

# Surgical face masks or not during surgery?

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The following question was answered by a systematic review of the literature: Is wearing surgical face masks during surgery superior to not wearing surgical face masks during surgery in the prevention of surgical site infection?

## Data sources

Publications were retrieved by a search of Medline and the Cochrane Library up to 2002. Terms included were surgical face mask OR surgical face masks. To identify randomised controlled trials in Medline the search strategy developed by Robinson was used. Additionally, all reference lists of identified trials were examined.

## Selection criteria

All randomised and quasi-randomised trials comparing the use of surgical face masks with the use of no mask and surgical wound infection as the outcome measure.

## Review methods

Data were extracted by two reviewers independently and compared. Disagreements were resolved by discussion. Data from the original publications were used to calculate the relative risk of catheter-related infection. Data for similar outcomes were combined in the analysis where appropriate, using a random-effects model.

## Results

Two parallel-group randomised controlled trials were included (1,2).

## Study population, interventions and outcome definitions

See Table I

## Validity assessment

See Table II

## Summary estimates of associations between treatment and control group

See Table III

Table I: Study population, interventions and outcome definitions

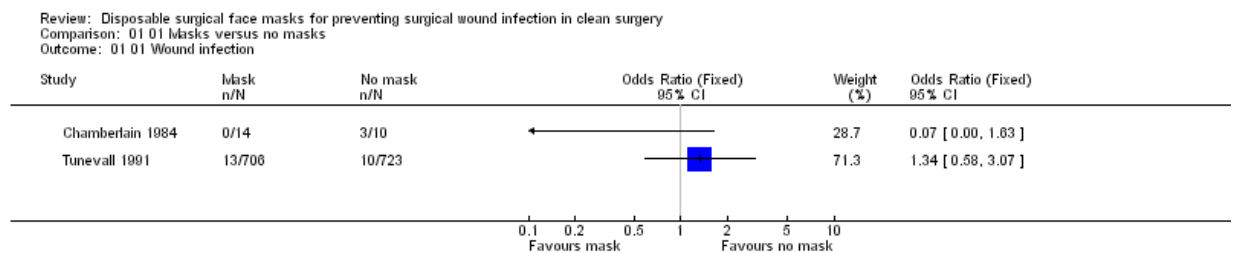
Study	Participants	Interventions	Outcome definitions
Chamberlain 1984	Incl: female patients undergoing gynaecological surgery  Excl: none stated	Treatment: masks Control: no masks	Not reported
Tunevall 1991	Incl: acute and elective general surgery patients: operated through intact skin and	Treatment: masks Control: no masks	Surgical site infection was defined as visible pus and / or cellulitis without pus requiring

	sutured by primary intention Excl: anal procedures, outpatient, orthopaedic, operations, urologic operations, increased risk of infection (insertion synthetic graft, hematologic disease)		debridement, drainage and / or antibiotics.
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Table II: Data on quality assessment

	General quality assessment	
<b>Chamberlain 1984</b>	<i>Generation of allocation sequence:</i> <i>Concealment of allocation:</i> <i>Description of dropouts:</i>	Quasi-randomised controlled trial  Inadequate  Not reported
<b>Tunevall 1991</b>	<i>Generation of allocation sequence:</i> <i>Concealment of allocation:</i> <i>Description of dropouts:</i>	Quasi-randomised controlled trial  Inadequate  Not reported

Table III: Summary estimates of associations between treatment and control group expressed as relative risk (RR) and 95% confidence interval (CI) using a random effects model



### Comments (points of criticism)

Chamberlain et al discontinued study because 3 patients in the unmasked group developed wound infections whereas no infection was observed in the masked group. Wound infections were not proven as causal.

### Conclusion

Infection control in the operating theatre is a complex system that has evolved over many years. Wearing face masks is one out of many preventive measures. There is insufficient evidence on which to change a current recommendation in such a complex infection control system.

**References**

1. Tunevall TG. Postoperative wound infections and surgical face masks: a controlled study. *World J Surg* 1991;15:383-88.
2. Chamberlain GV, Houang E. trial of the use of masks in the gynecological operating theatre. *Ann R Coll Surg Eng* 1984;66:432-3.