Research program on road safety, FQRSC, SAAQ, FRSQ

“Evaluating the effectiveness of new perceptual-cognitive measurement and training technologies in predicting and reducing the probability of automobile road collisions among seniors.”

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Project Summary:

There does not exist presently any technology that allows the evaluation of the perceptual-cognitive capacity of drivers to deal with dynamic scenes.

The current project aims to evaluate the effectiveness of new perceptual-cognitive measurement and training technologies in predicting who among individuals over 70 years of age is most at risk of road accidents while driving. Two groups of drivers will be invited to participate in this project: one group with an incident-free driving record, and one group with a history of road incidents.

We will undertake a full optometric assessment of the two groups after which they will be evaluated according to two measures. The first measure (NeuroMinder™) evaluates the equivalent of “Neural Acuity” by measuring sensory thresholds to first-order (simple) and second-order (complex) static and dynamic stimuli. This type of measurement determines the “Perceptual Signature” of the individual, which is associated with that person’s level of neural integrity.

The second technology (NeuroTracker™) evaluates the speed with which a person is able to follow and maintain their attention on several moving objects simultaneously, integrating several high level brain functions.

The drivers will also be evaluated on a driving simulator to identify their overall driving competence as assessed by the number of risky maneuvers undertaken along a given path. The subjects in the group that have had road incidents will thereafter be placed randomly on one of three training programs to determine and compare the beneficial effects of these different interventions on the driving simulator.

Project duration and the submission date for the final report

The project will last 2 years and the final report is expected on June 30 2014.

This information was accurate at the time of the acceptance of the grant.