



Experiences with and Wide Application of SoundRecover, Non-linear Frequency Compression -

by Dr. Natasha Dewald, Au.D.

Being an Audiologist for 15 years, I have worked with all types of amplification, from analog to hard-wired cross aids to digital technology. I have not seen such positive results with any other technology than I have experienced and measured with the Phonak Audéo YES with SoundRecover. Although a common assumption is that both open fittings and frequency lowering are best for a sloping configuration with better thresholds in the lower frequencies, I have fit the Audéo YES with SoundRecover to clients with all hearing loss configurations with great success.

My first fitting was with Jerry, a 70 year old experienced wearer who had been wearing Phonak Perseo CIC, bilaterally. The configuration of his sensorineural loss did fit the typical profile: normal hearing at 250 Hz, sloping to 70 dB HL at 2k and dropping to 105 dB HL at 4k Hz, bilaterally. His unaided word recognition scores were 32% in his right and 36% in his left ear, both presented at 65 dB HL but recorded monaurally. He was then fit with Audéo YES V using standard receivers with tulip domes, set at experience level 4. Although Jerry enjoyed better hearing, he wanted better performance in noise, so he upgraded to Audéo YES IX. Functional word recognition testing was 84% at 45 dB HL. (The final SoundRecover settings: 2.6 kHz cutoff frequency with 1.8:1 compression ratio.)

The second fitting was with Ruth, age 87. She is also an experienced binaural CIC wearer with a sloping sensorineural loss: 30 dB HL at 250 Hz, sloping to 70 dB at 2k and 85 dB HL at 4k Hz, bilaterally. She suffers from poor word discrimination: 44% in the right and 48% in the left ear at 70 dB HL. She was fit first with Naída, but due to cosmetic issues she switched to Audéo YES which had just been released. He was fit with Audéo YES V with power receivers and cShells. Because she was an experienced wearer, the experience level was set to level 4. Live Speech Mapping matched targets. Her functional word recognition results were 90% at 50 dB HL post fitting. (SoundRecover setting: 3.0 kHz cutoff frequency with 2.0:1 compression ratio.)

Initial success with the Audéo YES was so impressive; I wanted to try this technology with other hearing loss configurations. Lucy, age 88, has a gradual sloping sensorineural loss, 45 dB HL at 250 Hz, sloping to 70 dB HL at 4 kHz, but she has only been wearing one analog aid for the past several years. Her word recognition scores were 55% at 80 dB HL, bilaterally. She was fit with Audéo YES III with power receivers and custom xShells. Her aided word discrimination scores were 80% at 45 dB HL (SoundRecover settings: 4.1 kHz cutoff frequency with a 2.5:1 compression ratio). From this case, my suspicions were confirmed, that Audéo YES with Sound Recover has the potential to work with many different shapes of losses.



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James, age 75, tested with good word recognition scores has been an open fit wearer for the past 4 years, but he was very skeptical about hearings aids living up to his expectations. His thresholds are normal in the low frequencies (25 dB HL in his right ear and 15 dB HL in his left ear at 250 Hz), sloping to moderate to severe in the high frequencies (85 dB HL in the right and 65 dB HL in the left ear at 4 kHz), with word recognition scores of 80% in the right and 90% in the left ear. He was fit with Audéo YES III with standard receivers and domes. His functional word recognition testing was 95% at 45 dB HL, and for interest sake, I took off his left aid, put masking noise into his left ear and tested his word recognition for his right ear alone, and the results were 100% at 45 dB HL. (SoundRecover settings: 4.5 kHz cutoff frequency with a 2.8:1 compression ratio in the right and 3.7 kHz cutoff frequency with 2.6:1 compression ratio in the left ear.) Although we were both impressed with these great immediate results, what I found most rewarding was his report back after his first week. He stated that not only were his conversations with his wife greatly improved, he was also hearing wonderful sounds like birds and his car signal indicator again. He stated this technology has not only restored his faith in hearing aids, they greatly exceeded his expectations...and then he gave me a big hug!

The success stories continue with Reuben, age 91, who is also an experienced wearer of open fit instruments. His hearing loss configuration is mild sloping to moderately severe, bilaterally (40 dB HL at 250 Hz, sloping to 70 dB HL at 4 kHz). Although his pure tone thresholds were symmetrical, his word recognition scores were not. He scored 85% in the right and 65% in the left ear, presented monaurally at 70 dB HL. He was fit with Audéo YES V with standard receivers and domes. His aided functional word recognition score was 95% at 50 dB HL (SoundRecover settings: 4.5 kHz cutoff frequency with 2.7:1 compression ratio, bilaterally).

The next person I fit was a new, first-time wearer named Phillip, age 73. His case is interesting not because of the configuration of his loss, but because of his limited word recognition scores. He has a fairly mild hearing loss, 25 dB HL at 250 Hz sloping to 55 dB HL at 4 kHz, bilaterally. His word recognition scores were 85% in the right and 75% in the left ear, when presented at 65 dB HL, monaurally. He was fit with Audéo YES III using standard receivers and domes. Due to his inexperience with amplification, his experience level was set to level 2. However, he scored 90% at 50 dB HL on his aided functional word recognition test on the day of his fitting. (SoundRecover settings: 4.5 kHz cutoff frequency with 2.8:1 compression ratio AD and 3.7 kHz cutoff frequency with 2.6:1 compression ratio AS.) Three weeks post fitting, he scored 100% on his aided word recognition test.

Although she was not fit with Audéo YES, I would also like to mention a special case of a Naída user whose story is remarkable! Her name is Naomi, age 77. She has had profound hearing loss for most of her adult life and tried to obtain a cochlear implant last year but was denied due to health reasons.



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Her audiometric thresholds are 60 dB HL at 125 Hz, 80 dB HL at 1 KHz with no responses above 1 kHz in the right ear and 65 dB HL at 125, 100 dB HL at 500 Hz, 105 dB HL at 750 Hz with no responses above 750 Hz. She is primarily a lip reader. Her unaided word recognition scores were 0% at 100 dB in the right and 105 dB in the left ear. She was fit with Naída V UP, binaurally. On the day of the fitting, her aided functional word recognition score was 25% at 55 dB HL (SoundRecover settings: 2.1 kHz cutoff frequency with 1.5:1 compression ratio in both ears). Five weeks post fitting, her aided word recognition score was 40% at 50 dB HL! With lip reading, she then scored 85% at 50 dB HL. (After fine-tuning, final SoundRecover settings: 1.5 KHz cutoff frequency with 1.7:1 compression ratio in the right and 1.8 kHz cutoff frequency with 1.5:1 compression ratio in the left ear.) After about 3 weeks, she told me she felt like she heard “normally” in a restaurant. Despite word recognition scores of 40% this technology has given her better clarity than any other technology and with this SoundRecover, she is receiving significant, useful acoustic information to assist her lip reading.

In summary, SoundRecover not only has enhanced the lives of my patients, it has provided this Audiologist with one of the best tools for enriching lives and restoring quality of life...the reason I entered the profession in the first place. Thank you! ■