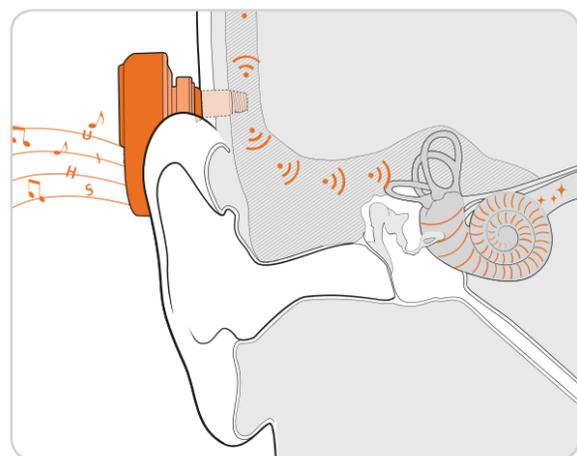


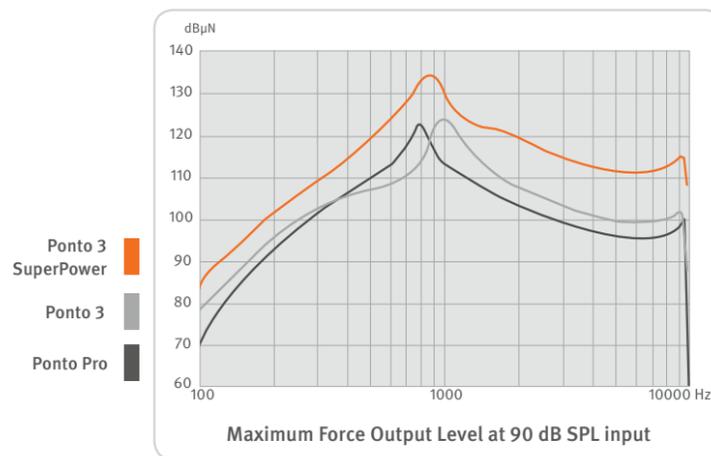
# Ponto Evidence Impact beyond better hearing

## A direct way to easier listening

The novel outcome measures of these studies show that this choice of system and sound processor affects users everyday life in fundamental ways.



The Ponto System uses Direct Sound Transmission with an abutment.



Ponto 3 SuperPower is the most powerful abutment-level bone anchored sound processor in the market.

Choose Sound. Choose Ponto



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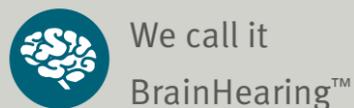


Choose Sound. Choose Ponto



Ground-breaking research<sup>1, 2, 3</sup> shows how the choice of system and sound processor will impact the user's everyday life.

With the Ponto™ System more cognitive resources can be used for **understanding, remembering and enjoying life.**

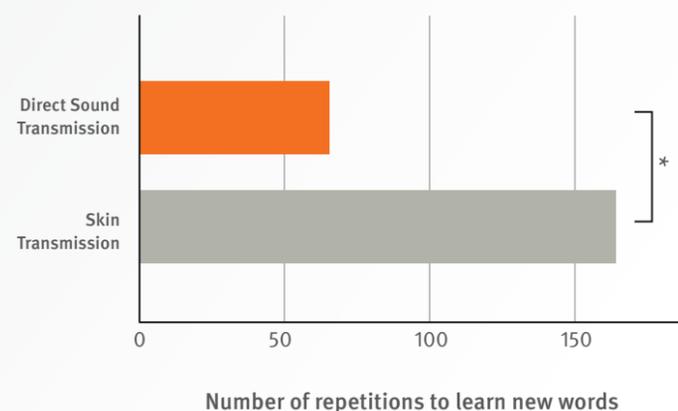


# Learn faster. Remember more. Less effort.



**2.5 x faster learning<sup>1</sup>**

To develop vocabulary, a child should have access to the fullest possible spectrum of speech sounds and the most complete, clearest auditory signal. Results show that children learn new words 2.5 faster using a system with Direct Sound Transmission compared to a solution with Skin Transmission.<sup>1</sup>



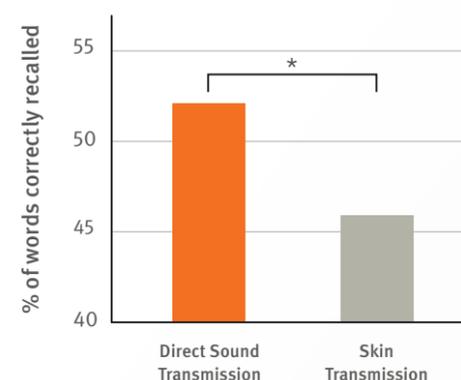
### A test of learning speed<sup>1</sup>

- **Participants**  
17 children (mean age: 11 years old); 16 with conductive hearing loss, 1 SSD.
- **Conditions**  
Ponto on abutment vs. softband, optimally fitted.
- **Task**  
Listen to and learn six new words.



**13% better recall<sup>2</sup>**

In everyday life we need to continuously store words, concepts, sentences in short and long-term memory in order to make sense of speech and elaborate a reply. Direct Sound Transmission provides high quality sound to support the brain's cognitive processes. Fewer resources are needed to process the signal, and more resources can be used for remembering.<sup>2</sup>



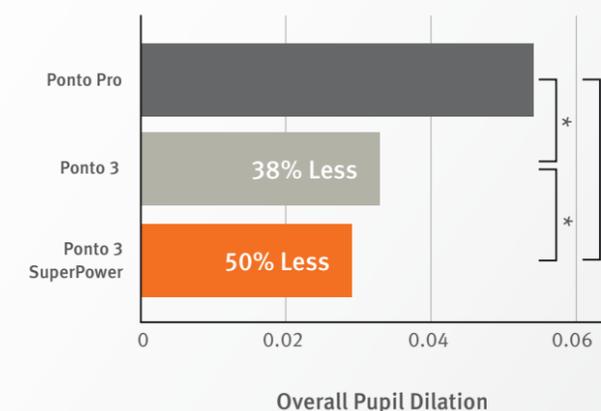
### A memory and recall test<sup>2</sup>

- **Participants**  
16 adults (mean age: 58 years old) with conductive or mixed hearing loss.
- **Conditions**  
Ponto on abutment vs. softband, optimally fitted.
- **Task**  
Recall words after listening to 7 sentences.



**Significantly less effort<sup>3</sup>**

A bone anchored hearing device with a higher maximum output can transmit a larger range of less distorted sound to the brain. Results show that a significant decrease in listening effort can be achieved with the Ponto 3 SuperPower, as indicated by reduced pupil dilation.<sup>3</sup>



### An objective measure of listening effort<sup>3</sup>

- **Participants**  
21 adults (mean age: 59 years old) with conductive or mixed hearing loss.
- **Conditions**  
Sound processors with different maximum output: Ponto Pro, Ponto 3, Ponto 3 SuperPower.
- **Task**  
Listen to and repeat sentences, while an eye-tracking camera monitors pupil dilation, as a measure of listening effort.

1. Pittman, A. Bone conduction amplification in children: Stimulation via a percutaneous abutment vs. a transcutaneous softband. *Ear Hear* (under review).

2. Lunner, T. et al. (2016). Using Speech Recall in Hearing Aid Fitting and Outcome Evaluation Under Ecological Test Conditions. *Ear Hear* 37 Suppl 1: 145S-154S.

3. Bianchi, F. et al. Benefit of higher maximum force output on listening effort in bone-anchored hearing system users: a pupillometry study. *Ear Hear* (in press).

Depending on patient indication the perceived benefit may vary.