



For Immediate Release
October 25, 2021

Contact: Robyn Bland
215.780.1487

Salus University Joins NJIT, CHOP to Tackle Disabling Eye Disorder



Dr. Mitchell Scheiman, dean of Research and professor at PCO/Salus, performing a vision rehabilitation technique designed to treat convergence insufficiency.

Elkins Park, Pa. — Backed by a \$3.7 million grant from the National Eye Institute (NEI) of the National Institutes of Health (NIH), Mitchell Scheiman, OD, PhD, dean of Research and professor in the Pennsylvania College of Optometry (PCO) at Salus University will join NJIT and the Children’s Hospital of Philadelphia (CHOP) as part of a multi-institutional team seeking to establish guidelines that will help clinicians diagnose and treat a disabling, concussion-induced eye disorder.

Almost 50 percent of adolescents and young adults with lingering symptoms of concussion suffer from vision problems which may cause blurred and double vision, headaches and difficulties concentrating. While there is strong data showing the condition, known as

convergence insufficiency (CI), can be treated when occurring naturally, there is no proven method for treating the condition when it occurs after a head injury. CI is a condition in which an individual has trouble controlling eye alignment when reading or doing any near work.

The funding follows a \$2 million NIH grant that will enable CI experts and longtime clinical partners Drs. Scheiman and Tara Alvarez, a professor of biomedical engineering at NJIT, to first investigate CI in people without head injuries.

“The disorder makes it hard to read books, work on a computer or even use a smartphone, and significantly impacts the ability to return to school and sports,” Dr. Scheiman said.

The team — which also includes optometrists, engineers, vision researchers, sports medicine physicians, balance experts and biostatisticians — is enrolling a demographically diverse group of 100 participants between the ages of 15 and 25 with persistent symptoms of CI one-to-three months post-trauma in clinical trials at CHOP and Robert Wood Johnson’s Somerset Pediatric Group in New Jersey. The sources of their concussions vary, from falls to car accidents, to sports injuries. While testing their vision, assessing their ability to perform daily tasks such as reading, and collecting eye movement data to determine how quickly and accurately they can track a moving target on a computer screen, the group will also examine links to the brain.

Through fMRI imaging, they will measure changes in blood oxygen levels in different regions of the brain while it is at rest and while people are moving their eyes, for example, as a way to determine how much energy is produced in these different modes and where it is directed. Following a course of therapy sessions, the group will repeat the tests to determine whether the patients’ eye function has improved and how that correlates with changes in the brain.

In addition to levels of blood oxygen, Dr. Alvarez will also measure how consistently neurons in the eye-functioning regions fire, whether cells near those neurons get recruited to help with tasks and whether connections between neurons improve so that signals flow faster and more effectively.

Drs. Alvarez and Scheiman were the first researchers to describe how CI-related vision therapy changed brain mechanisms, reducing symptoms.

“We have completed multiple randomized clinical trials to compare various treatments for CI ranging from simple home-based procedures to more sophisticated office-based therapy administered by trained therapists,” said Dr. Scheiman, who has studied CI for 30 years. “These studies demonstrate that home-based therapies alone have limited effectiveness and office-based vision therapy is the most effective treatment for patients with CI and no history of head injury. Our objective in this new study is to determine if a similar therapy protocol is also effective when CI occurs after concussion.”

Physicians will receive a composite score of clinical and eye movement measures to assist in decisions for return to sport, school and other activities. This composite score will be based upon knowledge from the imaging conducted within this study.

Once they have gathered and published data, the group plans to embark on a larger, randomized clinical trial with 500 patients in major children’s hospitals across the country that specialize in concussions.

About Salus University

Salus University, founded as the Pennsylvania College of Optometry in 1919, today is a diversified, globally recognized professional academic center of learning that offers a wide range of degree programs in the professions of Optometry, Audiology, Physician Assistant, Blindness and Low Vision Studies, Biomedicine, Occupational Therapy and Speech-Language Pathology. Salus operates four clinical facilities in Philadelphia and Montgomery counties that provide highly specialized vision, hearing and balance, speech-language pathology and occupational therapy services. The University has more than 1,200 students, and more than 14,000 alumni worldwide. For more information, please visit www.salus.edu.