

# EpiTrack

<https://eisai-epitrack.com/>

EpiTrack® and EpiTrack® Junior are short and repeatable [neuropsychological screening tests](#) for the assessment and monitoring of cognition along with [antiepileptic treatment](#) in [epilepsy](#) patients.

A study involved 33 [drug-resistant epilepsy](#) (DRE) patients who were assessed with EpiTrack as a part of the clinical vagus nerve stimulation (VNS) protocol. Evaluations were scheduled prior to VNS implantation and then at 6 months, 12 months, and yearly thereafter. However, the [COVID-19 pandemic](#) disrupted follow-up. Therefore, changes in EpiTrack total scores over time were analyzed using a linear mixed-effects (LME) model to compensate for the variation in follow-up duration when predicting EpiTrack total score changes over five years.

The median follow-up time was 29 months. During each month, the EpiTrack total score was predicted to increase by 0.07 units (95% confidence interval (CI): 0.01 to 0.12,  $p = 0.02$ ), corresponding to a change from a baseline score of 27.3 (severe impairment) to a score of 28.9 (mild impairment) at two years and to a score of 31.5 (almost normal) at five years. In the group of patients with psychiatric comorbidities, the EpiTrack total score increased by 0.14 units per month ( $p = 0.003$ ), which was 3.5-fold higher than the increase of patients without psychiatric comorbidities. For the patients taking 1-2 antiseizure medications (ASMs), the EpiTrack total score increased by 0.11 units per month ( $p = 0.005$ ), which was almost quadruple the rate of patients taking 3-4 ASMs.

Based on EpiTrack total scores, the LME model predicted a four-point improvement in [executive functions](#) among DRE patients five years after the initiation of VNS, representing a clinically meaningful change. DRE patients with comorbid depression seemed to experience the most cognitive benefits. Additionally, better cognitive outcomes were achieved if the patient took less than three ASMs <sup>1)</sup>.

<sup>1)</sup>

Lähde N, Basnyat P, Raitanen J, Lehtimäki K, Rosti-Otajärvi E, Peltola J. Longitudinal EpiTrack assessment of [executive functions](#) following vagus nerve stimulation therapy in patients with drug-resistant epilepsy. *Epilepsia Open*. 2023 Oct 27. doi: 10.1002/epi4.12855. Epub ahead of print. PMID: 37897151.

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