

INNOVATIVE TECHNOLOGY MEETS INVISIBLE DESIGN: THE RESOUND VERSO IIC

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Abstract

ReSound is launching an Invisible-In-the-Canal (IIC) hearing aid as a part of the Verso family. Aside from the extraordinary cosmetic appeal of these devices, other advantages include reduction of wind noise problems, preserved localization abilities and easier phone use. Candidacy and fitting criteria are also discussed.

INTRODUCTION

As the average age of first-time hearing instrument users decreases, it is of high importance that discreet hearing aids are available. An increase in the number of younger hearing instrument users implies a greater proportion are still active and working. In some working environments, people with hearing loss feel stigmatized (Kochkin, 2010a). An Invisible-In-the-Canal (IIC) hearing instrument that fits entirely inside the ear canal becomes an attractive option for these individuals, as users are not distinguished from non-users and stigmatization from wearing hearing devices is lessened. The new ReSound Verso IIC device is pictured in Figure 1, while Figure 2 shows a Verso IIC device fitted in the ear.



Figure 1. ReSound Verso IIC device for the right ear, compared to a clover.



Figure 2. ReSound Verso IIC hearing instrument fitted in a patient's ear.

BENEFITS BEYOND COSMETIC APPEAL

The ReSound Verso IIC offers advantages beyond cosmetic appeal to users. These include reduced problems arising from wind noise, preserved localization abilities and the possibility of normal phone use.

Wind noise protection

Hearing instrument users who are very active in outdoor sports, biking, or who simply engage in outdoor events often complain about wind noise. This is especially true when the hearing instrument microphones are located in an area where turbulent air flow is likely, as occurs with behind-the-ear (BTE) devices. In fact, wind noise is the second biggest complaint from the MarkeTrak VIII study (Kochkin, 2010b). When wind strikes a surface such as the head, the pinna of the ear, or a hearing instrument, turbulence is created (Dillon et al., 1999). The deeper a custom device is placed in the ear canal, the more shielded it is from wind noise turbulence by the anatomical features of the ear structures. Therefore, there will be practically no wind noise in deeply fitted CIC and IIC devices.

ReSound



rediscover hearing

Better localization

Another advantage afforded by deep placement of the hearing instrument microphone in the ear canal is the maintenance of localization cues for the user. Localization is the ability to determine the location of sound sources in the listening environment. The advantageous placement of the microphone deep in the ear canal permits the individual to benefit from high-frequency pinna effects that enhance front-back localization abilities (Griffing and Preves, 1976; Chung et al., 2008; Van den Bogaert et al., 2008, 2011). The ability to localize sounds in the environment provides for a natural and undistorted auditory experience, as the listener can place sounds in their correct locations in the environment. This affords a true representation of the auditory environment and the sound sources around the listener.

Easier phone use

Using the phone can be frustrating for hearing instrument users. One complication for phone use is holding the phone receiver comfortably relative to the hearing instrument microphone. For hearing instruments with the microphone behind the ear, the user must wave the phone receiver around above their ear in order to find the “sweet spot” where they can hear the caller. With custom instruments, the user can hold the telephone receiver in a more natural position at the ear canal, but may experience discomfort if it is pressed against the device. Perhaps the most serious obstacle to successful phone usage for hearing instrument wearers is feedback when the phone receiver is brought near the hearing instrument. Recommendations to avoid feedback on the phone vary from holding the phone receiver at an angle away from the hearing instrument, using a special program for the phone, putting the phone on speaker, or simply removing the hearing instruments when using the phone. With a deeply fitted IIC device, many users are able to use and hold the phone normally. This allows phone use with hearing instruments to be very discreet as well.

FITTING PATIENTS WITH THE VERSO IIC

The ReSound Verso IIC is available in both the 9 and 7 product families, as VO910-C and VO710-C, respectively. Due to its exceptionally small size, it uses a 10A battery and does not have a program button or volume control. The Verso IIC features Surround Sound

by ReSound, which is ReSound’s signature sound processing philosophy which models, cleans, balances and stabilizes the sound. Surround Sound by ReSound technologies include WARP processing, DFS Ultra II, NoiseTracker II and Environmental Optimizer II. Environmental Optimizer II is available in the Verso 910-C, and contains both gain and noise reduction adjustments per environment. This feature enables the devices to automatically optimize gain and noise reduction settings based on the listening environment, which lessens the need for a volume control or program button in many cases. For example, the gain and noise reduction settings will automatically and seamlessly change when the listener is in a quiet environment as compared to a loud, noisy environment. Environmental Optimizer, available in the Verso 710-C, contains automatic gain adjustments per environment, also decreasing the need for specific programs and manual volume adjustments by the user.

Mild to severe hearing losses can be fitted with the Verso IIC device, as shown in Figure 3. Good candidates are individuals who highly value the cosmetic appeal of an invisible in-the-ear device. In particular, first-time users and previous users of completely-in-the-canal (CIC) devices or other custom hearing instruments may be most successful. Characteristics of individuals who may not be as satisfied with the IIC device include those who prefer open fit devices, individuals with manual dexterity issues, or those with ear canal considerations such as the presence of bony growths, external ear infections or collapsing canals.

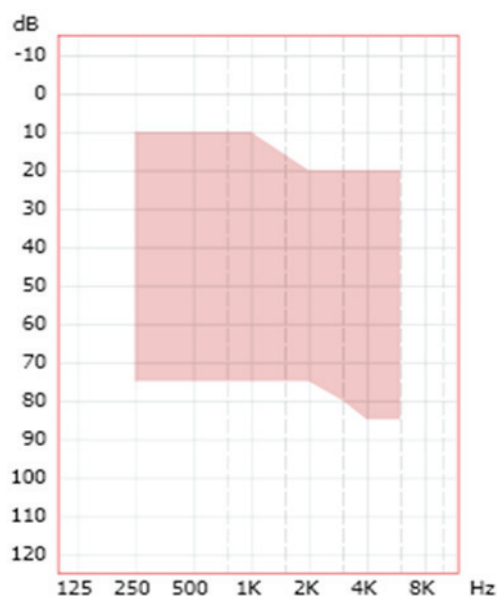


Figure 3. Fitting range for the Verso IIC hearing instrument.

No special or excessively deep earmold impression is required to fit patients with the Verso IIC device. If the otoblock is positioned just beyond the second bend of the ear canal, as is explained in detail in the fitting guide, the impression will be sufficient. The ReSound Impression Key is used to evaluate if the impression is adequate in dimensions for constructing the device.

SUMMARY

With the launch of the ReSound Verso product families, an IIC device is introduced. Benefits of this device include cosmetic appeal when worn in the ear, protection from wind noise, preservation of localization abilities and improved ease of phone use. The Verso IIC is recommended most for new users and previous users of CIC devices or other custom hearing instruments who desire the most cosmetically appealing, discreet hearing instrument design.

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