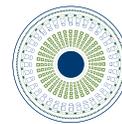


EDUCATION

AEVR Congressional Briefing Addresses Dry Eye Research



DECADE OF VISION
2010-2020
an initiative of the
Alliance For Eye And Vision Research



Featured speaker Kelly K. Nichols, O.D., M.P.H., Ph.D., Dean of the School of Optometry at the University of Alabama at Birmingham

On June 8, AEVR held a standing room-only Congressional Briefing that focused on the causes of dry eye disease and potential therapies that are being researched through funding from the NEI/NIH and private industry. Dry eye, which affects up to 20 million Americans, occurs when the eye does not produce tears properly or when the tears are not of the correct consistency and evaporate too quickly. For some people it feels like a speck of sand in the eye, or stinging or burning that does not go away. For others, dry eye can become a painful chronic and progressive condition that leads to blurred vision or even vision loss if it goes untreated, due to inflammation that can cause ulcers or scars on the cornea, the surface of the eye.

Entitled *Dry Eye: Today's Research, Tomorrow's Solutions* and co-sponsored by several AEVR members and coalition partners (see box below), the briefing featured NEI-funded clinician-scientist Kelly K. Nichols, O.D., M.P.H., Ph.D., who serves as the Dean of the School of Optometry at the University of Alabama at Birmingham and who previously spoke in 2006 on this topic at the largest attended AEVR Briefing ever. In opening comments she admitted that, when considering an area of research for her

doctoral studies, she chose dry eye since it is such a common condition yet little had been known about its diagnosis and treatment at the time. She has subsequently focused her research on all aspects of dry eye, including meibomian gland dysfunction, blepharitis (inflammation of the eyelids), other types of inflammation, impact of menopause on dry eye, tear proteomics and lipidomics, dry eye diagnostics and therapies, and quality of life.

Dr. Nichols described the three layers of the tear film and the important role of each from cornea outward: the mucin layer, which adheres tears to the eye; the aqueous or water layer, produced by the lacrimal gland and which nourishes and protects the cornea; and the lipid or oil layer, produced by meibomian glands and which lubricates and prevents evaporation and provides the smooth refractive surface needed for optimal vision. Although the tear film includes 200-plus different

“Although it has been ten years since I last spoke on Capitol Hill about dry eye, I look forward to speaking to you again—hopefully in a year or two and not another ten years—as our knowledge of dry eye and potential research direction is greatly accelerating and will result in advances in clinical care.”

–Dr. Nichols

lipids and 500-plus unique proteins, science does not yet know which are the most important for proper protection and lubrication of the eye and the absence or insufficiency of which results in dry eye. As a result, proteomics and lipidomics are one of the main areas of research within the 30-plus dry eye basic, translational, and clinical projects being funded by the NEI/NIH in fiscal years 2015 and 2016 and among the more than 50 scientific papers being published each month on dry eye. Although

Dry eye is one of the most common of all eye conditions, primarily affecting adults 45 years and older, with an estimated six million Americans over age 65 with severe dry eye—the majority of which are women. Although researchers have long known about age and gender as factors, they are now discovering ethnic and racial differences, and that dry eye impacts younger and younger patients. Dry eye can have many other causes including environmental exposure, medications, eye surgery (such as laser correction surgery), immune system disorders such as Sjögren's syndrome, lupus, or rheumatoid arthritis, and an increasingly common cause—staring at computer or video screens for too long without blinking.

therapies have been developed or are in the drug-development pipeline to treat dry eye—some of which affect the lacrimal glands while others affect the meibomian glands—research is vital to develop more focused and potentially personalized treatment approaches.

In expressing hope for the future, Dr. Nichols displayed a timeline which showed progress over the past twenty years, including the first consensus dry eye definition in 1995 to a second in 2007 through the Tear Film and Ocular Surface (TFOS) Dry Eye Workshop, often called the DEWS Report, to a third anticipated in 2017 (TFOS DEWS II), which will assist in further refining clinical and research efforts. Concurrently, treatments have developed from over-the-counter topical lubricants to topical prescription drugs approved by the Food and Drug Administration (FDA), with many more in the development pipeline, ultimately resulting in greater treatment options for patients.



From left: Beth Kneib, O.D., American Optometric Association (AOA), Dr. Nichols, and Alison Manson, also from AOA



Dawn Mancuso, Executive Director of the Association of Schools and Colleges of Optometry (ASCO), and Mark Risher from Allergan



AEVR Executive Director James Jorkasky with Ted Buckley, PhD. from Shire



Dewayne Blackmon, office of Cong. Tim Walz (D-MN) with AEVR Director of Education David Epstein. Cong. Walz, the highest ranking enlisted soldier to ever serve in Congress, has been a supporter of vision research at the NIH and the Department of Defense (DOD).



Prior to speaking and under the auspices of NAEVR, Dr. Nichols met with Hunter Hobart from the office of Cong. Gary Palmer (R-AL) to describe her research

AEVR wishes to thank the following member organizations and coalition partners for their co-sponsorship of this event:

Research to Prevent Blindness
Association for Research in Vision and Ophthalmology
Women in Ophthalmology
Women's Eye Health
Society for Women's Health Research
Sjögren's Syndrome Foundation

AEVR also wishes to thank Shire for funding to support event management.