

# Impact of changing gloves during cesarean section on postoperative infective complications: A systematic review and meta-analysis

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## Objective

The aim of this study was to assess the impact of changing gloves intraoperatively on post-caesarean section infective morbidity.

## Background

The caesarean section rate around the world, currently estimated at 21.1%, continues to increase. Women who undergo a caesarean section sustain a seven- to ten-fold greater risk of infective morbidity compared with those who deliver vaginally.

## Materials and methods

MEDLINE, Scopus, Web of Science, CINAHL, WHO Global Index Medicus and Cochrane Central were searched for randomised controlled trials up to June 2020. Published randomised controlled trials that evaluated the effects of glove changing during caesarean section on infective complications were considered eligible for inclusion in the review.

Two independent reviewers selected studies, assessed the risk of bias and extracted data regarding interventions and adverse maternal outcomes. Opposing variables (dichotomous) were presented and included in the meta-analyses as risk ratios (RR) with 95% confidence intervals (CI). The quality of evidence was assessed using the GRADE approach, in accordance with the recommendations of the Cochrane Review Group.

## Results

Seven randomised controlled trials reporting data on 1,948 women were included. Changing gloves during caesarean section was associated with a statistically significant reduction in the incidence of wound infective complications (RR 0.41, 95% CI 0.26-0.65,  $p < 0.0001$ ; GRADE moderate-quality evidence). A relative risk (RR) of 0.41 means a 59% lower risk of post-caesarean SSI ( $0.59 = 1 - 0.41$ )\*. This intervention appeared to be effective only when performed after delivery of the placenta, before final closure.

## Conclusions

Changing gloves after delivery of the placenta, before final closure during caesarean section is associated with a significant reduction in the incidence of post-surgical wound complications compared with keeping the same gloves throughout the entire procedure.

However, an adequately powered study assessing the limitations and cost-effectiveness of this intervention is needed before the recommendation can be translated into current clinical practice.

\*Conversion of relative risk (RR) to percent reduction was calculated by Mölnlycke Health Care.

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