Nobel News

Congratulations to RPB Stein Innovation Awardee Gregg Semenza, MD, PhD, on being named a recipient of the 2019 Nobel Prize in Medicine! Dr. Semenza, a professor of genetic medicine at Johns Hopkins University School of Medicine, will receive his Nobel Prize in December 2019 for his work discovering how cells sense and adapt to oxygen availability.

RPB is thrilled that Dr. Semenza is applying his Nobel-caliber knowledge and skills to vision research through his RPB grant, in which he’s exploring new treatments for excessive blood vessel growth in conditions such as age-related macular degeneration and diabetic macular edema.

The Bottom Line for Uveitis

When treating uveitis, clinicians typically hope to minimize the use of steroids in treating the condition, but little has been done to directly compare the effectiveness of non-steroid drug options. Two medications in particular, methotrexate and mycophenolate mofetil, are commonly used for uveitis. The medications have a number of differences, one of them being cost (with mycophenolate mofetil being more expensive).

RPB-supported researchers at the University of California, San Francisco, School of Medicine, with colleagues from other institutions around the world, undertook a multi-site clinical trial to compare the effectiveness of the medications and found that among adults with various forms of uveitis, the medications performed similarly, with methotrexate having a higher success rate overall, particularly for patients with posterior uveitis and panuveitis. The study indicates that for some uveitis patients, effectiveness and cost-effectiveness go hand-in-hand.

Dry Eyes?

If you experience,
• irritated, burning eyes;
• blurred vision that clears with blinking; and/or
• discomfort when reading, watching television or using the computer for extended periods of time

you may have dry eye – a common condition that develops when the eye does not produce enough tears, does not create the proper kind of tears, or when tears evaporate too quickly.

Talk to your eye care specialist about treatment options; it’s important to address dry eye, not only for comfort, but to help protect the outer surface of your eyes and maintain eye health.
Corneal Healing: Stat!
A new gel can immediately seal off the cornea (the clear outer layer of the eye) after an injury, as well as ultimately reduce the need for invasive corneal repair surgery, including corneal transplantation. Called GelCORE, the unique material was recently developed at the University of California, Los Angeles (UCLA), Samueli School of Engineering with colleagues from Harvard Medical School, including RPB Stein Innovation Awardee Reza Dana, MD, MSc, MPH.

According to UCLA, this adaptable biomaterial starts out clear and viscous enough to be applied from a dropper or syringe. Then, following short exposure to visible blue light, the material hardens to the approximate density of the cornea. Corneal cells gradually grow into the material, allowing for both short-term and long-term healing. The research team plans to start human clinical trials of GelCORE in 2020.

From the Sky to the Eye
RPB-supported researchers at the University of Rochester have achieved an incredible scientific feat. Using a technique pioneered in astronomy, called adaptive optics, combined with ultrafast imaging technology, the research team, which includes RPB Career Development Awardee Jesse Schallek, PhD, has developed a way to track and image single blood cells in any blood vessel at the back of the eye. As a result, researchers are studying microscopic capillaries (the smallest blood vessels) in detail for the first time. This is important because many vascular diseases of the eye are believed to begin in the capillaries. The researchers hope that the technology will ultimately provide opportunities for early detection of eye diseases that precedes even the most sophisticated clinical imaging technology available today.