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Research group finds skating and hockey-related activity an effective therapy for patients with Parkinson's disease

A University of Lethbridge research group, led by Dr. Jon Doan (kinesiology & physical education), is taking a truly Canadian approach to developing symptom management strategies for people living with Parkinson's disease – using skating and hockey stickhandling skills as forms of therapy.

Their preliminary results are encouraging enough to embark upon a host of parallel activities, including a biomechanically detailed comparison between skating and walking and the development of a skating exercise intervention tailored to people living with Parkinson's disease.



“When we tested people living with PD, we found that they skated safely and skillfully, at significantly greater velocity than their walking and with significantly bigger arm swing,” says Doan. “Most interestingly, when these patients did some walking locomotion after an episode of skating, they also walked significantly faster than they did before the skating session.”

Doan and his group then added more hockey-related activity to their study, having people complete dynamic stickhandling tasks. They then compared fine motor and gross motor trials of subjects from before and after the tasks to track possible improvement. The discovered improvements in upper extremity motor performance following a period of exercise imply that sport-derived exercise programs may provide neurotherapeutic benefit to PD patients. Their findings have been presented at community patient-oriented events and international conferences, and were recently featured amongst the Hot Topics at the 3rd World Parkinson Congress in Montreal.

The study involves on-campus collaboration with Drs. Ian Wishaw (neuroscience), Lesley Brown (kinesiology & physical education), Claudia Steinke (health sciences) and Natalie de Bruin Nutley (kinesiology & physical education), and has been supported by the Emmy Droog Research Award and Alberta Innovates Health Solutions. A number of undergraduate students have also contributed to the research work that began after Doan and his colleagues saw a television spot with actor Michael J. Fox, who suffers from Parkinson's disease.

"He did an interview with Oprah Winfrey in 2009, during which he spent some time ice skating with Dr. Oz. He talked about how freeing he found the skating activity, so we decided to begin a pilot study to see if ice skating was safe and feasible amongst people living with PD, and to see how skating locomotion differed from walking locomotion," says Doan.

The group is currently seeking further funding to test the utility of skating as vigorous exercise neurotherapy amongst Canadians living with early, mild or moderate PD. Reebok has agreed in principle to be in-kind partners on a grant proposal, wherein they would customize some of their BOA recreational skates (by featuring a more manipulable closure system and an embedded motion tracking/movement and music feedback system) for study participants. Specifically, the study proposes a 16-week program combining prescribed skating exercises with personally selected music.

"We're particularly interested in the possible psychosocial benefits of exercise activity in an arena, which is the social epicentre of many Canadian communities, particularly for those patients who live in rural areas," says Doan. "If we can get PD patients to the rink for therapy, it puts them in the hub of their community with strong potential to surround them with active family and friends."

View this feature story and video for more: <https://www.uleth.ca/shine/jon>.

-- 30 --

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