



Federal Health Matters

Rockers' Earplugs Enhance Cockpit Communications

In the cockpit of a fighter jet, which is not insulated against sound as those of commercial jets are, hearing loss from excessive noise exposure is a serious health concern. In fiscal year 2004, the VA made 384,000 disability payments for hearing impairment—including 85,000 for complete hearing loss. But simply blocking out all sound isn't the solution, since pilots need to communicate with the crew and other pilots.

Currently, most military pilots use disposable foam earplugs to muffle wind and engine noises. In order to hear the communication speakers in their helmets, however, they often wear them loosely or cut them in half. That's why the Air Force Research Laboratory at Wright-Patterson Air Force Base, OH has teamed up with two private companies, Westone Laboratories, Inc. (Colorado Springs, CO) and Manufactured Assemblies Corporation (Dayton OH), to adapt earplug technology originally designed for musicians. This technology blocks excess noise while at the same time allowing the wearer to hear specific sounds—in the case of musicians, usually individual instruments or voices.

Air force researchers have transformed this technology to suit aircraft maintenance workers and pilots by incorporating implanted speakers in a silicone earplug that's molded to the individual wearer. The earplugs also contain small vents that relieve pressure created with changes in altitude, which can rupture eardrums. An added bonus is that the implanted speakers eliminate the need for speakers in the pilot's helmets, which allows for lighter helmets.

Already, about 300 pilots and maintenance workers are using the new earplugs, which have been dubbed the Attenuating Custom Communications Earphone System, with good results. In December, Lieutenant General John Bradley, chief of the U.S. Air Force Reserve, personally tested the earplugs while flying an F-16 jet. He called the devices "phenomenal," and told the Associated Press that he would like to "buy this for every [reservist]... who wears a helmet." While the new earplugs cost over \$200 a pair, DoD officials believe that, by reducing hearing loss in service members, they will save money in the long run.

VA Study Questions PSA Screening

In its January 9 issue, the journal *Archives of Internal Medicine* published a study that investigated whether screening healthy men for prostate cancer by measuring the level of prostate-specific antigen (PSA) or performing a digital rectal examination (DRE) improves their chances of surviving prostate cancer. The research team, led by John Concato, MD, MPH of the VA Connecticut Health Care System and Yale University, identified 501 veterans, from 10 New England VA medical centers, who had been diagnosed with prostate cancer between 1991 and 1995 and had died before the end of 1999. They also identified a control group of 501 veterans, matched for age and VA facility, who were alive when the corresponding patient died.

The team reviewed patients' medical records to determine whether they had undergone PSA testing or DRE for screening purposes—that is, before suspicion of prostate cancer arose.

The researchers found no significant links, however, between either PSA screening and all-cause mortality or between PSA or DRE screening and cause-specific mortality. They conclude, therefore, that "recommendations regarding screening for prostate cancer should not endorse routine testing of asymptomatic men to reduce mortality."

In an editorial accompanying the study, Michael Barry, MD of Massachusetts General Hospital points out that, while many clinicians believe the data eventually will show that PSA screening does more good than harm, there is a "substantial downside" to routine testing. In many cases, elevated PSA levels don't indicate prostate cancer, and up to 30% of men with prostate cancer have normal PSA levels. False-positive results can lead to anxiety and unnecessary procedures on the one hand, and false-negative results can lead to complacency and missed diagnoses on the other.

What is clear is that mortality from prostate cancer has dropped in recent years. Robert Nadler, MD, associate professor of urology at Northwestern University, told the *Chicago Tribune* that he believes these falling rates are best explained by "aggressive PSA screening and treatment." But Barnett Kramer, MD, MPH of the National Institutes of Health counters that more effective therapies, developed around the same time as PSA screening, could account for the improvement. It seems that, until the results from large, randomized, prospective, controlled trials are in, the jury will have to stay out. In the meantime, Dr. Concato's team recommends following current guidelines, which call for clinicians to explain the uncertainty of PSA testing to patients and obtain their "verbal informed consent" before screening. ●