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News Release

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New Technology: HandSight—Helping Blinded Veterans “Read” What They Touch

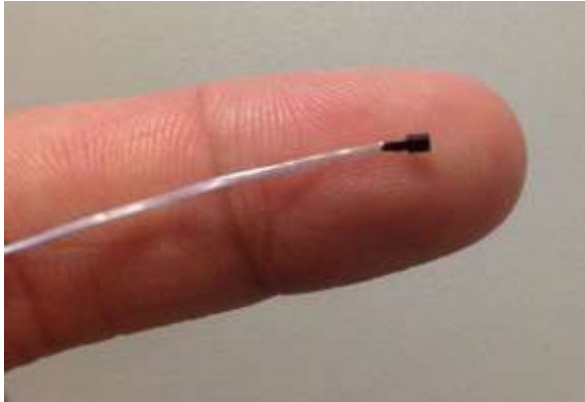
There are 1.5 million Veterans with a severe vision impairment that makes it difficult to impossible to read print. This number has been increasing in recent years as our Veterans have aged, and greater numbers have contracted age-related eye diseases. Those with some residual vision can use special magnifiers to read, while the 15% who are blind cannot read text at all. While Braille versions of some books and magazines are available, this does not solve the problem of reading a menu in a restaurant, the bills that come in the mail, a newspaper, or a book from a library. And, only about 8% of these Veterans learn to read Braille.

In response to this need, Atlanta VA CVNR Investigator David Ross is working with University of Maryland engineers to develop HandSight – a micro-camera that can be worn on a finger that connects to a smart watch. Software in the smartwatch recognizes text and translates it into speech. It also vibrates whenever the person touches a line of text to indicate where text is located on a page. Using this vibration to find and move their finger along a line of text, blinded Veterans can read any text on any surface.

In addition to reading, HandSight will also be able to help these Veterans recognize the colors and fabric patterns of their clothes and provide guidance on appropriately coordinating the clothes they wear. The Veteran will be able to virtually “tag” each item of clothing. That is, the Veteran will be able to use HandSight to record a meaningful verbal description of each piece of clothing. Then, recognizing the weave and color patterns of each item, it will playback the associated verbal recording.

Finally, HandSight will be able to recognize the unique lines and finger prints of each Veteran’s own hand, so that each location on the Veteran’s hand can have a meaning. Using Bluetooth, HandSight can communicate this meaning to a smart phone. For instance, the Veteran’s hand can be treated like the screen of a smart phone. Without taking the phone out of his/her pocket, touching a particular location on the hand, the Veteran could open up a specific app, or dial a specific phone number, or hear time, or dial 911. The possibilities are nearly unlimited. Using a home-control app on a smart phone the Veteran could turn lights or fans on and off, control the thermostat, turn on the TV and change the channel, etc.

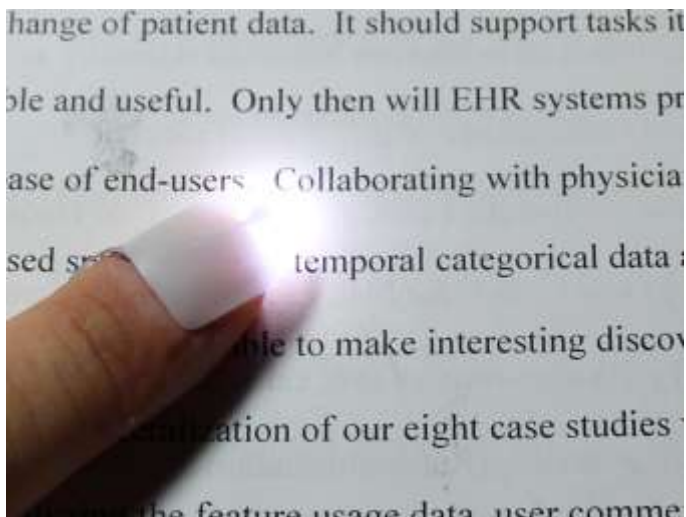
Says Ross: “HandSight will make simple, everyday things so much easier to do for these Veterans. I’d love being able to control my smart phone and my home from the palm of my hand. It sounds really cool to me, and I’m not blind!”



HandSight micro-camera (the NanEye 2C)



HandSight micro-camera built into a false finger nail along with a tiny LED light.



HandSight Micro-Camera built into a false fingernail
With built-in LED light reading a line of text.