Update From the Research Team

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Our goal at the University of Minnesota is to understand the altered brain signals as they relate to specific movement disorders and to develop treatment regimens that are specifically tailored to each patient, particularly related to deep brain stimulation (DBS). The generous funding donated by The Kurt B. Seydow Dystonia Foundation will be used to push forward research efforts and to educate the community about this disorder. Specifically, the money will be used to obtain recordings of deep brain structure activity and associated muscle activity and movements, which will be recorded during DBS electrode implant surgery. The support will also be used for obtaining high-resolution MRI images of the electrode that has been implanted within the brain. We will take advantage of our vast expertise in neurophysiological brain mapping techniques (i.e. interpreting brain signals) and our access to a state-of-the-art, exclusive high-resolution 7T MRI scanner to try to elucidate the brain signals that are potentially leading to dystonic muscle activity. These high-resolution images will allow us to see what parts of the brain are being activated by the deep brain stimulation electrode and ultimately determine what changes are taking place in the brain activity that result in improved symptoms due to DBS. This will provide us further clues as to what brain activity may be the cause for developing dystonic symptoms. This initial data will in turn be used to apply for a federal grant through the National Institute of Health (NIH) to complete a large-scale study.

The donation will also be used to provide outreach support to those in the community and associated support groups, particularly in rural populations, to provide education on dystonia such as our current state of knowledge about the disorder, treatment options that are currently available such as the new DBS (multi-segmented) lead. We will share our cutting-edge research and treatment options as part of our new Udall center of excellence such as utilizing our high-resolution imaging technology accompanied by our world-class intraoperative physiology team for developing a strategy to perform DBS lead implant surgery while the patient is asleep for the entire procedure. Many of these efforts will lead toward a more comfortable surgical experience for the patient as the procedure is further improved and the patient is more educated about their available options for treatment. This is only a partial list of our efforts toward determining the underpinnings of dystonia. However, all of which are, in part, due to the generous donation from The Kurt B. Seydow Dystonia Foundation and we look forward to working together in our tireless effort for understanding dystonia and, most importantly, improving the lives of those living with dystonia.

Dr. Joshua Aman is a research scientist at the University of Minnesota School of Medicine Neuromodulation Research Center.