

Machine learning-driven system of grading trigeminal neuralgia and prediction of surgical outcome



Timur H. Latypov^{1,2}, Rose Yakubov^{1,3}, Daniel Jörgens¹, Pascale Tsai^{1,2}, Peter Shih-Ping Hung², Wanzhang Wang¹, Matthew R. Walker¹, Patcharaporn Srisaikaew¹, Marina Tawfik^{4,5}, Frank Rudzicz^{4,5}, Mojgan Hodaie^{1,2}



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¹ Krembil Research Institute, University Health Network

² Institute of Medical Science, University of Toronto

³ Faculty of Health Sciences, McMaster University

⁴ Computer Science, University of Toronto

⁵ Vector Institute for Artificial Intelligence

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A novel perspective on trigeminal neuralgia progression

- Patients with trigeminal neuralgia (TN) typically experience shock-like episodes of pain.^{1,2}
- With time, the character of their pain may modify in frequency and quality, with eventual development of burning or dull overtones.^{3,4,5}
- Previously several subtypes of TN have been described (TN type 1, TN type 2).^{1,2}

Hypothesis: TN is a syndrome with a spectrum of grades, each with different brain imaging correlates, pain characteristics and surgical outcomes.

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4. K. J. Burchiel, K. V. Slavin, *Neurosurgery*. 46, 152-155 (2000).
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Objective: We propose a novel machine learning (ML)-driven grading system for TN based on brain imaging and clinical data. We then use this system to estimate the likelihood of long-term pain relief.

