Spring 2020

Beaver Dam Offspring Study &
Epidemiology of Hearing Loss Study

Studies Update

BOSS and EHLS Research Continues

Even though you haven't heard from us for a while, study research staff have been busy analyzing the data collected during previous EHLS and BOSS phases. In the last two years, 18 scientific articles have been published and 8 presentations given using data collected from the EHLS and BOSS. A full list of published articles is available on the BOSS website: https://boss.pophealth.wisc.edu/Research.htm under 'Other Publications.' We are in the process of applying for new funding to continue these studies.

★★★ ***Thank you for your participation and contribution to these studies!*** ★★★

Contrast Sensitivity: The 'Other' Vision Test

Most people are familiar with the eye chart where letters get progressively smaller to determine if a person needs glasses. However, in the BOSS we also measure contrast sensitivity which measures a more subtle aspect of visual function.

- **What is contrast sensitivity?** How well you can see an object against its background. The more similar the object is to the background, the more challenging it becomes. Think of trying to see a white truck on a foggy day.
- **How is it measured?** It is measured with a chart where the letters get progressively lighter.
- **Why is it important?** People with poorer contrast sensitivity may have a harder time distinguishing light objects from a light background or dark objects from a darker background. This may cause problems with daily activities including driving, especially at night, and increase the risk of falls.

Common Risks to the Senses Means Common Points for Prevention

Two recent articles from the **BOSS** research team published in *The Laryngoscope* and *The Journal of the American Medical Association-Ophthalmology*, reported risk factors for development of hearing and contrast sensitivity (vision) impairments during the 10-year follow-up period. Some of these factors were common between the two impairments:

- Older age
- Male
- Larger waist or higher body mass index
- Higher blood levels of the heavy metal cadmium

While we can't do anything about our age, some of these risk factors may provide a pathway to reduce hearing and vision impairments in the future. Reducing weight or waist size or reducing exposure to cadmium, which is found in cigarette smoke and pesticides applied to food crops, may help to lower the rate of these sensory impairments in the future.

BOSS & EHLS Findings Presented at the American Audiological Society National Meeting

Hearing aids were the topic of 2 **BOSS** poster presentations.

★ ***Jacqueline Weycker, BA,*** a student working toward her Doctor of Audiology (AuD) degree, presented results on what prompted **BOSS** participants with a hearing loss to get a hearing aid. Her research found that among participants with high frequency hearing loss at the 5- or 10-year exams, people who got hearing aids were more likely to do so if they scored higher on a hearing handicap questionnaire, reported that their friends and relatives thought they had hearing loss, used closed captions on the tv, or if they had a more severe hearing loss. These findings suggest that social factors, self-awareness, and more impaired hearing are important factors for deciding to get a hearing aid.

★ ***Lauren Dillard, AuD,*** a doctoral student in Population Health and Communication Sciences focused her research on predictors of hearing aid use among **BOSS** participants. Her study confirmed previous clinical findings that the most important predictors of using a hearing aid were hearing loss severity and self-reported difficulties hearing. However, she also found that factors related to overall health and manual dexterity were important too. These results suggest that health care providers may find it beneficial to also consider health factors and manual dexterity when determining who may be successful at using a hearing aid.

From left to right: Natascha Merten, PhD, Jacqueline Weycker, BA, Lauren Dillard, AuD

★ ***Natascha Merten, PhD*** gave a talk at the meeting on a potential long-term benefit of musical training on speech understanding. Participants may remember being asked to repeat words or numbers during their hearing test. These tests assess speech understanding (perception). Using data collected over several phases of the **Hearing Study**, Dr. Merten found that participants who had played a musical instrument for at least 5 years had better speech perception than those that did not have this musical training. She found that musicians have better speech perception later in life and showed less decline in their speech perception ability over time. This could benefit future research on the development of effective interventions to improve speech perception.

In memoriam: As you may have heard, Dr. Ronald Klein, one of the founders of the Beaver Dam Eye Study, passed away last August. Dr. Klein was a dedicated physician and researcher. His contributions to the field of ophthalmology are world-renowned. He was grateful for the long-term support from the Beaver Dam community and all the participants who gave so generously of their time to advance the understanding of eye diseases.

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Please use these numbers to contact us with any questions you may have or to update your phone and address information. EHLS and BOSS participants may also contact us via email at boss@episense.wisc.edu

We love hearing from you!