The Ewing Foundation SiN Toolkit allows you to use your own device (computer, tablet, smartphone etc) to play the pre-recorded sound and includes all of the other equipment needed for you to carry out accurate and repeatable speech in noise tests for pupils of all ages.
Speech in Noise Toolkit

The Ewing Foundation SiN Toolkit is intended for use in real-world school settings rather than as a clinical test. When used as part of a range of tests, it will provide useful, measurable and repeatable speech discrimination test results to inform decisions by professionals regarding the provision for the child.

Note: it is not intended to replicate or replace clinical test tools.

This toolkit includes the Manchester Picture Test, Manchester Junior Word List and AB Short Word List plus the required equipment you need to perform these speech tests from a computer, tablet or smartphone.

The tests have been designed to provide measurable and repeatable results on a child’s ability to hear speech; with or without their hearing instrument/s & radio aid.

The choice of which test to use relates to the child’s language level. The outcomes will provide guidance for the management of the child; for example amplification reassessment, referral to other professionals and/or review.

The sound files include typical classroom ‘babble’ background noise to allow testing to be repeated in varying noise levels i.e. Speech in Noise (SiN).

Contents of SiN TOOLKIT

The Ewing Foundation SiN Toolkit is supplied in two green cases – one containing the main system and one for the two speaker stands. The speaker power supply and some of the longer cables are stored in the long stand case. You will need to provide your own device for playing the sound files; most computers, tablets or smartphones would be suitable.

Connecting cables for computers and Android devices are included – an adaptor for use with Apple iPhones and iPads is sold separately.

- 2 x Speaker stands
- Tape Measure
- Pair of stereo speakers with hanging connection sockets & UK mains power supply
- 6m Green speaker connecting cable
- 2m Phono pair to 3.5mm cable
- SM-1 sound level meter
- Digital Interface box
- 1.8m Silver USB lead (for use with a computer)
- USB to MicroUSB adaptor (for use with an Android smartphone or tablet)
- Apple Lightning adaptor (for use with an Apple phone or tablet eg. iPhone 5 or iPad Air2). n.b. this adaptor also requires mains power from your device charger. Part no: 39SINAPL1
- Radio aid holder clip
- Encapsulated Results Sheets A4
- Manchester Picture Test
- Manchester Junior Word List
- AB Short Word List
- Manchester Picture Test book
- USB memory stick

You will need to copy the Toolkit software and audio files onto your chosen device before using the Toolkit.
Software Installation:
The SiN Toolkit Software is supplied to you on a USB memory stick. Please do not use this stick for storing other data. This software is exclusively for use with the Ewing Foundation SiN Toolkit.

The software is also available for download directly onto an Apple or Android smartphone or tablet – approximately 1GB of storage space is required. Depending on the speed of your internet connection, downloading the software may take some time, so please ensure that you are connected to WiFi rather than mobile data. Once the software download is completed, it can be stored for offline use and no further internet connection is required.

If you experience difficulties in installing the software, please talk to your IT Support Team or contact the Ewing Foundation.

Computer/laptop:
When used with a computer, the software can be run directly off the memory stick however we recommend copying it onto the computer and adding the shortcuts to your desktop for each test.

1. Insert the memory stick into a USB socket. If your computer does not automatically open the memory stick, open up your file explorer program (Windows Explorer or Finder) and navigate to the memory stick.

2. Each speech test is stored in a different folder; double click to open the folder for the test you want. In this folder, locate the file shortcut with the same name as the test folder e.g. ‘ABWL - Ewing Foundation for deaf children’ and double click to open. This will open the test in your computer’s default internet browser (no internet connection is required).

Note: when you first connect the digital interface box, you may need to adjust the sound settings to instruct the computer not to use its internal speakers, but instead to route the sound through the SiN Toolkit.

Tablet/smartphone:
Please ensure that you are connected to the internet using a WiFi connection and that your device has a good level of battery charge before you start the installation process.

1. On your device, go to the preferred app store (App Store for Apple or Google Play for Android) and search for ‘iSpring Player’. Click to install this app. There is no need to open the app at this stage.

2. Once the app has finished downloading, open up an internet browser and go to: https://ispri.ng/v8Ny

3. Click on the blue ‘Launch’ button, which will open and run the Manchester Picture Test (MTP) in the iSpring app.

4. Once the software has opened, click the back arrow in the top left hand corner. Click the ‘i’ symbol and select ‘Make Available Offline’. This will download the software onto your device and may take approx. 30-45 mins.

Note for Apple users: please bear in mind that if your device times out and goes to sleep, the download will be paused – you might like to adjust the Auto-Lock in the Display & Brightness Settings to turn it off while you are downloading.

5. Repeat steps 1-3 for each of the other two tests:
   - Go to http://ispri.ng/mZ1g for the Manchester Junior Word List (MJWL)
   - Go to http://ispri.ng/85nk for the AB Short Word List (ABWL)

6. Once you’ve downloaded all of the tests, to open and use any of the tests you simply open the iSpring Player app and select the appropriate test from the Library list.

For all devices, once the software is installed and the toolkit is connected, we recommend setting the device volume to maximum (and adjusting the system volume from the speakers). If possible, set the tone equaliser to neutral.
Detailed instructions on how to set the Toolkit up are on the following pages but this diagram gives you an overview.

The aim is to ensure that the speakers are at ear height and correctly positioned so that the test volume is at 60dBA SPL.

You will need to provide your own device for playing the audio files: most computer, tablet or smartphones would be suitable. Leads/adaptors are included to allow you to connect the Toolkit to a wide range of audio devices.
Setting up the SiN TOOLKIT

Use the diagram on the preceding pages to help with setting up the system.

1. Set up your speaker stands 190cm (74\(\frac{3}{4}\)”) apart. It is important that you use the provided tape measure to ensure accuracy. Bear in mind that the front speaker will need to be near a mains power socket. Extend the first tier of legs only. See Appendix A for details on how to set up the speaker stands if you are unsure.

2. Adjust the speaker stands so they are at the ear level height of the seated child. Use the wind-up height adjust, rather than extending the legs further, as this will leave space to attach the radio aid holder if required and it makes it easier to make small adjustments. The wind-up adjust should be at least 12cm high.

3. Attach the speakers to the tripod mounts. The speaker with the controls will be the front speaker, facing the child. Make sure both speakers and stands are locked and secure.

4. Connect the power cable to the back of the front speaker and plug into a nearby wall socket.

5. Use the long green cable to connect the two speakers together by plugging into the hanging sockets.

   - **Note:** although the hanging sockets are pre-installed, they may occasionally need to be re-connected. This is easy to do but if you have any queries, please contact Connevans Customer Services.

6. Unwind the black phono cable and connect the phono plugs into the back of the front speaker: red plug into red socket, black plug into white socket.

7. Connect the 3.5mm audio jack plug from the phono cable into the 3.5mm socket on the small black digital interface box.

8. Connect the silver USB lead into the square socket on the digital interface box. If you are using a computer, connect the USB plug to the computer. If you are using smartphone or tablet, you will also need to connect the appropriate adaptor to the USB lead before connecting to your device.

9. Making sure the volume control on the front speaker is turned down (to protect your hearing), turn power on and switch front speaker on – a green light will show on the front speaker.

   - Check that the Treble and Bass controls are set to the mid-way marker (see diagram).
   - The rear speaker doesn’t have any controls.

10. Place a chair between the speakers, in-line and facing the front speaker. Make sure that the child’s ear will be 75cm from this speaker.
11. On your device, open the SiN Toolkit software, selecting the test you want to use. Click the ‘start’ button.

12. First you will need to calibrate the system using the front and rear speaker sounds. Select ‘front speaker’ from the SiN Toolkit menu. Using the sound level meter, check that the sound level at the child’s estimated ear height is 60dBA.

13. Select ‘rear speaker’ from the SiN Toolkit menu. Use the Sound Level Meter to check the sound level at the child’s estimated ear height – it should be 60dBA. (If the level isn’t correct, simply move the rear speaker nearer or further away from the chair as necessary).

14. Invite the child to sit on the chair – without moving its position! Using the SiN Toolkit software, carry out your chosen test/s and record the results on a copy of the results sheets provided.

15. Once you’ve finished, turn the power off before disconnecting all of the leads. Repack the contents in the carrying bags.

Using the Radio Aid Adaptor clip (optional)

When you are testing the child’s response with the use of assistive equipment such as a Radio Aid system, the toolkit includes a Radio Aid Adaptor clip to hold the transmitter/microphone in position.

It is important that the transmitter microphone is positioned approximately 25cm from the top of the speaker, representing how a teacher would wear it.

The Adaptor clip is designed to hold all types of radio aid transmitter however it is important to make sure that the microphone ports are not covered by the clip.

If the transmitter has a lapel microphone (eg. fmGenie or Roger inspiro), the transmitter can be hooked onto the speaker stand using its lanyard.
Manchester Picture Test

36 pages of fully-updated illustrations intended for use with children whose vocabulary is not mature enough or whose spoken, signed or written responses are not sufficient to use word lists reliably.

The test consists of six word lists, each containing six target words. Each target word is shown amongst four pictured words on each page, differing in either vowels or consonants, i.e. the test word, two similar words and one distractor.

For example: Van, Flag, Hand, Watch
Flag is the target word. Watch is the distractor.

The test is carried out ideally at 60dBA, without lipreading, and the child is required to point to the picture indicating the monosyllabic target word.

Use the Result Sheet to record the response and score.

A correct response receives a score of 1.

Any other responses score 0.

Add up the score at the end of the list.

A score of 6/6 equals results of 100%, 5/6 equals 85% etc.

This is a whole word response test and answers are either right or wrong, however the errors made can give useful information about which frequency ranges the student is not hearing well.

Manchester Junior Word List

This test is primarily aimed at children with a developmental age of 6 years or older.

It comprises eight lists of ten target monosyllabic words.

Use the Result Sheet to record the response and score.

A correct response receives a score of 1.

Any other responses score 0.

Add up the score at the end of the list.

A score of 10/10 equals results of 100%, 6/10 equals 60% etc.

This is a whole word response test and answers are either right or wrong, however the errors made can give useful information about which frequency ranges the student is not hearing well.

AB Short Word List

This test is primarily used with teenagers and adults – those with a more developed vocabulary.

As with the Manchester Junior Word List, the AB Short Word List comprises lists of ten target consonant-vowel-consonant (CVC) words.

With this test, scores are recorded for each correct phoneme in the target word.

The student is therefore to be encouraged to repeat the word they heard back to the tester, even if they don’t think it is completely right.

Please note that the list numbers refer to the original collection of Arthur Boothroyd word test lists of which there were more. Some of these are now considered to be outdated and are therefore not included.

With both the Manchester Junior Word List and the AB Short Word List, if a student’s score would be adversely affected by unclear speech, a written or signed response may give a more accurate indication of their listening abilities.
**Appendix A: Setting up the speaker stands**

If you’re unfamiliar with speaker stands/tripods, here’s our quick guide!

1. **Hold the stand securely...**
2. **Using your thumb, release (flick out) the top clamp on the leg.**
3. **Extend just the first section of the leg.**
4. **Repeat for all three legs.**
   Note: for a small child/small chair, legs will not need to be extended fully.
5. **Gently pull two of the legs apart, allowing the central brace to slide down fully.**
6. **Twist the collar clockwise to secure.**
7. **Using the handle, wind up the neck of the stand to at least 12cm high.**
8. **Slot the front of the speaker mount into the front of the holder and let the stand take the weight of the speaker...**
9. **Ensure lever is fully closed to lock the speaker in.**
10. **All done! Check the clamps and collars are fastened so the stand is secure.**

**Appendix B: Technical Considerations**

1. **Room size, reverberation and reflection** will have an effect on the test results. Ideally, the Speech in Noise tests should be carried out in the child’s classroom or usual learning environment. However in some situations this will not be possible; in which case the test environment should be noted in the comments section on the results sheet.

2. **Calibration tolerance:** 60dBA +/- 1dB. Also on the calibration menu page, there is an additional facility to demonstrate a 12 second typical classroom simulation (babble) sound, separately from the tests.

3. The **sound level meter** should be used in ‘normal’ mode. If the sound level meter is showing ‘MAX or MIN’ – you have inadvertently pressed the MAX MIN button. Turn off and on again to reset.

Please note: due to the limitations of the length of each word, it is not possible to accurately measure individual words with a sound level meter. The sound level meter is therefore only used for the calibration.

4. **Testing with a Radio Aid:** Given the constraints of the environment that the system is likely to be used in, we recommend adhering to the accepted protocol which is predicated on having the speakers in close proximity to the child. A ‘natural’ output of 75-80dB SPL from the front speaker, would be picked up at that distance by the child’s hearing aid microphones as well as, or in preference to, the signal from the radio aid system, affecting the measurement of the benefit of the radio aid. Placing the radio microphone 25cm below the top of the speaker (which replicates 15cm from the teacher’s mouth), gives a clear 10dB SPL Radio Aid advantage which is sufficient to assess the benefit of the radio aid system.
Troubleshooting & Support
Should you have any questions about how to set up the equipment supplied in this toolkit, please contact Connevans Customer Services.
Technical details are included in Appendix B but for more information about the word or picture tests or about how to interpret the results, please contact your local Ewing Foundation team member.

About Us
The Ewing Foundation is a national charity (est 1952), promoting inclusion and achievement for deaf children through listening and speaking. A team of Audiology & Education specialists support professionals in acquiring the skills and confidence needed to help deaf children use their residual hearing, access technology and develop natural spoken language.

Connevans Limited is a family-run company, established over 50 years ago, and are specialist manufacturers and suppliers of equipment for deaf and hard of hearing people.

The Ewing Foundation and Connevans have a long history of collaboration and jointly designing products. Amongst other things, we have worked together on the development of DC Test leads (to allow baseline measurements from CI processors to be made in a hearing aid testbox), the Baha Listener (to allow someone to listen to and test a BAHA) and the Stetoclip attenuator (for safely listening to hearing aids).