

Speech, not tones, produces better hearing test

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It's taken 70 years to invent a better hearing test. That's how long we've been using the classic 'beep' audiology test, first developed to assess returned soldiers from WW2.

A team of Melbourne researchers has now created a new test that uses real words, not tones. You can do the test yourself at home or work and obtain an immediate, easily understood interpretation of the results. If you need a hearing aid they can send you one within days that is the equal of the best hearing aid, but for a fraction of the cost.

But they haven't developed the test just to sell their Australian-developed hearing aids. They're gifting it out to the community – because they believe that the traditional test has become a barrier to the four million Australians who would benefit from a hearing aid but do nothing about it.

"Too few Australians are getting their hearing tested. They're put off by the stigma and inconvenience of going to see an audiologist. Eventually many of them are dragged in by their partners. But they've often already become stressed, depressed and/or socially isolated," says Professor Peter Blamey, Chairman of Blamey Saunders Hears and Deputy Director of the Bionics Institute.

"While working on the bionic ear I spent many years studying how toddlers develop speech and more recently on how many of us gradually lose our ability to understand the spoken word. Last year I realised that

the big flaw with the traditional hearing test is that it's not directly measuring how we hear and understand speech," he says.

"Our test comprises 50 English words presented to both ears in a quiet environment. Each word has a consonant-vowel-consonant structure, and the lists are phonetically balanced, with the proportions of each vowel and consonant being close to the proportions found in the English language in general. There are billions of test variations and it provides more relevant information than a traditional test."

Professor Blamey hopes that the new test will become a global standard, replacing the traditional audiogram for all but the most specialist tests. He believes it also can contribute to improving hearing in remote communities and developing countries with limited infrastructure.

"Successful hearing aid use can not only reduce hearing difficulties, but also slow hearing deterioration," says Dr Elaine Saunders, Audiologist and Managing Director at Blamey Saunders Hears. "If hearing loss is left untreated too long, then the brain adjusts and the deficiency becomes harder to correct."

"We want people around the age of 40 and up take the test to see how they rate," he says. "It's important to catch hearing issues early so they don't get worse."

Blamey Saunders Hears is making the new test freely available online to anyone who wants to rate their hearing ability and they hope that audiologists will begin using it too. The test is a faster and more easily understood way of assessing hearing and programming hearing aids than the conventional audiograms currently used by audiologists. And it is just as accurate.

In contrast to conventional audiograms, which rely on detecting pure

tones in a soundproof booth, the [new test](#) is based around what human hearing is mainly about – understanding spoken words in an everyday environment.

This kind of practical SPT is something the audiology world has been seeking for more than 70 years. Its development in Melbourne was enabled by a fortuitous coming together of researchers whose skills helped develop the bionic ear, and audiology research data from thousands of customers of Blamey Saunders Hears.

The information generated by the SPT can be used in recommending, setting up and fitting [hearing aids](#). What's more, instead of being presented in a graph of frequencies and hearing thresholds, those who take the test are provided with a much more understandable chart which shows exactly what sounds and parts of words they are picking up and what they are missing—even down to a list of words with which they are likely to have difficulty or to misinterpret.

About the Speech Perception Test

The Speech Perception Test (SPT) is a monosyllabic word test that provides information about the hearing of the person undergoing the test.

There are 50 English words in each test list, presented in both ears in a quiet environment. Each word has a consonant-vowel-consonant structure, and the lists are phonetically balanced, with the proportions of each vowel and consonant being close to the proportions found in the English language in general.

There are 32 lists, from which a random choice is made, and the 50 words within each list are presented in a new random order each time. The structure of the lists and the randomisation procedures are designed

to provide information that is representative of general speech perception performance of individuals and to avoid learning effects.

The responses are typed in by the person performing the test and scored automatically. Each list yields four primary scores – number of words correct (out of 50), number of words not heard (out of 50), number of consonants correct (out of 100) and number of vowels correct (out of 50). These primary scores are related to hearing status: the greater the [hearing loss](#), the lower the word, consonant, and vowel scores, and the higher the number of words not heard.

The SPT is a challenging test, designed to evaluate the limits of hearing, similar in intent to an audiogram which is designed to find the threshold of hearing. Even people with good hearing make errors on the test, and we have defined a range of performance for people with good hearing that we call the "normal hearing range".

Although Blamey Saunders Hears is currently the only audiologist group with the capacity to directly use the results of the SPT to fit a hearing aid, it hopes the SPT will gain wide use and application among audiologists in future, perhaps one day replacing conventional audiograms. In the meantime, users can either contact Blamey Saunders Hears to utilise the results of the SPT directly in the fitting of a [hearing aid](#), or use the results as a trigger to visit their own audiologist for further conventional assessment.

More information: Test your hearing at www.blameysaunders.com.au/testyourhearing

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