ReSound Tinnitus Management – An Overview

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Learning Outcomes

• Learning outcomes for the Pro module
  • Describe the end user benefits of using the tinnitus features offered by ReSound
  • List the features available within the app
  • Navigate through the ReSound Relief App and Tinnitus Sound Generator within the ReSound Relief App with specific detail
Tinnitus Sound Generator: Overview

Feature Overview
- Flexible sound therapy tools
- Relief app & TSG can be customized for the user's preferences
- Relief app for user-controlled sound therapy
- TSG Integration with ReSound's Smart 3D app

End-User Benefit
- Helps in Tinnitus management
- Reduction in tinnitus perception
- Success
- Is specific to the user's needs
- Personalisation
- Control
- Ownership of tinnitus management
- Personalised
- Control
- Ability for users to have control of their tinnitus management

Background Knowledge
Tinnitus: Background Knowledge

- Tinnitus is the perception of sound, even where there is no actual external sound present.
- Often heard as ringing, buzzing or humming, but can manifest in many ways.
- Approximately 80% of people with hearing loss also have tinnitus.
- Can be innocuous or problematic.
- Affected by many factors, including stress & fatigue.
Sound Therapy

- Tinnitus perception and degree of irritation are not necessarily correlated.

- Can cause anxiety and depression
  - Can lead to secondary problems

- Treating problematic tinnitus is most successful when focused on managing reaction to tinnitus

- Hearing healthcare professionals need to play a key role in tinnitus management

- Have a good understanding of all sound therapy tools available
Tinnitus: Background Knowledge

- Tinnitus can sometimes require further medical investigation
- Audiogram should always be performed, and otoacoustic emissions where available
- Unilateral or pulsating tinnitus should be investigated by an Ear, Nose & Throat Specialist or a Neurologist.

Sound Therapy

- Mechanism for tinnitus still not fully understood
- For many, hearing aids can be a valuable component of tinnitus management
- Sometimes hearing aids are enough
- In other cases, a tinnitus sound generator (TSG) or sound therapy apps can be of assistance
Sound Therapy

- The purpose of sound therapy is to provide sound to reduce the perception of tinnitus.

- A tinnitus masker should be set at a level equal to, or lower than, the perceived level of tinnitus.

- Thus not completely masking perceived tinnitus.

- Total masking can be used as needed for short period of times. This should not be the standard setting.

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- Overall the purpose of sound therapy is:
  - Distraction
  - Habituation
  - Relief
ReSound Relief App

- App that provides sound therapy, and engaging exercises to assist in tinnitus management
  - 4 Categories
- Interactive, multisensory and customisable
- Available on Android and Apple phones
- Free to download
- Supported by recognized associations
ReSound Relief App

• Direct to hearing aid streaming capabilities via MFi and Phone Clip +

• The app provides the user with personalized control over their tinnitus management

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• App is user friendly – easy access to a variety of features

• Contains important information about tinnitus and sound therapy, including additional professional references
ReSound Relief App – Play a Soundscape

- Simply tap the bubble to start the soundscape

ReSound Relief App – Creating a soundscape
ReSound Relief App – Playbar & Edit a Soundscape

- A tactile gamified exercise/distraction
- Does not keep score or time
- Tap the bubble to pop it!

ReSound Relief App – Multisensory, Popping Bubbles
ReSound Relief App – Main Menu Bar

ReSound Relief App - Relax

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ReSound Relief App – My Plan

Screening Tool

Welcome to My Plan
My Plan is a customized plan that will guide you to better understand your tinnitus week by week. Using the information and the knowledge to help you manage your tinnitus, Please note this feature is still under development.

About your tinnitus
In order to create a perfect plan to manage your tinnitus, please answer the following questions:

Does your tinnitus make it difficult to relax?

Never
Sometimes
Always

Does your tinnitus make it difficult to concentrate and/or focus?

Never
Sometimes
Always

Type of tinnitus
Please select the sound which resembles your tinnitus the most

A
B
C
D

None of the above
ReSound Relief App – My Relief
Customized Plan/Tracks Progress

Tinnitus Sound Generator: Smart Fit
Tinnitus Sound Generator: Smart Fit Fitting Software

• Volume of the Tinnitus Sound generator is set with the volume bar
• The level given is in dB SPL
• Recommended level is the same or softer than tinnitus perception.

Tinnitus Sound Generator: How does it work?
Tinnitus Sound Generator: How does it work?

- Volume of the Tinnitus Sound generator is set with the volume bar
- The level given is in dB SPL
- Recommended level is the same or softer than tinnitus perception.
- Threshold of Audibility - 3 Steps
  - Find threshold of whitenoise
  - Find MML (lowest level of effective total masking)
  - Set volume slider 5-10dB above threshold

Tinnitus Sound Generator: How does it work?

- What type of sound is played is determined by Sound Preset or Range
- White Noise is default (a change to the Range or Volume will result in a Custom label)
- Settings chosen should depend upon user preference.
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Tinnitus Sound Generator: How does it work?

- Ear to ear synchronization is applicable to amplitude modulation
- Synchronizes the modulation cycle between the two devices

Tinnitus Sound Generator: How does it work?

- When off, the volume control on the hearing aid, remote or in the Smart 3D app has no influence on the TSG
- When on, the volume control on the hearing aid, remote or in the Smart 3D app will alter the level of the TSG and not sound from the hearing instrument microphone
Tinnitus Sound Generator: How does it work?

- Environmental steering changes the level of the TSG depending on the environment the hearing aid is in.
- Environmental steering can be combined with volume control so that the volume control can be used to override environmental steering.

![Diagram of Tinnitus Sound Generator: Environmental Steering](image)

Tinnitus Sound Generator: Environmental Steering

![Graph showing level of generated sound in different noise conditions](image)
Tinnitus Sound Generator: Environmental Steering

- If HI microphone is off, where the TSG is active, only the TSG will be played through the hearing aid (TSG Only program)
- Auditory stimulation often key in minimizing tinnitus perception, so a combination program (HI + TSG) can be beneficial for some.
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Tinnitus Sound Generator: How does it work?

- Models the ebb and flow of water-based sounds
- Each Nature Sound mimics its natural environmental modulation characteristics
- Must be the same option in both ears to appear in Smart 3D app

Tinnitus Sound Generator: Advanced Settings

- Some frequency control over Nature Sounds
- Advanced settings provide a low, mid and high frequency filters to shape the Nature Sound to user preferences
Learning Outcomes

• End user benefit associated with the Relief app and TSG

• Highlighted the features of the ReSound Relief App and the Tinnitus Sound Generator within the ReSound fitting software

• Navigated through the ReSound Relief app and Tinnitus Sound Generator within the ReSound Smart Fit fitting software

• Described appropriate volume level setting for TSG
Thank you.
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