

# LACE AUDITORY TRAINING



**BY**  
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Listening and Communication Enhancement (LACE) was released in the mid-2000s by Neurotone, Inc. It was the product of a partnership between audiology researchers at the University of California San Francisco (UCSF) and hearing-attuned Silicon Valley engineers who saw the need for a simple, self-paced, home-based aural rehabilitation solution for struggling new hearing aid wearers and adults with listening challenges.

LACE works to improve users' ability to listen and understand speech in three typical difficult listening situations: in the presence of background noise, with rapid speakers, and while distinguishing one voice in the presence of a competing speaker. It also includes auditory working memory tasks and communication tips and strategies.

It is a web-based auditory training software program available with both US and UK English accents. It is usable on any device with a modern web browser and an internet connection

(computer, tablet, etc.). The program consists of 11 self-paced, scored training sessions with four types of training tasks: Speech-in-Noise, Competing Speaker, Rapid Speaker and Target Word (auditory working memory). Three types of standardised assessments, including the QuickSIN are included along with communication tips and strategies. LACE is adaptive to the patient's performance throughout, ensuring patients do not become overly discouraged if their improvement is slow, whilst continuing to challenge those who improve rapidly. With patient consent, hearing healthcare professionals can access patient training scores via the secure LACE Hearing Professional portal and gain insights into the patients' progress.

For over 15 years, LACE has played a valuable international role as an auditory training solution. However, the past two years have further emphasised its benefits with the accelerated rise in teleaudiology and a renewed focus on the importance of maintaining social connections. Telehealth-friendly, patient-driven solutions like LACE are now poised to provide even more value to the clinical world in achieving positive patient outcomes.

## SCIENCE & EVIDENCE

Auditory training programs like LACE can make life-changing improvements to a patient's ability to engage with the world around them. That's because while hearing is one thing, listening and comprehending is another. Hearing is access to acoustic information - and we can provide that access with hearing aids. However, listening is an active process that requires an individual's attention and intention to comprehend meaning and intent.

Hearing loss often goes hand in hand with a decline in listening and comprehension, breaking the internal link between sound and understanding. That means individuals with degraded hearing disengage from the aural world around them, and new hearing aid recipients struggle to process the influx of acoustic information they receive from their new devices. They're simply out of practice.

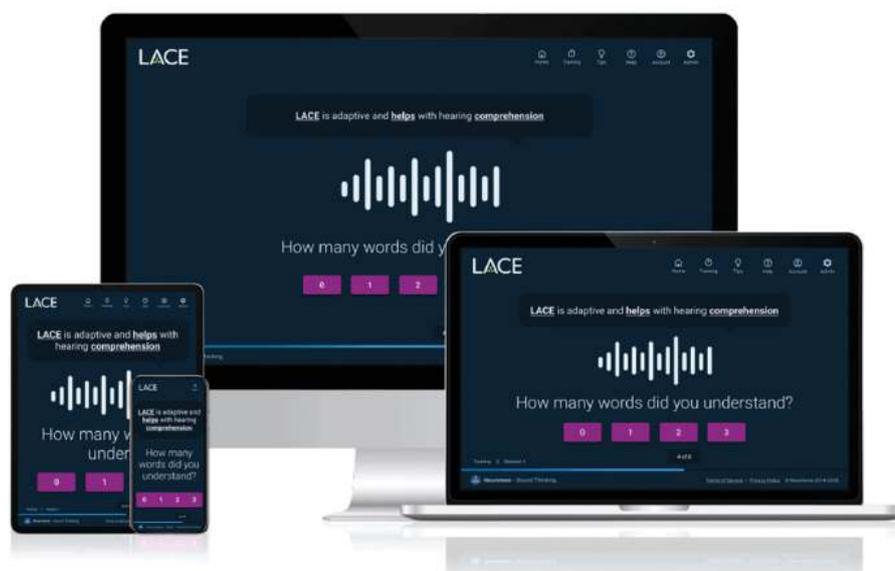
The path to reconnecting sound and understanding lies with retraining the brain, and that's where LACE comes in. Central to LACE is the principle that enhanced listening skills lead to better comprehension and communication, and better comprehension and communication will further enhance listening skills (Figure 1 overleaf).

In the same way physical therapy is necessary to rebuild physical strength and compensate for weakness following surgery or an injury, LACE works to strengthen the ear-to-brain connection when it has been weakened by degraded hearing. It is physical therapy for the brain.

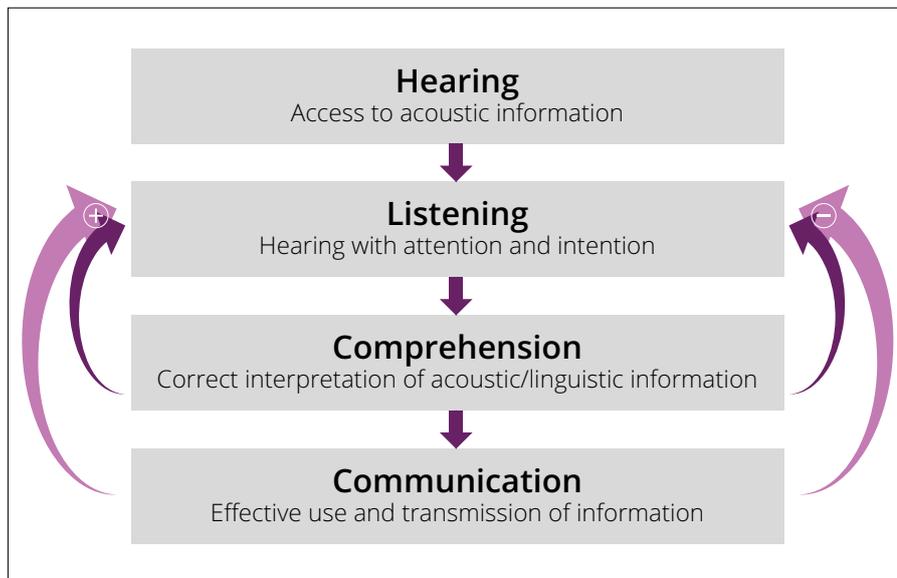
Studies on LACE have shown many significant benefits, including improvements in speech-in-noise perception and understanding of competing sentences, increased overall communication function, positive changes in neurophysiologic responses, QuickSIN score improvement, and reduction in hearing aid returns-for-credit.

## WHO LACE CAN BENEFIT?

Almost any patient who struggles with mild to severe hearing loss can



*Above/ The LACE screen for speech-in-noise tasks.*



**Figure 1/** The interaction of the elements of communication.

benefit from improving their listening and communication skills with LACE. It can be particularly valuable for elderly patients with cognitive deficits and new hearing aid wearers.

We continue to make advances in hearing technology, but amplification alone does not fully meet the needs of

a large percentage of patients. It's rare for hearing healthcare professionals to avoid common post-fitting complaints like "I can't hear when there is background noise," and even more rare for the patient to receive advice beyond allowing themselves time to adjust. By neglecting the value of auditory training, we too often miss

the opportunity to provide patients with a tangible, evidence-based way of facilitating that adjustment. LACE can help patients and professionals avoid post-fitting frustration by actively involving the patient in their hearing health journey.

**INTEGRATING LACE INTO PRACTICE**

There are the practical considerations of how best to incorporate auditory training into the flow of a busy clinic, particularly when there are time pressures. Presenting an auditory training program as an expectation, not a recommendation, reinforces its value and can go a long way toward patient training compliance. Providing simple, clear directions and expectations is important and professional familiarity with the program can put patients at ease before they proceed on their own at home.

This also enables a telehealth-friendly link with the patient. Training scores can be printed out and reviewed at follow-up appointments, which acknowledges the patient's effort and provides insight into potential problems to address.

Science **made** smarter

## World Hearing Day & Hearing Awareness Week

Celebrated every year on March 3rd, this year's World Hearing Day message tells us "To hear for life, listen with care".

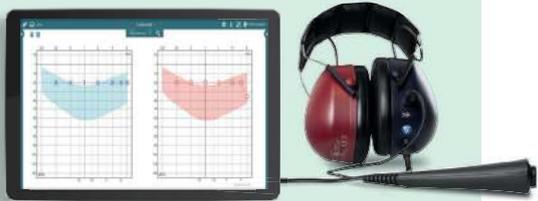
Safe listening as a means of maintaining good hearing across our life is important. There are a host of newly released resources from the WHO and we encourage you to visit their website and see what's available: [www.who.int/campaigns/world-hearing-day](http://www.who.int/campaigns/world-hearing-day).

To help you reach further into the community to spread this message of care during Hearing Awareness Week and to raise awareness for hearing health and protection, Interacoustics are running a promotion on screening audiometers until June 2022. Our new Luna headset is now available and ready to be connected to your own PC for portability and efficiency.

AS608



Luna



Please go to [www.interacoustics.com.au/news](http://www.interacoustics.com.au/news) to view our Screening Audiometer promotion.



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## Monitoring patient training progress on the LACE Portal creates accountability and facilitates compliance.

### COMPLIANCE

Compliance can be an issue for LACE like it can be with any other form of rehabilitation. In the same way it is important for hearing aid patients to have realistic expectations when using new hearing aids, hearing healthcare professionals need to maintain realistic expectations of patients' LACE training compliance. It's important not to get discouraged if patients don't complete all 11 sessions, but rather focus on

the patients who follow through, even partially. Partial completion of LACE can still have significant benefits for the patient, as noted in Table 1.

Auditory training allows hearing healthcare professionals to strengthen their quality of care and takes audiological practice further in the journey to better communication. LACE is an evidence-based, scientifically proven program that maximises patients' ability to get the most out of the sounds of life. ●

Learn more at <https://laceauditorytraining.com/pros>.

LACE Training Day	1	6	11
Average QuickSIN Score	5.5dB	3.75dB	3.5dB

**Table 1/** QuickSIN scores for 50% correct dB SNR for all LACE UK users from 2016-2021.

### REFERENCES

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# LACE IN AUSTRALIA



**BY SHUKRI ABI**  
*Abi Hearing*

Experienced audiologists know that the best technology available is not always enough to improve hearing for some patients. Abi Hearing, my private practice, has an independent and transparent business model that gives me the freedom and flexibility to explore new products and programs to benefit patients. We are independent of manufacturers, collaborate with ENTs but remain independent from their businesses, and unbundle professional fees from device fees.

The Listening and Communication Enhancement (LACE) auditory training program has been an important part of our audiology service offering since 2014. I discovered the program after a patient reported no improvement in his hearing using amplifications and other strategies. It was disappointing for both of us, but I was motivated to find a solution that would help. I contacted the provider of LACE, reviewed its

current users, and introduced the program almost overnight.

### WHO IS LACE FOR?

At Abi Hearing, we believe patients with poor SNR for speech in noise are a great starting point to introduce the program into your practice. An important factor in its success/efficacy is the patients' motivation to want to do it, and their commitment to keeping up with the in-home exercises.

### THE BENEFITS OF LACE

As a small, independent practitioner and business owner I constantly juggle two hats: the clinician and the business owner. Instead of seeing my dual roles as a conflict of interest, I view them as an opportunity to do things differently with intention.

It has been worth the time, money and effort to implement LACE at Abi Hearing. Both my patients and my business have benefitted.

### Patient benefits of LACE

- Improved listening skills
- Empowered to participate in challenging listening situations
- Increased self-accountability: their

input influence their outcome

- Instils shared responsibility

### Provider benefits of LACE

- stand out from the crowd
- improved retention rates
- more diverse service offering
- increased revenue stream
- increased professional satisfaction

### DIFFERENTIATING YOUR BUSINESS

Most small businesses cannot afford to compete on prices alone. Audiology practices are no different. What sets us apart are our unique service offerings and our approach to patient care. Any clinician in the rehabilitation space should focus on building their own toolbox filled with multiple resources that are added to over time. I have found using LACE beneficial in my toolbox and used it with both private and newly fitted HSP clients to help improve their listening skills. Implementing LACE as a counselling tool in rehabilitation sessions for newly fitted HSP clients can assist to measure their progress and overall outcome. ●

*Note: Abi Hearing is not affiliated with the LACE program and is an independent user of its program.*