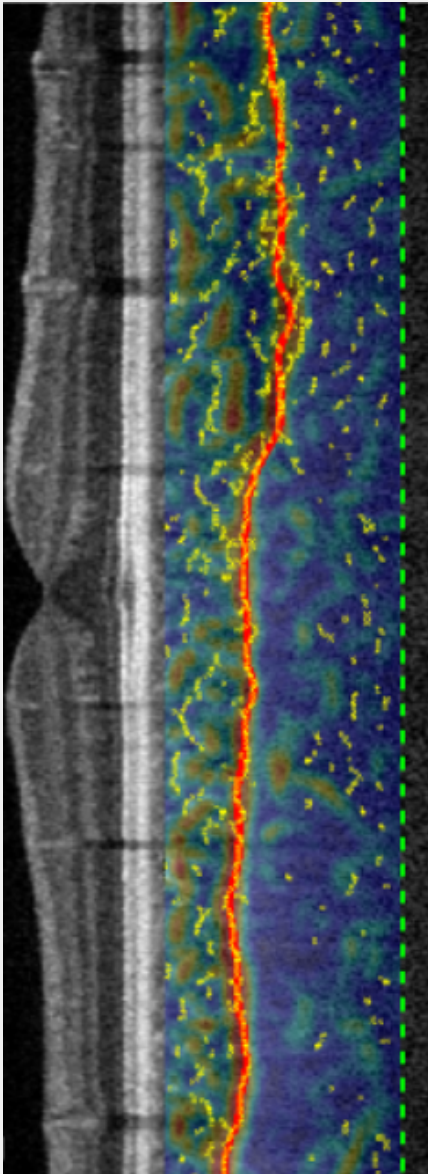




## Non-Invasive Method for Measuring Ocular Rigidity



### Background

The development of non-invasive methods to estimate ocular rigidity will have profound implications for research into ocular diseases. Recent evidence suggests that ocular biomechanics may play a major role in glaucoma pathogenesis. Additionally, several investigations into age-related macular degeneration have led to both mechanical and ischemic theories of pathophysiology related to ocular rigidity but it remains unknown as to whether changing rigidity plays a role in the pathophysiology of the disease. Reduced scleral rigidity is also an important feature of pathological myopia.

### Technology

Pr. Santiago Costantino and Dr Mark Lesk from *Hôpital Maisonneuve-Rosemont* have developed a novel method and software for measuring ocular rigidity. Their non-invasive method is based on novel real-time imaging methods to assess ocular elasticity and tissue deformation. Volumetric changes of the eye due to choroidal pulsations is determined by automated choroid segmentation in sequential FD-OCT images which, in combination with intraocular pressure measurements and biometry, allow the first non-invasive and direct calculation of ocular rigidity. A 3 years clinical study with glaucoma patients is currently ongoing.

### Application

This novel non-invasive approach to measure choroidal blood flow and ocular rigidity is of seminal importance to further understand key biomechanical determinants of ocular diseases. Ocular rigidity measurement is expected to become a clinically valuable tool for diagnostic and prognostic of some ocular diseases such as glaucoma, age-related macular degeneration and myopia.

### Competitive Advantages

- Non-invasive method
- Real-time measurement
- Robust automated choroid segmentation
- Potential for diagnostic as well as prognostic of ocular diseases
- Ongoing clinical study with glaucoma patients
- Currently no commercially available method to non-invasively measure ocular rigidity

### Patent

US Provisional Patent Application (Q2/2014)

### Next Steps

Clinical study is ongoing, Univalor is seeking partners for collaboration and commercialisation of the technology

### Contact

Stéphanie Larose, PhD  
Project Manager, Business Development  
Life Sciences  
T. 514.340.3243 ext. 4249  
stephanie.larose@univalor.ca

Santiago Costantino, PhD  
Mark Lesk, MD  
Hôpital Maisonneuve-Rosemont  
santiago.costantino@umontreal.ca  
lesk@videotron.ca