis

All abstracts were checked against a checklist to determine whether they fulfilled the inclusion criteria. Full reports of relevant studies were obtained. Excluded trial reports were checked by all review authors to ensure appropriate exclusion.

Main results

We identified: no new trials; no RCTs that compared wearing of rings with the removal of rings; and no trials of nail polish versus no nail polish that measured surgical infection rates.

We found one small RCT (102 scrub nurses) that evaluated the effect of nail polish on the number of bacterial colony forming units left on hands after pre-operative surgical scrubbing. Nurses had either unpolished nails, freshly-applied nail polish (less than two days old), or old nail polish (more than four days old). There were no significant differences in the number of bacteria on hands between the groups before and after surgical scrubbing.

Authors' conclusions

No trials have investigated whether wearing nail polish or finger rings affects the rate of surgical wound infection. There is insufficient evidence to determine whether wearing nail polish affects the number of bacteria on the skin post-scrub.

PLAIN LANGUAGE SUMMARY**No evidence to show whether removing nail polish and finger rings prevents wound infection after surgery**

People having surgery can get a serious wound infection from bacteria (germs) on the hands of operating theatre staff (doctors, nurses, and assistants). Theatre staff scrub their hands intensively before operations to reduce the number of bacteria on them. It may be that nail polish (varnish) and rings (jewellery) hide bacteria and reduce the effectiveness of hand scrubbing. This review could not locate any trials that investigated the effect of theatre staff wearing rings, but did find one small trial that investigated the number of bacteria before and after scrubbing on the hands of theatre staff with varnished and unvarnished nails. This trial did not identify any clear differences between the number of bacteria on varnished and unvarnished nails, but evidence from more trials is required before we can be certain that this is a true result.