Contributor Report

Vision Researchers Update Congressional Staff about Important Advances in Understanding and Treating Chronic Dry Eye

In a February 15, briefing sponsored by AEVR and the Women’s Eye Health Task Force, Dr. Kelly Nichols (Ohio State University College of Optometry) and Dr. Janine Smith (NEI) reported on the complexities of chronic dry eye and recent NEI-funded research to understand and treat this nagging condition. “Up to twelve million Americans have dry eye,” said Dr. Nichols, “more women than men are affected, which may be related to aging changes in the production of sex hormones.” Chronic dry eye causes a variety of medical and lifestyle problems, not the least of which is dry, burning and irritated eyes.

With the growth of the aging population, the number of Americans with dry eye is expected to increase significantly. The normal tear layer of the eye is an extremely intricate tri-layered complex of water, electrolytes, proteins, lipids and immune system products. The tears protect the cornea, which is the transparent dome over the iris and pupil. Drs. Nichols and Smith are clinical scientists whose research is helping define the link between the tear film of the eye, hormones, autoimmunity and inflammation.

Factors other than age and gender can cause dry eye, according to these researchers. A dry environment, like Colorado’s, is one. An autoimmune condition such as Sjögren’s Syndrome, which causes tear glands to malfunction and affects about 4 million people, is another. Laser eye surgery to correct near-sightedness, contact lens wear, extended computer use and low blink rates can also lead to dry eye symptoms. Epidemiological research demonstrates just how prevalent dry eye is in the United States: between 14-25 percent of patients stop wearing contact lenses due to dry eye; 15 percent of Americans over 65 have dry eye; and roughly 4 percent of Medicare claims are for an examination where dry eye is the primary diagnosis.

“Finding an effective treatment can be very challenging for many patients,” said Dr. Nichols, who noted that treatment is important because dry eye can have significant medical, economic and social consequences. It can damage the surface of the eye, cause blurred vision and abrasions of the cornea, and in its most severe form can lead to corneal scarring and vision loss. It can lead people to make major changes to their work and social lives just to manage their symptoms, for example, driving at night. Further, dry eye can lead to an expenditure of considerable sums of money for over-the-counter eye drops, prescription eye drops, prescription oral medications and surgical procedures, and can be associated with lost work-related productivity.

Dr. Smith reported on NIH research showing that dry eye is more common in women who take menopausal hormone therapy. She also described how NEI-funded research is increasing knowledge about the role of inflammation and autoimmunity in this condition. “Dry eye research is a priority for NEI,” reported Dr. Smith, who serves as Deputy Clinical Director. “We are funding research to understand the triggers and propagating factors that lead to dry eye. The findings will lead to the identification and testing of new treatments to provide relief from dry eye. Most importantly, we’ll be able to improve eye health and quality of life for millions of people.”

A fact sheet on Chronic Dry Eye is available from the Sjögren’s Syndrome Foundation at http://sjogrens.org/syndrome/dry_eye.html