

# New treatment method looks to still tremors

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There is no cure for tremor. That means for patients who suffer from the ailment – characterized by involuntary muscle contractions and shaking – ordinary tasks become increasingly difficult. Buttoning shirts, cooking a meal and even going out in public proves difficult for tremor patients, some who are likewise dealing with Parkinson's disease or Multiple Sclerosis (MS).

But Schulich School of Medicine & Dentistry professor Mandar Jog, a neurologist at the London Health Sciences Centre (LHSC), is, along with his lab mates, working on helping tremor [patients](#) in an innovative way. What's more, his treatment is proving more successful than any other treatment to date.

This success was recently recognized by a \$50,000 initial grant from the Ontario Brain Institute and Ontario Centres of Excellence.

"What's unfortunate is that there is no real drug out there (to treat tremor)," said Jack Lee, who completed his MSc at Western in 2011 and joined Jog's lab in 2012 as a clinical research associate.

Lee explained Parkinson's patients could suffer from tremor, in addition to other symptoms of the ailment, adding MS patients could also be affected and a new diagnosis – Essential Tremor – has recently been established for individuals who have no underlying conditions but are affected by [tremors](#). It is not yet clear what causes the involuntary movements, he added, and causes range from neurological disorders to increased levels of stress.

"What doctors can do, they will (prescribe) anti-seizure medications, not designed for tremor; antidepressants, which decrease anxiety; tranquilizers; or Parkinson's medication," Lee said of the current treatment methods. "But the long-term use of these has a huge list of side effects, and sometimes, the side effects are worse than the benefit."

There is also a last-resort surgery option available, brain stimulation by way of electrodes, but it is risky and expensive, he added.

'With the existing drugs not being designed for tremor, for out of 100 patients, (treatment) might work for 40 of them. And the decrease of tremor is only 30 to 40 per cent."

With the technology and treatment method Jog's lab has developed, a success rate of 85 per cent has been observed in a study of 47 patients. For those who saw an improvement, tremor decreased as much as 70 per cent.

So, what is this novel technology and treatment?

With a patent still pending, Lee isn't able to disclose too many particulars, noting Jog's lab has developed a technology that helps doctors determine where the tremor is coming from. Once the doctor finds the tremor, he then administers BonT/A, a serotype of the botulinum toxin and a muscle relaxant.

The use of botulinum toxin in tremor treatment is not new, but is, for the first time, successful because of new technology, which helps doctors inject it in the site of the tremor.

Jog, together with his post-doctoral candidate Fariborz Rahimi, an electrical engineer, developed the novel technology in 2010 at the Movement Disorders Clinic at LHSC. The recent study, lasting eight

months, observed 50 patients, the bulk of which saw a drastic improvement after treatment. Because of this success, the study has been extended to two years.

To commercialize the treatment, Lee, who joined Jog's lab with a GEI Stiller Centre Scholarship for graduate students in both science and business, created a company within the lab, MDDT (Movement Disorders Diagnostic Technologies). He will collaborate with the Ontario Brain Institute and Ontario Centres of Excellence to spearhead efforts in getting health regulatory and industry partners on-board.

One patient in the study – a 35 year-old man – saw such success in [treatment](#) that he was able to stay in the workforce.

"If left untreated, tremor gets worse. It goes to both sides of your body until you can't do anything, brush your teeth, feed yourself, cook, clean. There's a reason you don't see (patients) in a public setting. Some shake very violently, and can't go out. Unfortunately, most end up depressed," Lee said.

"For us to see the results we were getting – we were very surprised. And we're happy it will help (the patients)."

Provided by University of Western Ontario

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