Marisa Cressatti, *PhD Candidate*

Integrated Program in Neuroscience, McGill University
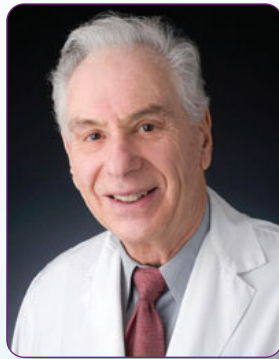
Mervyn Gornitsky, *DDS, FRCDC*

Research Director, Department of Dentistry, Jewish General Hospital

Chief Emeritus, Department of Dentistry, Jewish General Hospital

Professor Emeritus, Faculty of Dentistry, McGill University

Hyman Schipper, *MD, PhD, FRCPC*

Senior Investigator, Lady Davis Institute

Professor, Neurology and Medicine, McGill University

Movement Disorders

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Salivary microR-153 and microR-223 Levels as Potential Diagnostic Biomarkers of Idiopathic Parkinson's Disease

Marisa Cressatti MSc, Lamin Juwara MSc, Julia M. Galindez BSc, Ana M. Velly DDS, MSc, PhD, Eva S. Nkurunziza BSc, Sara Marier BSc, Olivia Canie BSc, Mervyn Gornitsky DDS, FRCDC, Hyman M. Schipper MD, PhD, FRCPC

Parkinson's disease (PD) has stubbornly resisted accurate diagnosis, most particularly in its earliest stages. There currently exists no diagnostic biomarker available for use in clinical settings. However, Dr. Hyman Schipper has noted that dysregulation of distinct microRNAs, miR-153 and miR-223, is evident in PD. Encouraged by initial observations in a mouse model of the disease engineered in the Schipper lab, his team found that levels of these microRNAs are significantly decreased in the saliva of PD patients in comparison with non-neurological (healthy) control subjects. The accuracy of the test separating controls (77 individuals) from PD patients (83 individuals) was estimated at 79% for miR-153 and 74% for miR-223. This suggests that a simple, non-invasive salivary test may prove to be a useful tool for diagnosing PD, an important achievement given that it affects 2% of those over the age of 65.

The identification of a biomarker would be of benefit to patients because it would offer the opportunity of initiating treatments earlier as more effective medications are developed. It may also allow for distinguishing whether a patient has PD or some other movement disorder. Validation of an easily quantifiable salivary biomarker of idiopathic PD in large-scale trials would address a major unmet clinical imperative by facilitating rapid and accurate diagnosis.

The research was prominently highlighted in *Nature Reviews Neurology*.