

Summary of findings:



#### 4. Hygiene promotion programs compared to no intervention for prevention of acute otitis media

**Patient or population:** Children with mean age of 3.5 years.

**Setting:** Primary health care / Community Day Care Centres.

**Intervention:** Hygiene promotion programs - The infection prevention program consisted of intensified handwashing, the use of an alcohol-based oilydisinfectant, directions on the use of disposable towels, cleaning of the child-care centres and regular washing of the toys, or if that was not possible, circulation of the toys so that they were taken out of use for at least every other week. One healthy adult person always served food and tooth brushing was withdrawn. Attention was paid to diaper changing practices and the places where this was done. The personnel were encouraged to take sick leave at first appearance of symptoms (exact procedures and instructions given to the personnel are available on request). Duration was over 15 months.

**Comparison:** No intervention

Outcome № of participants (studies)	Relative effect (95% CI)	Anticipated absolute effects (95% CI)			Quality	What happens
		Without hygiene promotion programs	With hygiene promotion programs	Difference		
Mean number of days with ear ache (symptom) per person year at risk < 3years of age assessed with: parental report follow up: median 8 months № of participants: 661 (1 RCT) <sup>1,a</sup>	-	The mean number of days with ear ache (symptom) per person year at risk < 3years of age was <b>6.8</b> per person year	-	<b>MD 1.9 per person year fewer</b> (1.43 fewer to 2.3 fewer)	 LOW <sup>b,c</sup>	In children <3 years attending daycare centres with hygiene promotion programs compared to no intervention there are possibly fewer days with ear ache per person year at risk.  NNT not evaluable
Mean number of days with ear ache (symptom) per person year at risk > 3 years of age assessed with: parental report follow up: median 8 months № of participants: 861 (1 RCT) <sup>1,a</sup>	-	The mean number of days with ear ache (symptom) per person year at risk > 3 years of age was <b>2</b> per person year	-	<b>MD 0.6 per person year fewer</b> (0.5 fewer to 0.9 fewer)	 LOW <sup>b,c</sup>	In children >3 years attending daycare centres with hygiene promotion programs compared to no intervention there are possibly fewer days with ear ache per person year at risk.  NNT not evaluable

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**Comparison:** No intervention

Outcome № of participants (studies)	Relative effect (95% CI)	Anticipated absolute effects (95% CI)			Quality	What happens
		Without hygiene promotion programs	With hygiene promotion programs	Difference		
Mean number of days with ear ache (infectious episode separated by at least 3 symptom free days) per person year at risk <3 years of age assessed with: parental report follow up: median 8 months № of participants: 661 (1 RCT) <sup>1,a</sup>	-	The mean number of days with ear ache (infectious episode separated by at least 3 symptom free days) per person year at risk <3 years of age was 2 per person year	-	MD <b>0.4 per person year fewer</b> (0.2 fewer to 0.7 fewer)	 LOW <sup>b,c</sup>	In children <3 years attending daycare centres with hygiene promotion programs compared to no intervention there are possibly less infectious episodes characterised by ear ache per person year at risk.  NNT not evaluable
Mean number of days with ear ache (infectious episode separated by at least 3 symptom free days) per person year at risk >3 years of age assessed with: parental report follow up: median 8 months № of participants: 861 (1 RCT) <sup>1,a</sup>	-	The mean number of days with ear ache (infectious episode separated by at least 3 symptom free days) per person year at risk >3 years of age was 0.7 per person year	-	MD <b>0.1 per person year fewer</b> (0.02 fewer to 0.29 fewer)	 LOW <sup>b,c</sup>	In children >3 years attending daycare centres with hygiene promotion programs compared to no intervention there are possibly less infectious episodes characterised by ear ache per person year at risk.  NNT not evaluable

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**Comparison:** No intervention

Outcome № of participants (studies)	Relative effect (95% CI)	Anticipated absolute effects (95% CI)			Quality	What happens
		Without hygiene promotion programs	With hygiene promotion programs	Difference		
Mean number of visits to a doctor because of an attack of acute otitis media (all ages) assessed with: parental report follow up: median 8 months № of participants: 1522 (1 RCT) <sup>1,a</sup>	-	The mean number of visits to a doctor because of an attack of acute otitis media (all ages) was 1.5 visits/child/year	-	MD 0.4 visits/child/year fewer	 LOW <sup>c,d</sup>	In children attending daycare centres with hygiene promotion programs compared to no intervention there are possibly fewer doctor visits for AOM.

\*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; RR: Risk ratio; NS: Not significant; NNT: Number needed to treat; NNH: Number needed to harm; MD: Mean difference

#### GRADE Working Group grades of evidence

**High quality:** We are very confident that the true effect lies close to that of the estimate of the effect

**Moderate quality:** We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

**Low quality:** Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

**Very low quality:** We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

## Explanations

a. Study: Uhari 1999

b. Risk of Bias: Noted that open label, however complete blinding difficult in study circumstances. Not rated down.

c. Indirectness: Otitis media not primary outcome. Only children in daycare centres studied. Ear ache used as a surrogate for middle ear disease.

d. Indirectness: Diagnostic criteria for otitis media not standardised (by parental report).

## References

1. Uhari M, Mottonen M. An open randomized controlled trial of infection prevention in child day-care centers. The Pediatric infectious disease journal. 1999;18(8):672-7. Epub 1999/08/26. PubMed PMID: 10462334.