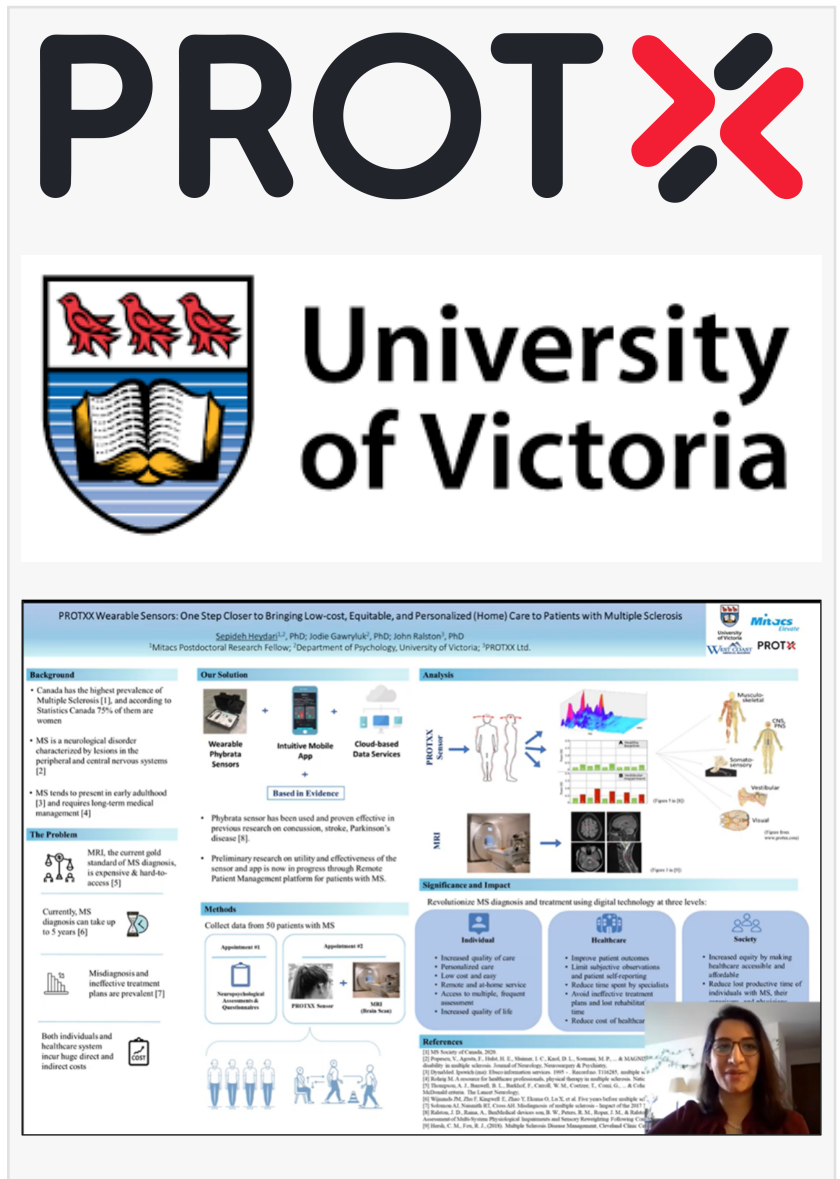


University of Victoria and PROTXX Collaborate to Investigate Phybrata Biomarkers for Multiple Sclerosis

MENLO PARK, CA, UNITED STATES, December 16, 2021 / EINPresswire.com/ -- Menlo Park, California based precision healthcare technology pioneer PROTXX today announced a new collaboration with clinical researchers at the University of Victoria in British Columbia, Canada, to explore the development of novel biomarkers to enhance the diagnosis and treatment of multiple sclerosis (MS). An overview of the study was presented in the [virtual poster event during Digital Health Week](#), November 29 - December 5, 2021. Digital Health Week showcases progress in harnessing digital technologies to make health care more accessible, convenient, and efficient. The 2021 virtual poster event was hosted by the Women's Health Research Institute and the BC Children's Hospital Research Institute, and the theme of the event was "How Can Digital Health Work for You?"

Canada has the highest prevalence of MS, and women have 2-3 times higher risk than men. MS tends to present in early adulthood and requires long-term medical management. Diagnosis relies on expensive and difficult to access MRI to detect/monitor lesion development in the brain. The PROTXX ["phybrata" sensor](#) offers an easier-to-use, low-cost, and much more widely accessible solution that could potentially revolutionize the diagnosis and monitoring of people with MS. The University of Victoria study will measure the relationship between digital biomarkers extracted from phybrata



PROTXX

University of Victoria

PROTXX Wearable Sensors: One Step Closer to Bringing Low-cost, Equitable, and Personalized (Home) Care to Patients with Multiple Sclerosis

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Background

- Canada has the highest prevalence of Multiple Sclerosis [1], and according to Statistics Canada 75% of them are women
- MS is a neurological disorder characterized by lesions in the peripheral and central nervous systems [1]
- MS tends to present in early adulthood [1] and requires long-term medical management [4]

The Problem

- MRI, the current gold standard of MS diagnosis, is expensive & hard-to-access [5]
- Currently, MS diagnosis can take up to 5 years [6]
- Misdiagnosis and ineffective treatment plans are prevalent [7]
- Both individuals and healthcare systems incur huge direct and indirect costs

Our Solution

Wearable Phybrata Sensors + Intuitive Mobile App + Cloud-based Data Services

Based in Evidence

- Phybrata sensor has been used and proven effective in previous research on concussion, stroke, Parkinson's disease [8]
- Preliminary research on utility and effectiveness of the sensor and app is now in progress through Remote Patient Management platform for patients with MS.

Methods

Collect data from 50 patients with MS

Appointment #1: Neurological Assessment & Questionnaire + PROTXX Sensor + MRI (Brain Scan)

Appointment #2: [Image of patient using sensor]

Analysis

PROTXX Sensor → Intuitive Mobile App → Cloud-based Data Services → Analysis (Graphs, Charts, and Human Models)

Significance and Impact

Revolutionize MS diagnosis and treatment using digital technology at three levels:

- Individual:**
 - Increased quality of care
 - Personalized care
 - Low cost and easy
 - Remote and at-home service
 - Access to multiple, frequent assessment
 - Increased quality of life
- Healthcare:**
 - Improve patient outcomes
 - Limit subjective observations and patient self-reporting
 - Reduce time spent by specialists
 - Avoid ineffective treatment plans and lost inhibitor time
 - Reduce cost of healthcare
- Society:**
 - Increased equity by making healthcare accessible and affordable
 - Reduce lost productive time of individuals with MS, their families, and others

References

- [1] MS Society of Canada, 2020
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- [3] National Health Service (NHS), 2021
- [4] World Health Organization, 2021
- [5] National Health Service (NHS), 2021
- [6] National Health Service (NHS), 2021
- [7] National Health Service (NHS), 2021
- [8] Ralston, J. D., Ralston, J. D., Ralston, J. D., Ralston, J. D., Ralston, J. D., Ralston, J. D., ... & Ralston, J. D. (2020). Multiple Sclerosis. In: StatPearls. Treasure Island, FL: StatPearls Publishing.

sensor signals and MRI metrics and other symptoms by combining sensor data, MRI scans, and assessment of symptoms. Previous applications of the phybrata sensor show utility in concussion, stroke, invasive neurosurgeries, Parkinson's disease, elderly frailty, and peripheral neuropathies. Findings from preliminary work using PROTXX sensors have proven useful for remote monitoring of MS patients.

The [virtual poster, titled "PROTXX wearable sensors: one step closer to bringing low-cost, equitable, and personalized \(home\) care to patients with Multiple Sclerosis"](#), was presented by lead author Sepideh Heydari, PhD, Mitacs Elevate Postdoctoral Fellow at the University of Victoria. Co-authors were Jodie Gawryluk, PhD, Associate Professor, Clinical Neuropsychology at the University of Victoria, and John Ralston, PhD, PROTXX CEO and founder. Dr. Heydari commented: "We expect the phybrata sensor data to show a strong relationship with brain lesions and symptoms of cognitive, mood and fatigue associated with MS. This would be a significant step forward in the application of digital biomarkers to enhance quality of care for individuals with MS, as well as for leveraging digital technology to reduce costs for both the healthcare system and the individual patient. A successful outcome of our study could have major implications for both diagnosis and monitoring of treatment trajectories, including via remote patient assessments."

PROTXX CEO, John Ralston, added: "Our research partnership with Dr. Gawryluk and Dr. Heydari and their colleagues at the University of Victoria adds world class expertise in MS diagnostic imaging and clinical treatment to the development, validation, and eventual commercialization of an important new medical device innovation. The financial support from Canada's Mitacs Elevate program has been instrumental in enabling this industry/academia collaboration."

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About PROTXX, Inc. (<https://protxx.com/>)

PROTXX innovations in wearable sensors, machine learning, and remote patient care transform the lives of tens of millions of people with complex neurophysiological medical conditions that can result from injuries, disease, and aging. Headquartered in Menlo Park, California, the company is led by an accomplished team of IoT device and data platform engineers, clinical neurology researchers and practitioners, and digital healthcare business professionals, and is supported by a well-established network of R&D, manufacturing, clinical pilot, and business development partners in the U.S., Canada, the U.K., and Europe.

About the University of Victoria (<https://www.uvic.ca>)

UVic is one of Canada's leading research-intensive universities, offering life-changing, hands-on learning experiences to more than 21,000 students on the edge of the spectacular BC coast. As a hub of transformational research, UVic faculty, staff and students make a critical difference on issues that matter to people, places and the planet. UVic consistently publishes a higher proportion of research based on international collaborations than any other university in North America, and our community and organizational partnerships play a key role in generating vital

impact, from scientific and business breakthroughs to achievements in culture and creativity.

About Mitacs (<https://www.mitacs.ca/en>)

Mitacs is a key link between industry and post-secondary institutions, driving collaborations at home and abroad to develop projects which solve business challenges and develop Canada's innovation capacity. Mitacs is passionate about developing the next generation of researchers helping to fuel Canada's knowledge-based economy.

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