Can we use brain connectivity to improve individual patient DBS outcomes?

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Résumé

The subthalamic nucleus (STN) is a major deep brain stimulation (DBS) target for treating movement disorders in Parkinson's disease. The STN receives direct cortical inputs via the so-called hyperdirect pathway. Although long-suspected to play a role in the positive effects of DBS, it remains unclear whether knowledge of structural connectivity in individual patients can be used to improve DBS outcomes. I will talk about our recent work using whole-brain probabilistic tractography to map the hyperdirect pathway in indivdual patients, and how differences in connectivity are linked to stimulation outcomes measured during repeated testing during surgery.

Mots-Clés: Imaging, Parkinson's Disease, DBS

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