MADSEN Astera²

LIPread™ featuring MLST™ "real-world" speech test

otometrics

Expand your possibilities with LIPr

The LIPread™ test modality is an optional application in MADSEN Astera² activated by a simple software upgrade. It can expand your ability to evaluate spoken word recognition in both adults and children who are deaf or hard of hearing. The goal is to enhance your ability to estimate real-world listening skills and to predict benefit from sensory aid use.

Using the LIPread™ application, you can assess the patient's ability to understand speech with visual cues. The addition of visual speech cues such as the movements of the lips, tongue and facial expression has very different impact on different people's capability to understand speech. The LIPread™ data are used to assess habilitation/rehabilitation progress and guide clinical intervention.

THE FACTS

- HD video
- Multimodal Lexical Sentence Test (MLST™)
  - MLST-C™ for children
  - MLST-A™ for adults
- Full patient history
- Score'n'store: Store and review complete word list results for all speech tests including QuickSIN™ and LIPread™
- Automatic SNR calculation: Set, store and document any competing noise conditions in an intuitive way
- Dedicated loudspeaker outputs for LIPread™

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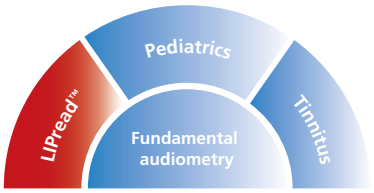

A large number of adults were recruited from flyers placed around a university campus to serve as talkers. The final ten talkers were selected to represent diverse racial and ethnic backgrounds and were recorded in a High Definition audiovisual digital format.

HD Video

The LIPread™ speech player can present video speech materials in three different modes: Audio, Audio+Video or Video. Pressing the play button will present a single test item (typically a sentence). The video is presented to the patient on a second monitor connected to the PC.

MLST™ (children and adults)

Clinically validated speech reading materials in American English were developed by Dr Karen Kirk and co-workers at the University of Iowa; House Research Institute, Los Angeles; Children's Memorial Hospital, Chicago; Washington State University; VA Mountain Home, TN and Western Illinois University. The material has been carefully designed and composed to a high degree of list equivalency regardless of presentation mode. The MLST™ materials are exclusively available as an integrated test in the MADSEN Astera² LIPread™ module.

Proven list and sentence equivalency is necessary when comparing measurements made using different sentences under different amplification conditions at different occasions.

Full patient history

The LIPread™ data are presented in a table with individual time stamps on each measurement. All measurements available for the selected patient are always displayed in the table. Also, the actual list and detailed score are displayed on the screen and in the reports. Having the data available allows for comparison over time. This is particularly important when testing cochlear implant patients because the typical protocol includes measurements starting before implantation as well as measurements at regular postimplant intervals.

Dedicated loudspeaker outputs for LIPread™

The MADSEN Astera² supports up to 5 loudspeaker outputs that can also be given custom names in the user interface. For LIPread™ testing which requires a video stimulus monitor for the patient, the setup of the monitor is not always optimal next to the regular audiometer loudspeakers. Hence, the large number of loudspeaker outputs allow for dedicating a loudspeaker to mount together with the monitor screen to be used specifically for LIPread™. These multispeaker options also allow for testing with stimulus from the front and competing noise from different locations, such as behind the listener. This flexible speaker arrangement is very powerful for assessment/demonstrations. Naming the speakers also makes the user interface simple to negotiate.

MADSEN Astera²

Speech reading and MLST™

Under natural conditions, listeners use both auditory and visual speech cues to extract meaning from speech signals that contain many sources of variability. However, traditional clinical tests of spoken word recognition routinely employ isolated words or sentences produced by a single talker in an auditory-only presentation format. Conventional tests of this kind do not assess the central cognitive processes used during multimodal integration, perceptual normalization, and lexical discrimination that may contribute to individual variation in spoken word recognition performance. A new assessment tool has been designed to evaluate spoken word recognition in both adults and children who are deaf or hard of hearing. These measures are theoretically motivated by a current model of spoken word recognition and also incorporate "real-world" stimulus variability in the form of multiple talkers and presentation formats. The aim of this kind of test is to enhance our ability to estimate real world listening skills and to predict benefit from sensory aid use in children and adults with varying degrees of hearing loss.

Read more about the MLST™ LIPread™ tests:

Kirk KI, Prusick L, French B, Gotch C, Eisenberg LS, Young N. (2012) Assessing spoken word recognition in children who are deaf or hard of hearing: a translational approach. J Am Acad Audiol. 2012 Jun;23(6):464-75. Department of Communication Sciences and Disorders, University of Iowa, Iowa City, IA 52242, USA. karen-kirk@uiowa.edu

Free online article in PubMed.gov

THE FACTS

The MLST™ incorporates "real-world" stimulus variability

- Multiple talkers
- Different presentation formats (Audio/Audio-Video/Video)
- Optional background noise

MLST™ lists are equivalent in all 3 presentation formats

Based on strong psychometric principles

- Reliable and valid in the target populations

The Multimodal Lexical Sentence Test for Adults (MLST-A™)

- Sentences – Bell and Wilson (2001)
- 7-9 words in length (3 key words per sentence)

The Multimodal Lexical Sentence Test for Children (MLST-C™)

- Sentences - Eisenberg et al. (2002) and Krull et al. (2010)
- 5-7 words in length (3 key words per sentence)
- Stimuli represent early-acquired vocabulary
- Words produced by children aged 3-5 years

GN Otometrics, North America. 1-800-289-2150. sales@gnotometrics.com
GN Otometrics, Europe. +45 45 75 55 55. info@gnotometrics.dk
www.otometrics.com

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