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SFORL Guidelines

Hypoglossal nerve stimulation in the treatment of obstructive sleep apnea: Update on French practices and position paper of the SFRMS, SPLF and SFORL sleep medicine work-group

J. Frija [a b 1], E. Béquignon [c d e 1], L. Laccourreye [f], I. Atallah [g], F. Gagnadoux [h 2], R. Tamisier [i j 2]

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Abstract

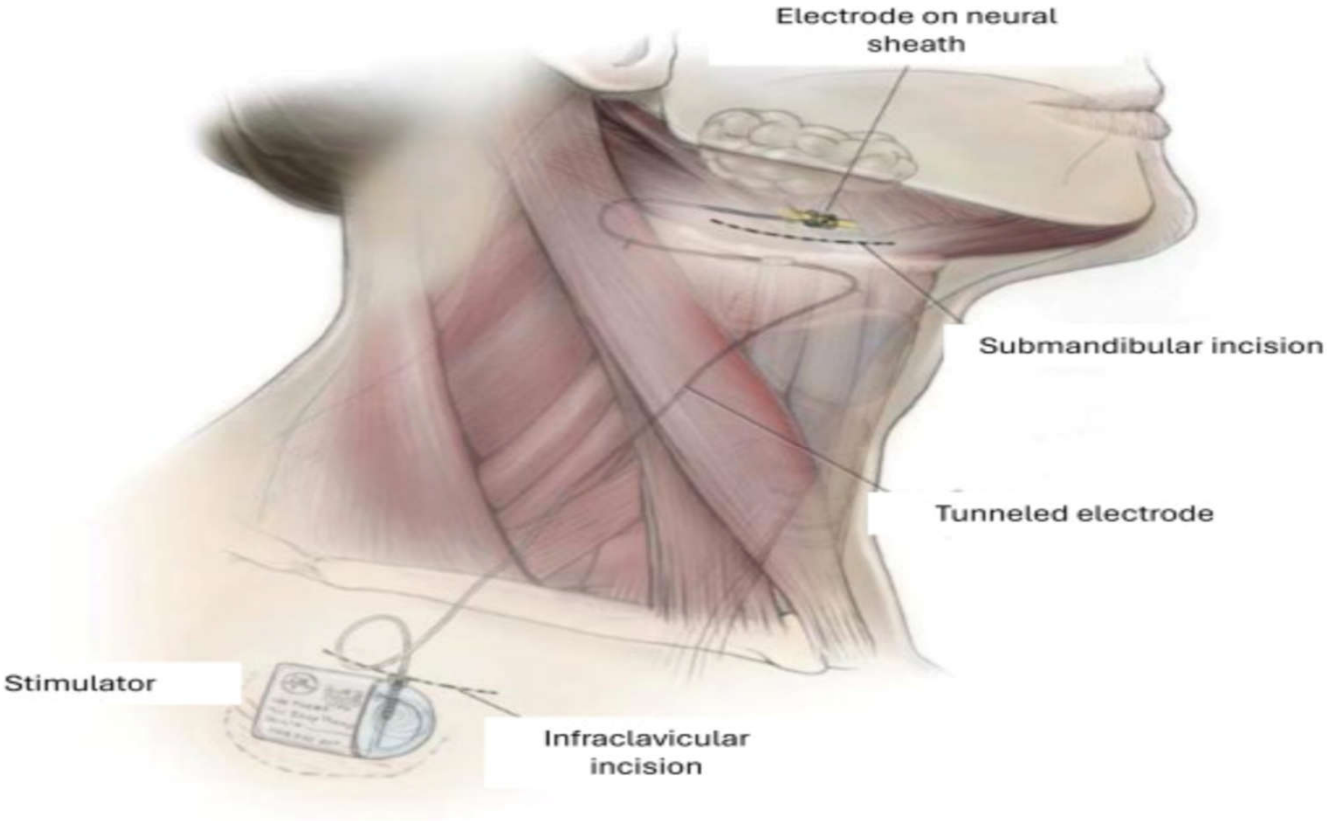
Objectives

To update practices for setting up, follow-up and indications in hypoglossal nerve stimulation in France.

Methods

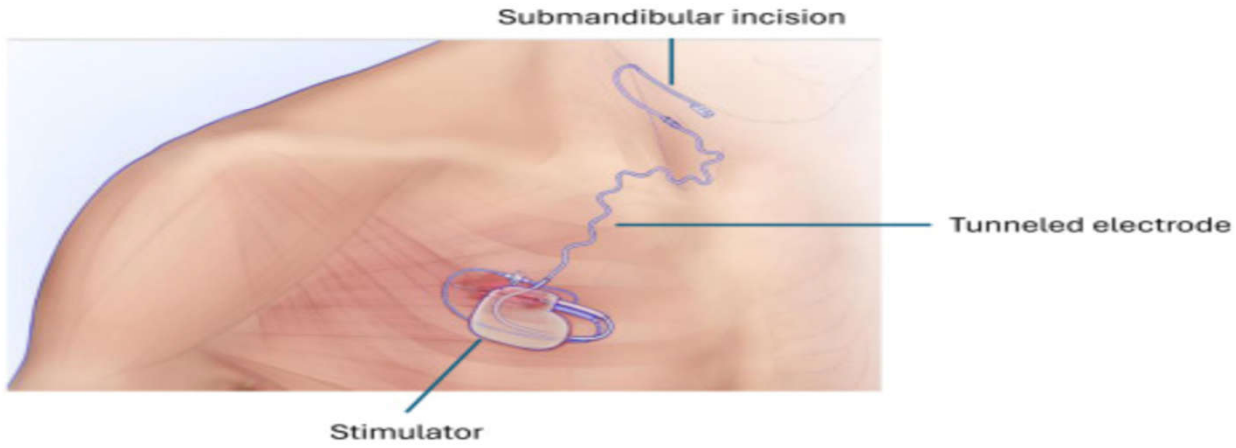
5.1. LivaNova

The Aura6000 device (LivaNova, Inc., formerly ImThera Medical) is based on continuous hypoglossal nerve stimulation, which requires no respiratory sensor. It comprises two implanted components: an 11.5 cm^3 impulse generator, and a probe with 6 independent electrodes in a silicone sleeve; the remote control is external (Fig. 3).



4. The Inspire Medical device

Selective hypoglossal nerve stimulation controlled by respiration using the device produced by Inspire Medical Systems, Inc. (Fig. 2) is available in France. The respiratory signal is detected by an intercostal pressure sensor and transmitted to the pulse generator in a “closed-loop” approach. The generator, in response to the respiratory cycle on the inbreath, sends a pulse to the distal protraction fibers of the hypoglossal nerve, activating genioglossal muscle contraction and protraction of the tongue, thus preventing airway closure. In October 2010, the system received CE marking and obtained FDA approval in America in 2014 and PMDA approval in Japan in June 2018. In March 2022, the French Health Authority approved national health insurance cover in case of failure of CPAP and MAD in adults with AHI between 15 and 50/h and BMI < 32 kg/m^2.



Artificial Intelligence in Snoring Sound Analysis: OSA Detection and Obstruction Site Classification, a Systematic Review.

Francesco Carlo Tartaglia, Gian Marco Pace, Francesco Giombi, Giorgia Nava, Annagiulia Motisi, Niccolo Maffoni, Stefano Mancin, Nicolò Berdin, Giulio Sandri, Luca Cerri, Egidio Serra, Giuseppe Mercante, Giuseppe Spriano, Luca Malvezzi, Alberto Paderno

Otolaryngology - Head and Neck Surgery 2026 January 12

OBJECTIVE: The aim of the systematic review is to evaluate the application of machine learning (ML) and artificial intelligence (AI) models in the analysis of snoring sounds for the detection of obstructive sleep apnea (OSA) and the classification of obstruction sites based on the Velum, Oropharynx, Tongue, and Epiglottis (VOTE) system.

DATA SOURCES: We conducted a comprehensive literature search in PubMed, Scopus, Ovid, Cochrane, and Web of Science databases from 2011 to November 30, 2024. The search included terms related to snoring, machine learning, artificial intelligence, and acoustic analysis.

REVIEW METHODS: The review was structured using the PICO framework and adhered to Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) 2020 guidelines. A total of 591 records were identified, and 42 studies were included after screening and full-text review. Methodological quality was assessed using the Prediction model Risk Of Bias

REVIEW METHODS: The review was structured using the PICO framework and adhered to Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) 2020 guidelines. A total of 591 records were identified, and 42 studies were included after screening and full-text review. Methodological quality was assessed using the Prediction model Risk Of Bias Assessment Tool (PROBAST) tool, and data extraction focused on ML models, data sets, feature extraction methods, and performance metrics.

RESULTS: ML models such as support vector machine (SVMs), convolutional neural networks (CNNs), and hybrid deep learning architectures achieved high accuracy (up to 98.6%) in snore classification and OSA detection. Key features included mel-frequency cepstral coefficients (MFCCs), wavelet transforms, and deep spectral representations. Several studies attempted VOTE classification, reporting unweighted average recalls (UARs) of 49% to 75% with baseline pipelines, and up to 87.5% to 94.7% UAR or 92.2 to 95.5% accuracy when using targeted features with SVM or k-nearest neighbor (kNN). Challenges included limited external validation, data set imbalance, and noise interference.

CONCLUSION: AI-driven snore analysis holds potential for noninvasive OSA screening and anatomical site classification. Future work should focus on multimodal data integration, real-world validation, and model generalizability to support clinical translation.

AI model detects prediabetes using ECG data without need for blood tests

by Institute of Science Tokyo

edited by Sadie Harley, reviewed by Robert Egan

Editors' notes

The GIST

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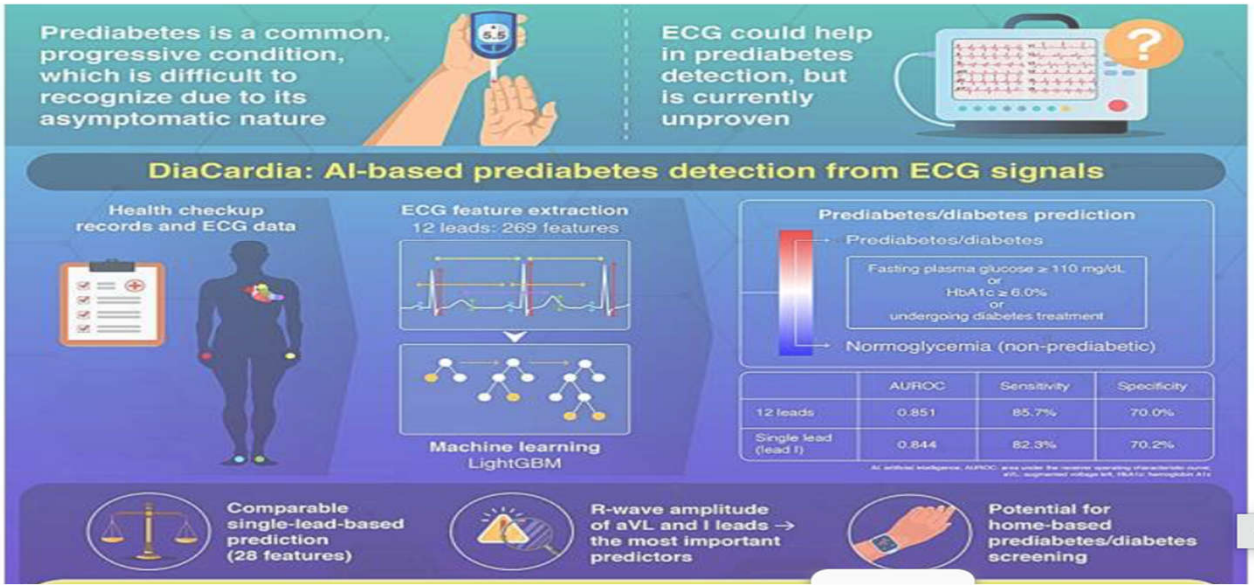

Credit: Institute

the physiological plausibility of DiaCardia's predictions.

The researchers also conducted an additional analysis in which participants were matched to account for six major confounding factors. DiaCardia still showed substantial predictive power, indicating that the model captures ECG features specific to impaired blood glucose regulation.

Importantly, even when using single-lead (lead I) ECG data with only 28 features, the model demonstrated comparable performance, nearly matching the performance obtained using 12-lead data. This is a key breakthrough that could open new possibilities for home-based prediabetes screening using wrist-worn wearable devices.

"DiaCardia has the potential to make prediabetes screening scalable, accessible, and available anytime, anywhere, without a blood test," concludes Komiya. "By promoting widespread screening of prediabetes, this work will ultimately contribute to the prevention of diabetes."

Balloon Dilation With Tympanostomy Enhances Outcomes in Adult Chronic Otitis Media With Effusion.

Mingxuan Wu, Mengdi Zhang, Yan Chen, Yufei Wang, Wenquan Li, Wenyan Li

Laryngoscope 2026 January 21

OBJECTIVES: This study aimed to comparatively evaluate the therapeutic efficacy of balloon dilation eustachian tuboplasty (BDET) versus tympanostomy tube insertion (TTI) in adult patients with unilateral chronic otitis media with effusion (COME), and to assess potential synergistic effects when combining both procedures (BDET+TTI).

METHODS: We conducted a retrospective cohort study of 46 adult COME patients from the Eye and ENT Hospital of Fudan University who had failed a standardized 3-month non-surgical interventions and underwent one of three interventions: (1) TTI alone, (2) BDET+TTI, or (3) BDET alone. Preoperative evaluations included otoscopy, pure-tone audiometry (PTA), tympanometry, nasopharyngeal endoscopy, eustachian Tube Dysfunction Questionnaire (ETDQ-7), and temporal bone CT scans. Postoperative evaluation incorporated PTA, tympanometry, and ETDQ-7 assessment. Statistical analysis incorporated both within-group (pre-post) and between-group comparisons of therapeutic outcomes.

RESULTS: All interventions demonstrated therapeutic safety with no postoperative complications. While all groups showed hearing improvement, the BDET group failed to achieve statistically significant improvement in air conduction (AC) thresholds. The BDET+TTI combination yielded superior outcomes to TTI alone in AC thresholds, air-bone gap (ABG), and ETDQ-7 scores

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RESULTS: All interventions demonstrated therapeutic safety with no postoperative complications. While all groups showed hearing improvement, the BDET group failed to achieve statistically significant improvement in air conduction (AC) thresholds. The BDET+TTI combination yielded superior outcomes to TTI alone in AC thresholds, air-bone gap (ABG), and ETDQ-7 scores improvements. Tympanometric normalization was significant in both TTI-containing groups but not in the BDET-alone group.

CONCLUSIONS: While BDET monotherapy shows limited efficacy in adult COME management, its combination with TTI produces superior therapeutic outcomes compared to either procedure alone. These results position BDET as a potentially valuable adjunct to conventional TTI rather than an independent treatment modality for this patient population.

Fractional Exhaled Nitric Oxide for Diagnosing Eosinophilic Chronic Rhinosinusitis: A Systematic Review and Meta-analysis.

Jae Yoon Lee, Manal Al Ali, Soo Whan Kim, Sung Won Kim

Otolaryngology - Head and Neck Surgery 2026 January 12

OBJECTIVE: The current gold standard for diagnosing eosinophilic chronic rhinosinusitis (ECRS) is tissue biopsy, but due to its invasive nature, there is a need for clinical diagnosis in outpatient settings or presurgical evaluations.

DATA SOURCES: PubMed, Embase, Cochrane Central Register of Controlled Trials, Web of Science, and Scopus up to July 2024.

REVIEW METHODS: Compared the fractional exhaled nitric oxide (FeNO) levels between ECRS and non-ECRS patients. The risk of bias across studies was evaluated utilizing the ROBINS-I tool.

RESULTS: Twelve studies comprising 1159 participants were included. The pooled mean difference in FeNO levels between ECRS and non-ECRS patients was 32.21 ppb (95% CI: [19.36, 45.06], P<.001). The diagnostic odds ratio for FeNO in identifying ECRS was 8.78 (95% CI: [5.70, 13.51], P<.001).

CONCLUSION: FeNO levels are significantly elevated in ECRS patients compared to non-ECRS patients. The high diagnostic odds ratio suggests that FeNO has potential as a noninvasive diagnostic tool for ECRS.