# Comparison of Efficiency and Compliance of Old and New Devices for Autoinflation in Children

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## Introduction

Autoinflation is a technique whereby the Eustachian tube is opened for middle ear ventilation by raising of the upper airway pressure. Compliance and efficiency have been the major problems for autoinflation in young children. The objective of the present study was to compare the compliance and efficacy of the Otovent® compared to the Moniri® device for autoinflation.

## Material & Methods

112 children, aged 2-5 years were recruited at a nursery school. The number of children in the Otovent®, Moniri® and the control groups were 37, 37 and 38 respectively. Tympanometry and otoscopy were performed at inclusion and after approximately 1 minute of autoinflation. The same balloon opening pressure (60 cmH2O) was used in both devices. Successful middle ear ventilation was defined as an alteration ≥ 50 daPa from the baseline pressure.


**Fig. 1** *(Left) The Moniri ® Device*
**Fig. 2** ***(Right)*** *The Otovent® Device*

*Video*

## Results

Baseline tympanometry indicated middle ear effusion in 24 ears (32%) in the Otovent® compared to 28 ears (38%) (p=0.41) in the Moniri® group. After instructions, 19 children (51%) were willing to use Otovent® whereby two (5%) managed to inflate the balloon, compared to 33 (89%) and 32 (86%) (p<0.01) in the Moniri® group. Successful middle ear ventilation was achieved in ten ears (14%) in the Otovent® group compared to 54 ears (73%) (p<0.01) in the Moniri® group. No significant alteration was observed in the control group.

| | Otovent | Moniri |
|---|---|---|
| Total | 37 | 37 |
| Baseline Effusion | 24(32) | 28(38) |
| Voluntary Use | 19(51) | 33(89)* |
| Inflation of Balloon | 2 (5) | 32(86)* |
| Middle Ear ventilation | 10 (14) | 54(73)* |

**Table** Comparison of the groups. The numbers within the paranthesis represent %, *= p<0.01.

## Conclusions

As previously acknowledged the Otovent® device has limited compliance and efficiency for autoinflation in young children. The Moniri® device represents an attractive alternative with satisfactory compliance and efficiency.

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