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Borbála Nóra Jávor-Duray was born on the 10th October 1984 in Budapest, Hungary. After completing her pre-university education in 2003 at the Városmajori Gimnázium in Budapest (Hungary) she started her medical studies at the Semmelweis University (Budapest). During her training, driven by scientific interest she got involved in diverse research projects. In the Institute of Human Physiology and Clinical Experimental Research she joined the research project examining the intercellular calcium homeostasis in cardiac dysfunction in a type II diabetic rat model under supervision of Dr. Ligeti, Dr. Ivanics and Dr. Miklós. To complement her research experience with more clinical topics, she participated in research at the video-EEG monitoring laboratory of Bethesda Children's Hospital of Hungarian Reformed Church (Budapest). Here, with the guidance of Dr. Fogarasi and Dr. Siegler she developed a quality of life questionnaire for children who previously underwent surgical treatment of epilepsy. With the research report entitled “The outcome and quality of life after epilepsy surgery in children in Hungary” she got awarded first prize in the "Donáth Gyula competition" of the Hungarian League Against Epilepsy. During the years of study at the university, she took several opportunities to broaden her knowledge abroad: international internships in Amsterdam (The Netherlands) and Białystok (Poland) and a six month long Erasmus scholarship in Tours (France).

She completed her medical studies in 2010 and moved to Amsterdam to start working on her PhD research. She got enrolled in an Erasmus Mundus Joined PhD project within the European Neuroscience Campus network that enabled her to collaborate with scientists from Bordeaux University. The results of this collaborative translational research project, aiming to explore neurophysiological changes related to Parkinson’s disease in the preclinical model and link them to patient data, are presented in this thesis.