What to do About Noise?
The features and benefits of ReSound directionality and noise reduction

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Learning Objectives:

Participants will be able to identify directional and noise reduction options within Smart Fit software

Participants will be able to explain differences in ReSound directional and noise reduction options

Participants will be able to demonstrate uses of ReSound wireless accessories for assisting with hearing in noise
Binaural Directionality III

The microphone configuration selected allows a hearing aid user to hear around them while providing equal signal-to-noise ratio benefit to hearing in a directional beam.
A new directional system

Binaural Directionality II

What to do About Noise?

These three case studies illustrate patients’ issues with noise and effective ReSound solutions.

Mrs. Bea  Mr. Emm  Ms. Tee
Mrs. Bea

55-year old office manager for busy chiropractic office, likes to attend grandchildren’s soccer games, has season tickets at the local theatre.

First time user, word recognition=76% in both ears.

ReSound LiNX 3D 9 61s were recommended due to needs for work, family, spectating, theatre.

Patient chose to purchase LiNX 3D 5 61 RIEs, reportedly due to cost, with little optimism that 9 level would be better.

Fit with an All-Around program, with Wind Guard enabled (set at “on”).

Mrs. Bea: 3-week follow-up visit

At work, she doesn't always hear the patient behind the counter very well, especially when the printer is running.

Even when it is quiet at the front desk, she feels like she often misidentifies where a voice is coming from and sometimes doesn't detect a co-worker behind her.

Is bothered by wind at soccer games.

Has trouble understanding dialogue at the theater.
Questions for Mrs. Bea

What is your office arrangement?
“I sit where the patient is ahead of me on my right and the printer is on my left on the counter.”

What adjustments have you tried at sporting events?
“I turn the aids down.”

Do you use the Smart 3D app?
“Yes! That's how I turned the volume down, and I also used it at the theatre to adjust bass, mid, and treble, although it didn’t help enough with understanding the words.”

Is your theater looped?
“Yes, and the theater said to ask you how to use my telecoil.”
How can Smart Fit help?

Change Natural Directionality II to Focus Ear on left and Monitor Ear on right.

Suggest upgrade to 9 for Binaural Directionality III with Spatial Sense, for localization in quiet and better awareness of sounds in all directions.

Point out that Wind Guard would have more options in 9 vs 5 technology.

Let’s get started!
Let’s get started!

Beyond Smart Fit

Demo Wind Noise Reduction features in Smart 3D App.
What upgrade would she need?
Other suggestions?
Quick buttons!
Quick buttons defined

Quick button values and handles per program:

<table>
<thead>
<tr>
<th>Environment</th>
<th>Quick button</th>
<th>Treble</th>
<th>Mid</th>
<th>Bass</th>
<th>Noise</th>
<th>Speech</th>
<th>Wind</th>
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<tbody>
<tr>
<td>All Around</td>
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<td>o Strong</td>
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<tr>
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<tr>
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Treibers/bass handles are used in all price points. Noise/Speech/Wind only in Top.
Noise/Speech/Wind usage in Quick buttons (see Sound Enhancer slides for more):
- Available with default settings
- Available in manual programs per feature if:
  - Noise: Noise Tracker II set to Per Environment
  - Speech: Directionality set to adaptive (Autoscope or SoftSwitching)
  - Wind: Windguard enabled

Beyond Smart Fit

Suggest using Loop system known to be offered at local theatre.

What would she need to do to make this happen?

Telecoil for loop systems.
Input for FM receiver.
3.5 mm auxiliary input jack.
Improves signal-to-noise ratio.
Drop detection.
Range of up to 80 feet.
Directional mic.
Doubles as omni tabletop/conference mic.
Mute function.
Beyond Smart Fit

Improves signal-to-noise ratio.
Drop detection.
Range of up to 80 feet.
Directional mic.
Mute function.

Mr. Emm

Retired systems analyst.

Poor word recognition: 32% in right, 40% in left.

First time user.

Fit with LiNX 3D 962 RIEs.

Has a smartphone.

Has an iPad.
Mr. Emm: 2-week follow-up visit

Can’t understand his soft-spoken wife in the quiet living room, or in the car.

Reports when they are in a restaurant her voice gets even less clear.

Can’t understand conversation with his adult son in a restaurant.

Declining vision and dexterity.
• Has stopped driving longer car trips.
• Results in feeling isolated from family.

Questions for Mr. Emm:
Answers from Mr. Emm:

What kind of phone do you have?
“I don’t know, my son said it was a smartphone when he handed it down to me.”

When do you use your phone?
“Ummm… to make calls…”

Android Smart 3D app compatibility

- Samsung Galaxy S8
- Samsung Galaxy S7
- Samsung Galaxy S7 Edge
- Samsung Galaxy S6
- Samsung Galaxy S6 Edge
- Samsung Galaxy S5
- Samsung Galaxy S5 Mini
- Samsung Galaxy S4
- Samsung Galaxy Note 3 Neo
- Samsung Galaxy Note 4
- Samsung Galaxy Note 5
- DORO 8030
- Google Pixel XL
- HTC One M8
- HTC One M9
- HTC 10
- Huawei Mate 8
- Huawei P9
- LG G3
- LG G5
- LG V20
- Sony Xperia Z3

www.resound.com/ compatibility
Answers from Mr. Emm:

Tell me more about hearing your wife in the living room, car and restaurant situations.

“Her voice is so soft, I can’t even understand her in our living room when nothing else is going on.”

“I drive her to voice therapy every Tuesday, she turns and looks out her window when she has something to say. If we stop to eat, the restaurant noise drowns out her voice.”

What kind of voice does your son have?

“He has a strong voice but our favorite lunch place is really noisy and his voice seems to get ‘muddy’ sounding.”

“When we play games, look at pictures, do email… my son says we can do a thing where we can talk and see each other on the screen but we haven’t tried it yet.”

When do you use your iPad?

How can Smart Fit help?
Spectral subtraction of noise is utilized in Noise Tracker II™

Signal and Noise

Noise estimate

Clean Signal

How can Smart Fit help?

To adjust noise in restaurant, without reducing too much sound overall, Noise Tracker II per environment, speech in noise handles.

Increase Directional Mix in software, to increase directional benefit.
Beyond Smart Fit

Micro or Multi Mic for signal to noise ratio (wife/car noise) improvement while driving.

Has an iPad he can operate.
Has poor word recognition and needs visual cues.
Has limited family time and feels isolated.

… FaceTime!

Limited tactile dexterity and vision.

… Remote Control 2!

Ms. Tee

80 year old, retired nurse.

Shares a house with and cares for her sister.

Their primary activities are watching TV and birdwatching.

Experienced user, fit with LiNX 3D 961s in both ears.
Ms. Tee: Follow-up visit

TV hard to understand.

When she and her sister are out in the yard looking at birds, she often misses what her sister says.

She doesn’t identify the bird calls very well anymore.

Questions for Ms. Tee
Answers from Ms. Tee

Where do you sit when watching TV?

“She has the chair furthest from the TV. My chair is a bit closer, but it’s right by the vent and I have the most trouble when the fan kicks in.”

Where are you and she standing when out in the yard?

“When I move out into the yard, she can’t come as far because of her wheelchair, and the distance makes it difficult. Then when our neighbor is out mowing, it’s impossible!”

Tell me more about the bird sounds you are having trouble with.

“Well I hear the bird sounds better now, with the hearing aids, but I keep thinking they are in one place when they are in another.”

“Oh, and the wind…”

How can Smart Fit help?

Birdwatching program using Spatial Sense (omni).

Increase Noise Tracker II setting.

Increase Wind Guard.
Beyond Smart Fit

Multi or Micro Mic for distance and improving signal to noise ratio in yard.

TV Streamer 2 for living room.

What to do About Noise?

These three case studies illustrate patients' issues with noise and effective ReSound solutions.

Mrs. Bea  Mr. Emm  Ms. Tee
What have we achieved?

- Noise Tracker II per environment.
- Multi Mic for access to induction systems.
- Directional Mix adjustments for more directional benefit.
- Use of Micro or Multi Mic for distance listening and S/N improvement.
- Adjustment of Natural Directionality II.
- Use of Spatial Sense.
- Use of Binaural Directionality III.
- Use of features in Smart 3D App.
- Use of FaceTime via Apple devices.
- Use of RC2 to access wireless streaming.
- Use of TV Streamer2.
- … a variety of options for differing patient needs!

Any questions?

Thank you!