

Sensory Update

In 2050, the number of Americans aged 65 and older is projected to be 88.5 million, more than double what it was in 2010.

-US Census Bureau

Thinking Clearly about BOSS Research

Ears hear. Eyes see. Noses smell. And brains? They use and store all that we hear, see and do, or so we hope. Like any organ or system in the human body, the brain needs oxygen to function well. The flow of well-oxygenated blood through the carotid arteries and to the brain is of particular interest to scientists who study brain functioning. In an effort to understand the role that healthy arteries play in clear thinking, epidemiologist Wenjun Zhong and other BOSS researchers studied the relationship between the performance on memory and cognitive tests and the results of carotid artery ultrasound scans. These scans measure the thickness of the walls in the carotid arteries (a measure of general atherosclerosis) and evaluate the presence of plaque. In the past, research studies exploring this relationship have focused largely on older populations and have yielded inconsistent results. Dr. Zhong's analyses in BOSS, however, focused on a large group with an average age of only 49, enabling Dr. Zhong and her colleagues to better understand the earlier stages of this relationship. The results of her study, which were published in the July issue of *Atherosclerosis*, showed that there is a small but significant association between carotid atherosclerosis and lower scores on tests of cognitive function. Although the association was small, it was consistent among the various cognitive tests. This suggests that early cognitive decline may start in middle age and coincide with developing atherosclerosis. The mechanisms which cause each of these health problems to occur are not yet completely apparent. More research is needed to accurately assess the relationship between these two common health problems with particular attention being paid to the different types of cognitive change and the types of tests and measurements that can assess it. BOSS researchers are proud to conduct research that could lead to the early identification of health problems; as well as the identification of preventative strategies which could minimize or delay the health problems often associated with aging.



Our staff members in Beaver Dam enjoy meeting the BOSS participants and work hard to ensure that the BOSS examination is a good experience. Front row left to right: Barb, Lisa, Shirley, Tonya. Back row left to right: Jo, Tom, John

Beaver Dam Offspring Study

Spotlight on Sensory Science

BOSS researchers are busy presenting data at Scientific Meetings

What Does Your Tongue Say?

Fungiform papillae are the little dots on the tip of your tongue that contain taste buds. BOSS participants may recall having their tongue stained blue during their first study examination. This procedure was used to identify the number of papillae. Some people have a higher density of these papillae, and BOSS researchers are interested in how the density of papillae may play a role in the relationship between how intensely a person tastes and health outcomes, particularly in those with impaired taste. Using the BOSS data, our researchers found that the number of papillae was lower in males, older people, smokers and alcohol drinkers. No relationship between obesity and the number of papillae was found. The significant cross-sectional associations of age, sex, and lifestyle behaviors with papillary number deserve further study to uncover possible long term effects on papillary density.

–Presented at the 2012 Association for Chemoreception Sciences Annual Meeting

Cell Phone Use & Hearing

Cell phone usage continues to increase with each generation - many of us never go anywhere without one. What are the potential effects of increased cell phone use on hearing? In 2005 BOSS researchers began to collect information regarding cell phone usage for the purpose of investigating the association between cellular phone use and hearing. It was found that men were significantly more likely than women to report daily use of a cell phone. Daily use of a cell phone was significantly associated with a slightly higher pure tone average (a measure of hearing loss across several frequencies, a higher average means poorer hearing) in the better ear. Simply put, those who reported more cell phone use generally had slightly poorer hearing, however, we cannot say whether the cell phone use contributed to hearing loss. Further study is needed to determine long term effects of cell phone use on hearing. With the different types of cell phones that have come out since 2005 there are many questions regarding how new technologies, such as Bluetooth devices, affect hearing.

–Presented at the 2012 American Auditory Society Annual Meeting.

*So far we
have seen
more than
2000
participants
for this exam
phase!*

A Participation Milestone

In May 2012 we welcomed the 2000th BOSS2 participant to our Warren Street clinic. In the initial Beaver Dam Offspring Study we examined 3,298 participants during the three year data collection period. Before we complete the 5-year follow-up examination period, which began in July 2010, we hope to reach our goal of examining close to 3000 participants. It is a rare achievement in studies of healthy subjects to reach such a milestone, and we are extremely grateful to all who have participated in this examination phase for making time for the study in their busy lives. Whether you are number 1, number 2000 or number 3,298 each and every member of the study population is extremely important. The commitment each of you makes to this research helps to plan for health care needs of our aging population around the globe.



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