### Summary of findings:

#### 15. Autoinflation devices compared to watchful waiting for otitis media with effusion

**Patient or population:** Children aged 3 to 11 years with otitis media with effusion

**Setting:** Primary health care and Hospital

**Intervention:** Autoinflation devices (Otovent®, carnival blower + balloon and Politzer devices) for a duration of 1 week to 3 months (ranged across studies)

**Comparison:** Watchful waiting

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Relative effect (95% CI)</th>
<th>Anticipated absolute effects (95% CI)</th>
<th>Certainty</th>
<th>What happens</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hearing - average improvement &gt;= 10 dB</strong> assessed with: pure-tone audiogram (250 Hz to 2000 Hz) follow up: range 3 weeks to 3 months N of participants: 125 (2 RCTs) 7a</td>
<td>Relative Risk 0.80 (0.22 to 2.88)</td>
<td>27.0% ¹ 21.6% (5.9 to 77.8) 5.4% fewer (NS) (21.1 fewer to 50.8 more)</td>
<td>◐◯◯ LOW ³ ⁴</td>
<td>In children with OME who have autoinflation therapy compared to watchful waiting there is insufficient evidence to show a difference of &gt;10dB in hearing during 3 weeks to 3 months follow-up. NNT Not Applicable</td>
</tr>
<tr>
<td><strong>Pure-tone threshold assessed with:</strong> pure-tone audiogram (250 Hz to 2000 Hz) follow up: median 7 weeks N of participants: 179 (2 RCTs) 7a</td>
<td>-</td>
<td>- MD 7.02 higher (NS) (6.92 lower to 20.96 higher)</td>
<td>◐◯◯ LOW ³ ⁴</td>
<td>In children with OME who have autoinflation therapy compared to watchful waiting there is insufficient evidence to show a difference in hearing at 7 weeks follow-up. NNT Not Applicable</td>
</tr>
<tr>
<td><strong>Tympanogram improvement - B to C1/A assessed with:</strong> tympanometry follow up: median 1 months N of participants: 508 (4 RCTs) 1,2,1</td>
<td>Relative risk 1.72 (1.23 to 2.40)</td>
<td>35.6% ¹ 61.2% (43.8 to 85.5) 25.6% more (8.2 more to 49.8 more)</td>
<td>◐◯◯ LOW ³ ⁴</td>
<td>In children with OME who have autoinflation therapy compared to watchful waiting there is possibly tympanogram improvement at up to 1 month follow-up. NNT ~4</td>
</tr>
<tr>
<td><strong>Tympanogram improvement - B/C2 to C1/A assessed with:</strong> tympanometry follow up: median 1 months N of participants: 588 (6 RCTs) 1,2,1</td>
<td>Relative risk 1.48 (0.88 to 2.48)</td>
<td>35.6% ¹ 52.7% (31.3 to 88.3) 17.1% more (NS) (4.3 fewer to 52.7 more)</td>
<td>◐◯◯ LOW ³ ⁴</td>
<td>In children with OME who have autoinflation therapy compared to watchful waiting there is possibly no tympanogram improvement &lt;1 month follow-up. NNT Not Applicable</td>
</tr>
</tbody>
</table>
Summary of findings:

**15. Autoinflation devices compared to watchful waiting for otitis media with effusion**

**Patient or population:** Children aged 3 to 11 years with otitis media with effusion

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**Intervention:** Autoinflation devices (Otovent®, carnival blower + balloon and Politzer devices) for a duration of 1 week to 3 months (ranged across studies)

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<tr>
<th>Outcome</th>
<th>No of participants (studies)</th>
<th>Relative effect (95% CI)</th>
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<tr>
<td>Tymanogram improvement - B/C2 to C1/A follow up: range 1 to 3 months Ne of participants: 530 (5 RCTs)</td>
<td>Relative Risk 1.27 (1.07 to 1.49)</td>
<td>38.3% 48.7% (41.0 to 57.1) 10.4% more (2.7 more to 18.8 more)</td>
<td>LOW ⚫⚫</td>
<td>In children with OME who have autoinflation therapy compared to watchful waiting there is possibly tympanogram improvement at 1-3 months follow-up. NNT ~10</td>
<td></td>
</tr>
<tr>
<td>Adverse effects - Nosebleeds and Ear Pain assessed with: parental report follow up: median 3 months Ne of participants: 320 (1 RCT)</td>
<td>RR 0.90 (0.55 to 1.45)</td>
<td>16.3% 14.6% (8.9 to 23.6) 1.5% fewer (NS) (7.3 fewer to 7.3 more)</td>
<td>LOW ⚫⚫</td>
<td>In children with OME who have autoinflation therapy compared to watchful waiting there are possibly no more adverse events (nosebleeds or ear pain) at 3 months follow-up. NNT Not Applicable</td>
<td></td>
</tr>
<tr>
<td>Disease specific quality of life assessed with: standardised change in OMQ-14 score follow up: mean 3 months Ne of participants: 247 (1 RCT)</td>
<td>-</td>
<td>-</td>
<td>SMD 0.42 SD lower (0.63 lower to 0.22 lower)</td>
<td>LOW ⚫</td>
<td>In children with OME who have autoinflation therapy compared to watchful waiting there is possibly lower OMQ-14 score indicating better QOL at 3 months follow-up. NNT Not quantifiable</td>
</tr>
</tbody>
</table>

*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; MD: Mean difference; RR: Risk ratio; SMD: Standardised mean difference; NS: Not significant; NNT: Number needed to treat; NNH: Number needed to harm

**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**

- b. Raw data not available from Cochrane Review. Baseline risk taken from watchful waiting group in Brooker 1992
- d. Imprecision: Broad estimate of effect. Includes benefit and harm.
- h. Imprecision: Optimal information size not reached. Broad estimate of effect.
j. Raw data not available from Cochrane Review. Baseline risk taken from watchful waiting group in Williamson 2015
k. Indirectness: Tympanostomy is a surrogate for functional hearing. Not rated down.
n. Study: Williamson 2015
o. Risk of Bias: Lack of participant blinding. Otitis and nosebleed reported anecdotally.
q. Lower score denotes better QOL.
r. Risk of Bias: Lack of participant blinding.

References