iHeart Sleep

PARTNER BRIEF
NOVEMBER 2026

Intraoral PEEP valve-enhanced mandibular stabilisation

Oral appliances that combine mandibular advancement with expiratory positive airway pressure, driven by the patient's own breathing. Built for patients who struggle with CPAP. iHeart Sleep Research is looking for manufacturing, clinical and referral partners to take the technology further.

THE TECHNOLOGY

PEEP Guard™

ORAL APPLIANCE

Custom 3D-printed nylon appliance combining mandibular advancement with an integrated air channel and positive end-expiratory pressure (PEEP) valve.

PEEP Shield™

INTRAORAL EPAP VALVE

Australian-made intraoral EPAP valve, supplied ready to fit, so appliance makers can add oral EPAP without new production capability.

CLINICAL EVIDENCE AT A GLANCE

2,939
Patients across four prospective studies[1–4]

61%
Mean AHI reduction at five years, n = 2,874[1]

84%
Responders (≥50% AHI reduction) in severe OSA[2]

53%
Further AHI reduction when oral EPAP is added to MAS[5]

Full data, charts and references on page 2.

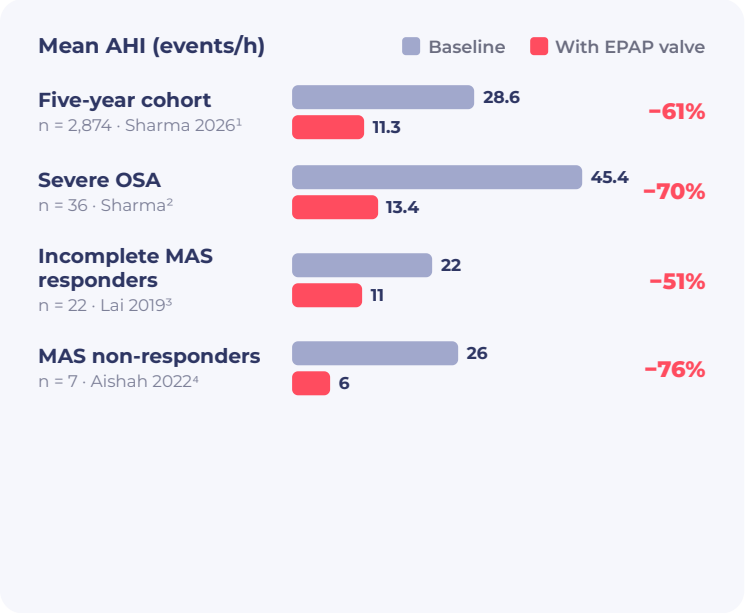
MECHANISM STUDIES

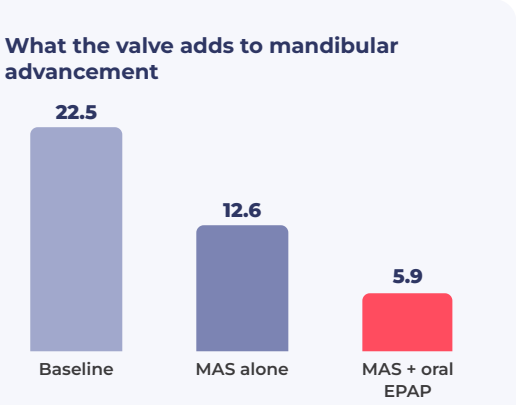
Randomised studies have examined the integrated air channel and the effect of nasal resistance on oral appliance efficacy,[6] and the effect of combined oral appliance and positive pressure therapy on pressure requirements and upper airway mechanics.[7] All efficacy studies on page 2 used an oral EPAP valve of 7 cmH_2O at 5 L/min.

THE INVENTOR

Dr Chris Hart, BDSc (Hons) MPhil (Cantab), invented the oral EPAP concept and founded Oventus Medical. He has more than 25 years' experience in dentistry and airway management, has led over a decade of oral EPAP research and development, and has presented at major dental and sleep meetings worldwide. He now runs iHeart Sleep's clinical services in Australia and the US.

CLINICAL EVIDENCE · EPAP-ENHANCED ORAL APPLIANCE THERAPY





−53% further AHI reduction with oral EPAP added (prospective multicentre).[5]

−33% residual AHI on MAS, median 15 → 10/h with oral EPAP and 7/h with oral plus nasal EPAP (randomised, n = 22).[3]

STUDY SUMMARY

STUDY	POPULATION	N	BASELINE AHI	WITH EPAP	RESULT
Sharma et al., AJRCCM 2026 (abstract)	Five-year multi-site cohort	2,874	28.6	11.3	**61% AHI reduction**
Sharma et al. (abstract B80-2-03)	Severe OSA, multi-site	36	45.4	13.4	**84% responders**
Sharma et al., Adv Bioeng Biomed Sci Res 2023	Multicentre; MAS alone 12.6, then MAS + oral EPAP	–	22.5	5.9	**53% further reduction vs MAS alone**
Lai, Eckert et al., Sleep 2019	Incomplete MAS responders, randomised crossover	22	22	11	**55% became responders; residual AHI 15 → 10/h with oral EPAP**
Aishah, Eckert et al., Sleep Adv 2022	MAS non-responders	7	26	6	**71% AHI <10/h**

REFERENCES

1. Sharma S, Reiter H, Abraham G, Sharma A, Garg H. Five year efficacy data for novel EPAP enhanced oral appliance to treat OSA. Am J Respir Crit Care Med 2026;212(Suppl 1). Abstract.
2. Sharma S, Reiter H, Abraham G, Sharma A, Garg H. Efficacy of EPAP enhanced oral appliance therapy in severe obstructive sleep apnea (OSA). Abstract B80-2-03.
3. Lai V, Tong BK, Tran C, et al., Eckert DJ. Combination therapy with mandibular advancement and expiratory positive airway pressure valves reduces obstructive sleep apnea severity. Sleep 2019;42(8):zsz119. doi:10.1093/sleep/zsz119
4. Aishah A, Osman A, Tong B, Pitcher G, Eckert D, Mukherjee S. Addition of an oral expiratory positive pressure valve (EPAP) to an oral appliance therapy device can resolve OSA. Sleep Adv 2022;3(Suppl 1):A32–A33.
5. Sharma S, et al. Adv Bioeng Biomed Sci Res 2023;6(12):131–137. doi:10.33140/abbsr.06.12.01
6. Tong BK, et al. J Clin Sleep Med 2020;16(4):483–492. doi:10.5664/jcsm.8244
7. Tong BK, et al. J Appl Physiol 2020;129(5):1085–1091. doi:10.1152/japplphysiol.00393.2020

AHI: apnoea–hypopnoea index. MAS: mandibular advancement splint. Responder: ≥50% AHI reduction from baseline unless stated.

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WAYS TO PARTNER

1. Sleep physicians, GPs and CPAP providers

CLINICAL REFERRAL

Refer patients who can't tolerate or won't persist with CPAP. Patients are seen online Australia-wide with a home impression kit, or in person at our Mermaid Beach and Tweed Heads clinics, and we report back to the referrer.

2. Dental and medical groups

CLINICAL PARTNER PROGRAMME

Offer PEEP Guard™ to your patients with minimal dentist time. The service runs through the hygiene chair, and iHeart Sleep handles the initial telehealth consultation and manages each patient from assessment to review.

3. Appliance manufacturers and dental laboratories

LICENSED MANUFACTURING AND VALVE SUPPLY

We license the oral EPAP technology for manufacture in your appliances and supply the PEEP Shield™ valve as a finished component. Your existing digital workflow designs the appliance to take the valve. We provide clinical training and technical support. The nylon device is already being made and supplied in Australia, so the workflow is proven.

REGULATORY AND MANUFACTURING

Australia

PEEP Guard is supplied in Australia under the TGA personalised medical device framework. The PEEP Shield technical file and quality system are prepared for TGA Class I inclusion.

United States

Technical files and an FDA predicate pathway are in place for the nylon device, giving a route to the US market.

Manufacturing

The nylon appliance is 3D printed and the valve is manufactured in Australia.

Intellectual property

Trade mark applications for PEEP Guard™ and PEEP Shield™ are lodged. IP and technical documentation are available under NDA.

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PEEP Guard™ and PEEP Shield™ are trade marks of iHeart Sleep Research (applications pending).