



**Oticon Tinnitus SoundSupport™**

Tinnitus SoundSupport™  
with Genie software

easy setup

**Tinnitus Treatment**  
for Professionals

Genie Sound App

Consulting tools

Patient support

Consulting tools

Kelly A. Stahl, Au.D.  
Manager, Distance Education  
kaa@oticonusa.com

**oticon**  
HEARING CARE

---

---

---

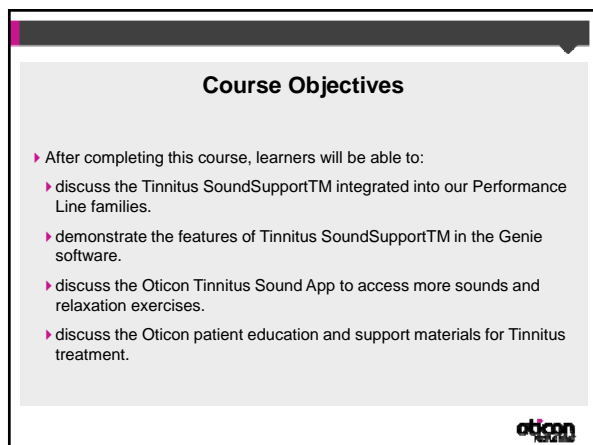
---

---

---

---

---



**Course Objectives**

- ▶ After completing this course, learners will be able to:
- ▶ discuss the Tinnitus SoundSupport™ integrated into our Performance Line families.
- ▶ demonstrate the features of Tinnitus SoundSupport™ in the Genie software.
- ▶ discuss the Oticon Tinnitus Sound App to access more sounds and relaxation exercises.
- ▶ discuss the Oticon patient education and support materials for Tinnitus treatment.

**oticon**  
HEARING CARE

---

---

---

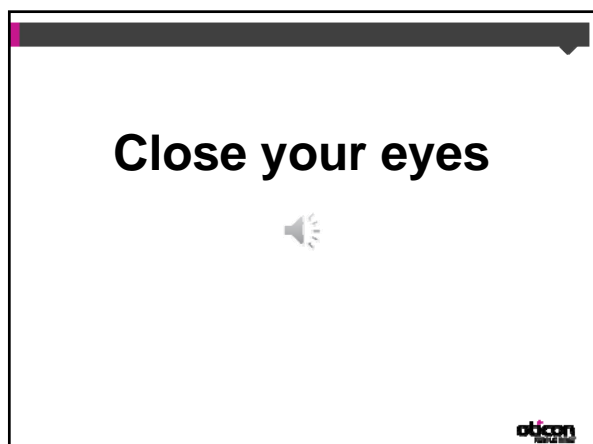
---

---


---

---

---



**Close your eyes**



**oticon**  
HEARING CARE

---

---

---

---

---

---

---

---

## What is tinnitus?

Tinnitus is the **perception of sounds** which are not produced by a source outside of the body.



Tinnitus is a **"phantom" auditory perception** generated somewhere in the auditory pathways.

oticon  
HEARING CARE

---

---

---

---

---

---

---

---

## Who has tinnitus?

Prevalence of tinnitus – general population

- ▶ 10-15% of adult population experience tinnitus<sup>1,2</sup>
- ▶ ~1-2% report their tinnitus to be disabling<sup>2</sup>
- ▶ Prevalence increases with age until ~70



<sup>1</sup> Henry, Dennis & Schecter, 2005  
<sup>2</sup> Koelsch, Tyler & Born, 2011

oticon  
HEARING CARE

---

---

---

---

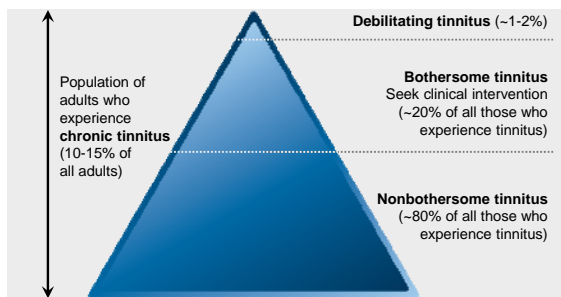
---

---

---

---

## Severity of tinnitus



Dobie 2004

oticon  
HEARING CARE

---

---

---

---

---

---

---

---

### Three primary areas of impact



oticon  
HEARING CARE

---

---

---

---

---

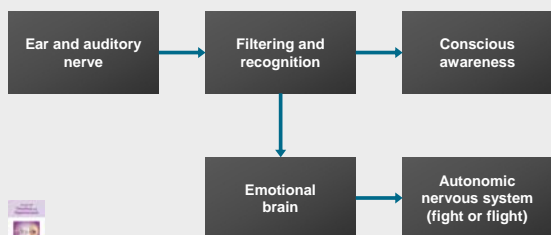
---

---

---

### Physiologic mechanism of tinnitus

Normal system



McKenna, Baguley, McFerran, 2010

oticon  
HEARING CARE

---

---

---

---

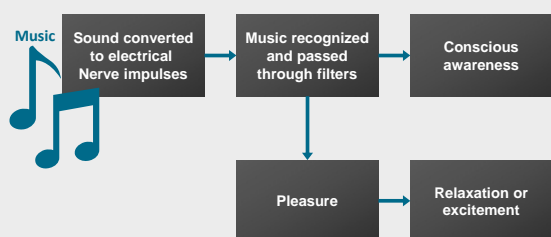
---

---

---

---

### Enjoying music



oticon  
HEARING CARE

---

---

---

---

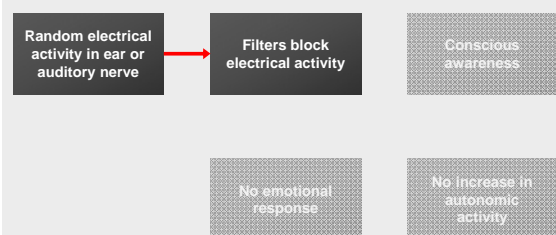
---

---

---

---

### Random electrical activity in the auditory nerve



oticon  
HEARING CARE

---

---

---

---

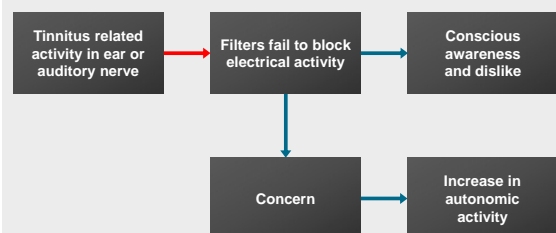
---

---

---

---

### Failure of the filtering mechanism



oticon  
HEARING CARE

---

---

---

---

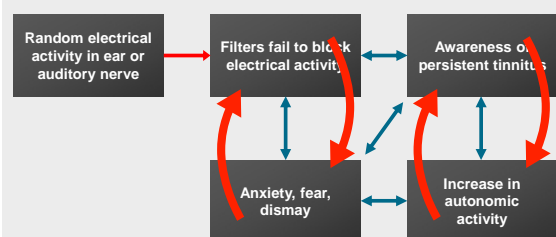
---

---

---

---

### The auditory system producing cycle of distress



oticon  
HEARING CARE

---

---

---

---

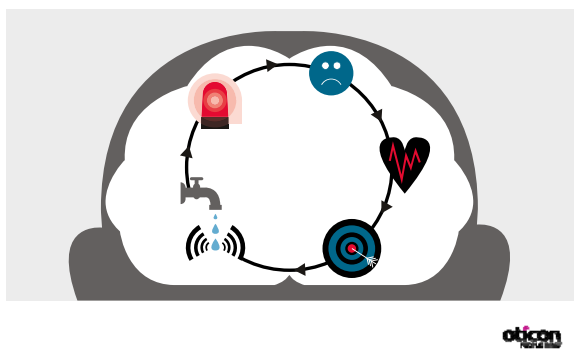
---

---

---

---

### Cycle of distress




---

---

---

---

---

---

---

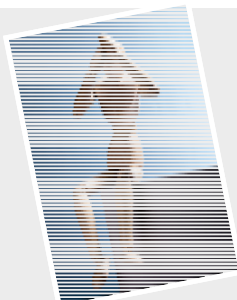
---

### Untreated Tinnitus may lead to

Sleep disorders  
and insomnia

Cognitive effects  
e.g. concentration  
difficulty

Annoyance,  
irritability, anxiety



Depression

Suicide & suicidal  
thoughts

Post-traumatic  
stress disorder

Anger

Kochkin, Tyler & Born, 2011  
Langguth, 2011




---

---

---

---

---

---

---

---

### How is the severity of tinnitus determined?

- ▶ Self-report measures as tinnitus is subjective
  - ▶ Tinnitus Handicap Inventory (THI)
  - ▶ Tinnitus Questionnaire
  - ▶ Tinnitus Reaction Questionnaire
  - ▶ and more
- ▶ Also used to evaluate benefit of treatment




---

---

---

---

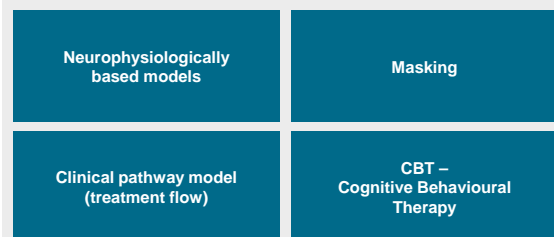
---

---

---

---

### Types of tinnitus treatment



oticon  
HEARING CARE

---

---

---

---

---

---

---

---



oticon  
HEARING CARE

---

---

---

---

---

---

---

---

### Common tinnitus treatment approaches

#### ► Tinnitus treatment approaches

- Tinnitus Retraining Therapy (TRT)
- Progressive Tinnitus Management (PTM)
- Sound Generators in conjunction with counseling or amplification
- Tinnitus Masking

oticon  
HEARING CARE

---

---

---

---

---

---

---

---

### ► Tinnitus Retraining Therapy (TRT)

TRT combines counseling and sound stimulation to help patients habituate to their tinnitus.

A broadband noise at a lower level than the tinnitus is provided to minimize the contrast between the environment and the tinnitus.

Counseling is regarded as central in this treatment and the use of sound is secondary.

2) Jastreboff, P.J. and M.M. Jastreboff, Tinnitus Retraining Therapy (TRT) as a method for treatment of tinnitus and hyperacusis patients. *J Am Acad Audiol*, 2000. 11(3): p. 162-77.



### ► Progressive Tinnitus Management (PTM)

PTM consists of education and counseling to the patient.

Part of PTM is to help the patient develop and implement an individual sound plan that is used to manage the **reactions** to tinnitus.

The role of the tinnitus device is to provide sounds that can be perceived as either:

- **Soothing** (intended to make the patient relax)
- **Background** (intended to minimize the contrast between the environment and the tinnitus)
- **Interesting** (intended to divert the attention away from the tinnitus – e.g. audio books)

PTM has been developed by a multi-disciplinary group within the VA.

4) Henry, J.A., et al., Using therapeutic sound with progressive audiotape tinnitus management. *Trends Amplif*, 2008. 12(3): p. 188-200.



### ► Sound Generators

In the common tinnitus treatment approaches, the audiologist will evaluate and may begin treatment, e.g., counseling and amplification, of the patient before a sound generator is considered.

If a sound generator is included in the patient management, the different tinnitus treatments direct the use of the sound generator, i.e., how to select and tailor the sound signal(s) and the schedule of use for the patient.

1) Holson, J., E. Chisholm, and A. El Refaie, Sound therapy (masking) in the management of tinnitus in adults. *Cochrane Database Syst Rev*, 2012. 11.

2) Jastreboff, P.J. and M.M. Jastreboff, Tinnitus Retraining Therapy (TRT) as a method for treatment of tinnitus and hyperacusis patients. *J Am Acad Audiol*, 2000. 11(3): p. 162-77.



### ► Tinnitus Masking (TM)

TM uses broadband sound to mask the tinnitus completely or partially to provide an *immediate sense of relief* from tinnitus.

Counseling is considered secondary in this approach.

Masking of tinnitus as a primary tinnitus treatment strategy is less used today.

3) Henry, J.A., et al., Outcomes of clinical trial: tinnitus masking versus tinnitus retraining therapy. J Am Acad Audiol, 2006, 17(2): p. 104-32.




---

---

---

---

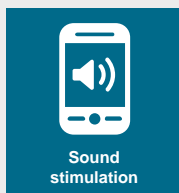
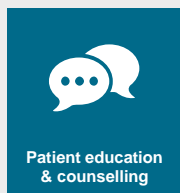
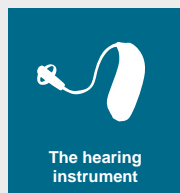
---

---

---

---

### In tinnitus treatment, what is the role of ...?




---

---

---

---

---

---

---

---

### Hearing instruments in tinnitus treatment

► Hearing instruments commonly recommended, as tinnitus and hearing loss co-exist

► Up to 90% of **users experience a reduction in loudness of tinnitus**




---

---

---

---

---

---

---

---



### Introducing A complete Tinnitus package

- ▶ Tinnitus SoundSupport™ integrated into our performance line families
- ▶ Tinnitus treatment support – a step by step guideline
- ▶ Patient education and counselling tools
- ▶ Easy fitting software with tool tips and quick-guide support
- ▶ Oticon Tinnitus Sound App – access to even more sounds and relaxation exercises



oticon  
HEARING CARE

---

---

---

---

---

---

---

---

### Tinnitus SoundSupport™

#### ▶ A Combination Device

Excellent Audiology plus Tinnitus SoundSupport feature based on Inium Sense Platform

#### ▶ Models Include:

Alta2 Pro Ti, Nera2 Pro Ti and Ria2 Pro Ti

#### ▶ Three styles:

miniRITE, RITE and BTE



oticon  
HEARING CARE

---

---

---

---

---

---

---

---

### Core elements in Tinnitus SoundSupport™

- |  |                             |
|--|-----------------------------|
| ✓ Three ocean-like sounds: <u>unique</u> to Oticon | ✓ Automatic Level Steering™ |
| ✓ Four broadband relief sounds                     | ✓ Separate volume control   |
| ✓ Modulation                                       | ✓ Wireless streaming        |
| ✓ Synchronization of relief sounds                 |                             |
| ✓ Adjustment of broadband sounds                   |                             |

oticon  
HEARING CARE

---

---

---

---

---

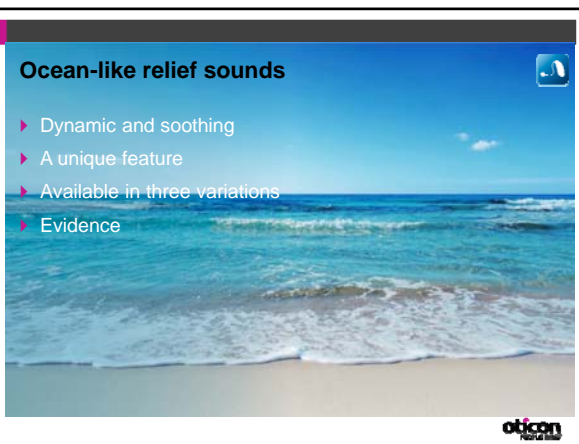
---

---

---

### Ocean-like relief sounds

- ▶ Dynamic and soothing
- ▶ A unique feature
- ▶ Available in three variations
- ▶ Evidence




---

---

---

---

---

---

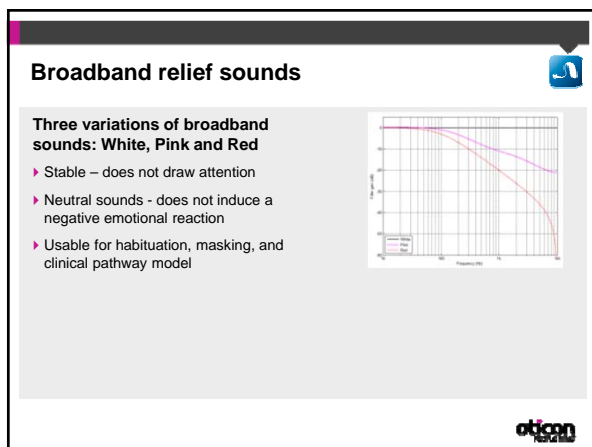
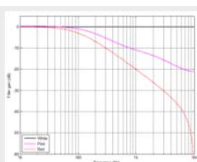
---

---

### Broadband relief sounds

#### Three variations of broadband sounds: White, Pink and Red

- ▶ Stable – does not draw attention
- ▶ Neutral sounds - does not induce a negative emotional reaction
- ▶ Usable for habituation, masking, and clinical pathway model




---

---

---

---

---

---

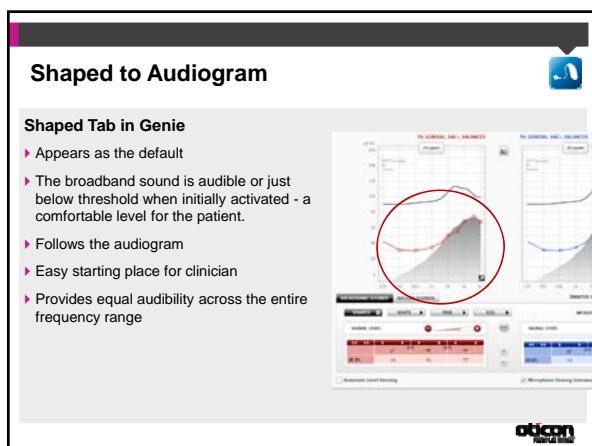
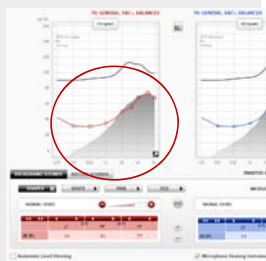
---

---

### Shaped to Audiogram

#### Shaped Tab in Genie

- ▶ Appears as the default
- ▶ The broadband sound is audible or just below threshold when initially activated - a comfortable level for the patient.
- ▶ Follows the audiogram
- ▶ Easy starting place for clinician
- ▶ Provides equal audibility across the entire frequency range




---

---

---

---

---

---

---

---

## Modulation

### 4 Predefined modulated relief sounds:

- Tranquil, Mild, Spirited, Bustling

- ▶ Modulation is a variation in amplitude over time
- ▶ Can add alternative dimensions to meeting patients' needs.
- ▶ Can be applied to any of the broadband sounds



oticon  
HEARING CARE

---

---

---

---

---

---

---

---

## Synchronized relief sounds to both ears

- ▶ Relief sounds can be synchronized to offer the same relief signal to both ears.
- ▶ This ensures that the patient will receive a balanced sound perception from the relief sounds.
- ▶ This is particularly important when sounds are modulated to avoid a sensation of "sea sickness."



oticon  
HEARING CARE

---

---

---

---

---

---

---

---

## Adjustment of broadband sounds via individual frequency bands

- ▶ Tinnitus varies, so shaping of the relief sound is important to meet the patient's unique preferences
- ▶ In Genie, the audiologist can further tailor the signal to meet the patient needs through high-pass and/or low-pass filtering
- ▶ Available for White, Pink, Red and "Shaped to audiogram" broadband sounds.

	LF	675	MF	1875	HF
dB SPL	33		59		95

oticon  
HEARING CARE

---

---

---

---

---

---

---

---

### Automatic Level Steering™



- ▶ Functions like automatic gain control for the selected tinnitus relief sound.
- ▶ Optional feature
- ▶ The sound is automatically reduced when environmental sounds are loud enough to provide relief from the patient's tinnitus – greater than 50 dB SPL, max 10 dB
- ▶ The relief sound returns to its original level when environmental sounds are quieter.



oticon  
HEARING

---

---

---

---

---

---

---

---

### Separate Volume Control



- ▶ The volume of the relief sound can be adjusted independently of the amplification in the instrument
- ▶ The loudness level can be the same for both ears or adjusted independently.
- ▶ The patient can set the Tinnitus SoundSupport level to suit their preference across different situations
- ▶ In programs where TSS is activated, the onboard VC changes the volume for the relief sound. Hearing device microphones are now controlled by a remote or streamer.



oticon  
HEARING

---

---

---

---

---

---

---

---

### Tinnitus Sound App



- ▶ Wireless streaming of additional sounds
- ▶ Allows for streaming of any sound and audio input that the client find helpful - including music
- ▶ Ability to arrange sounds into personal library
- ▶ Available for Apple Iphone, Ipad at launch. Android to follow



oticon  
HEARING

---

---

---

---

---

---

---

---

## Treatment Goals at a Glance

Settings	Goal of tinnitus treatment				
	Habituation	Masking	Soothing	Background	Interesting
<b>Type of sound &amp; options</b>					
Broadband Sound					
White	X	X	X	X	X
Pink	X	X	X	X	X
Red	X	X	X	X	X
Modulation	if preferred by patient	if preferred by patient	if preferred by patient	if preferred by patient	if preferred by patient
Shaping	if preferred by patient	if preferred by patient	if preferred by patient	if preferred by patient	if preferred by patient
<b>Nature-Like Sound</b>					
Ocean 1			X	X	X
Ocean 2			X	X	X
Ocean 3			X	X	X
<b>General settings</b>					
Signal Level	Set at the mixing point	Set to just mask the tinnitus	Set as preferred by patient	Set as preferred by patient	Set as preferred by patient
Automatic Level Steering	Optional	Optional	Optional	Optional	Optional
Binaural VC coordination	No - independent VC control	Optional	Optional	Optional	Optional

oticon  
HEARING CARE

## Fitting Tinnitus SoundSupport in Genie



oticon  
HEARING CARE



oticon  
HEARING CARE

---

---

---

---

---

---

---

---

---

---

---

---




---

---

---

---

---

---

---

---

---

---




---

---

---

---

---

---

---

---

---

---




---

---

---

---

---

---

---

---

---

---









---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---



---

---

---

---

---

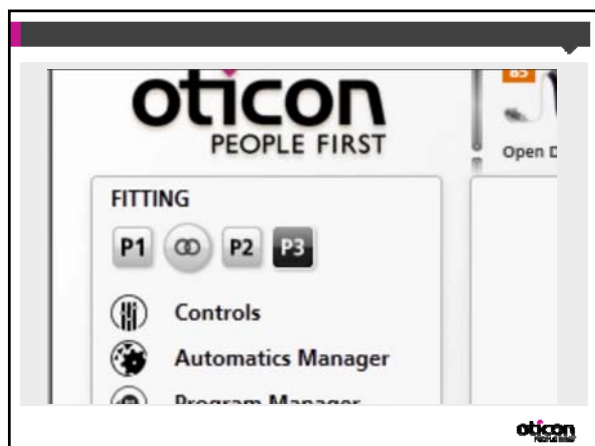
---

---

---








---

---

---

---

---

---

---

---




---

---

---

---

---

---

---

---




---

---

---

---

---

---

---

---




---

---

---

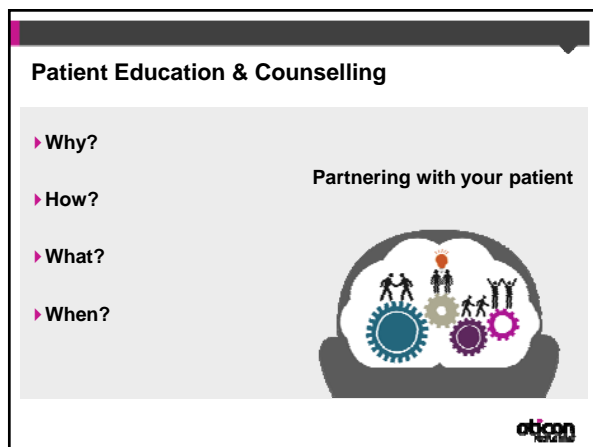
---

---

---

---

---




---

---

---

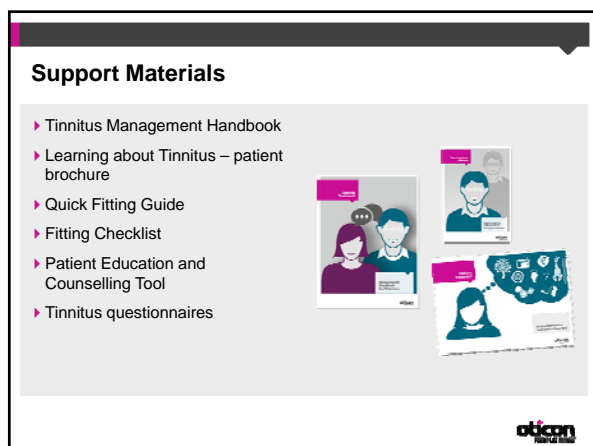
---

---

---

---

---




---

---

---

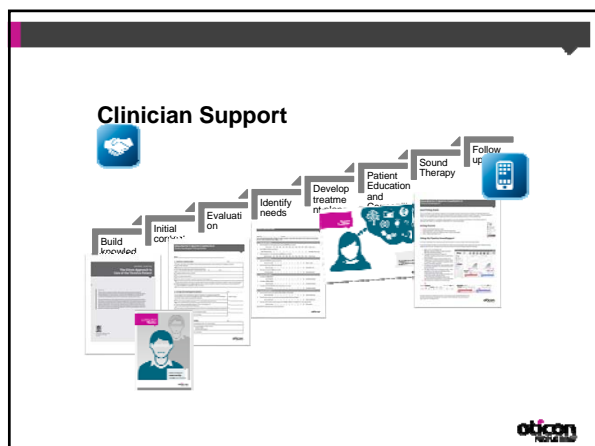
---

---

---

---

---




---

---

---

---

---

---

---

---

### Building Knowledge

- ▶ Clinician Handbook
- ▶ White Paper:  
Oticon's Approach to Care of the Tinnitus Patient

The Oticon logo is in the bottom right corner.

---

---

---

---

---

---

---

---




---

---

---

---

---

---

---

---

### Initial Contact, Evaluation, Identify Needs, and Develop Treatment Plan

- ▶ Patient Handbook
- ▶ Tinnitus Handicap Inventory
- ▶ Fitting Flow Check List

oticon  
HEARING CARE

---

---

---

---

---

---

---

---

### Initial contact: Patient Handbook



oticon  
HEARING CARE

---

---

---

---

---

---

---

---

### Tinnitus Handicap Inventory (THI)

Item	Yes (4)	Sometimes (2)	No (0)
1. Because of your tinnitus, is it difficult for you to concentrate?	<input type="checkbox"/> Yes	<input type="checkbox"/> Sometimes	<input type="checkbox"/> No
2. Does the loudness of your tinnitus make it difficult for you to hear people?	<input type="checkbox"/> Yes	<input type="checkbox"/> Sometimes	<input type="checkbox"/> No
3. Does your tinnitus make you angry?	<input type="checkbox"/> Yes	<input type="checkbox"/> Sometimes	<input type="checkbox"/> No
4. Does your tinnitus make you confused?	<input type="checkbox"/> Yes	<input type="checkbox"/> Sometimes	<input type="checkbox"/> No
5. Because of your tinnitus, are you depressed?	<input type="checkbox"/> Yes	<input type="checkbox"/> Sometimes	<input type="checkbox"/> No
6. Do you complain a great deal about your tinnitus?	<input type="checkbox"/> Yes	<input type="checkbox"/> Sometimes	<input type="checkbox"/> No
7. Because of your tinnitus, do you have trouble falling asleep at night?	<input type="checkbox"/> Yes	<input type="checkbox"/> Sometimes	<input type="checkbox"/> No
8. Do you feel as though you cannot escape from your tinnitus?	<input type="checkbox"/> Yes	<input type="checkbox"/> Sometimes	<input type="checkbox"/> No
9. Does your tinnitus interfere with your ability to enjoy social activities (such as going out to dinner or to the cinema)?	<input type="checkbox"/> Yes	<input type="checkbox"/> Sometimes	<input type="checkbox"/> No
10. Because of your tinnitus, do you feel frustrated?	<input type="checkbox"/> Yes	<input type="checkbox"/> Sometimes	<input type="checkbox"/> No

0-16: Slight or no handicap (Grade 1)  
18-36: Mild handicap (Grade 2)  
38-56: Moderate handicap (Grade 3)  
58-76: Severe handicap (Grade 4)  
78-100: Catastrophic handicap (Grade 5)

oticon  
HEARING CARE

---

---

---

---

---

---

---

---



**Midsize Kit Pro T1, World Pro T1 and Road Pro T1  
Service Instructors\*\* Fitting Checklist**

Name: \_\_\_\_\_

**A. Specimen considerations**

Date: \_\_\_\_\_

- 1) Specimen Status: The Technician Technical Support Group has been advised the specimen is suitable
- 2) Specimen is not contaminated by any other material
- 3) Specimen is not contaminated by any other material
- 4) Specimen is not contaminated by any other material
- 5) Specimen is not contaminated by any other material
- 6) Specimen is not contaminated by any other material
- 7) Specimen is not contaminated by any other material
- 8) Specimen is not contaminated by any other material
- 9) Specimen is not contaminated by any other material
- 10) Specimen is not contaminated by any other material

11) Specimen is not contaminated by any other material

12) Specimen is not contaminated by any other material

13) Specimen is not contaminated by any other material

14) Specimen is not contaminated by any other material

15) Specimen is not contaminated by any other material

16) Specimen is not contaminated by any other material

17) Specimen is not contaminated by any other material

18) Specimen is not contaminated by any other material

19) Specimen is not contaminated by any other material

20) Specimen is not contaminated by any other material

**B. Fitting the hearing instruments**

Date: \_\_\_\_\_

- 1) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 2) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 3) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 4) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 5) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 6) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 7) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 8) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 9) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 10) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements

**C. Test follow-up visit (if needed)**

Date: \_\_\_\_\_

- 1) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 2) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 3) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 4) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 5) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 6) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 7) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 8) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 9) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements
- 10) The Hearing Aid is in the State of the Art and is in compliance with the applicable requirements

**Fitting Check List**

- Suggested appointment flow. Offers recommendations for planning patient visits. Useful guide for those new to InVivo treatment or want to modify their hybrid process.
- Space for charting program set up

**oticon**  
HEARING

---

---

---


---

---

---

# ***Patient Education and Counselling***

► **The Patient and Education Counselling Tool**

A stylized graphic of a person with their arms raised in a 'V' shape, rendered in a dark, blocky style. The person's head is represented by a small circle, and their torso and limbs are thick, rectangular shapes. The entire graphic is in a dark, monochromatic color.

---

---

---

---

---

---

---

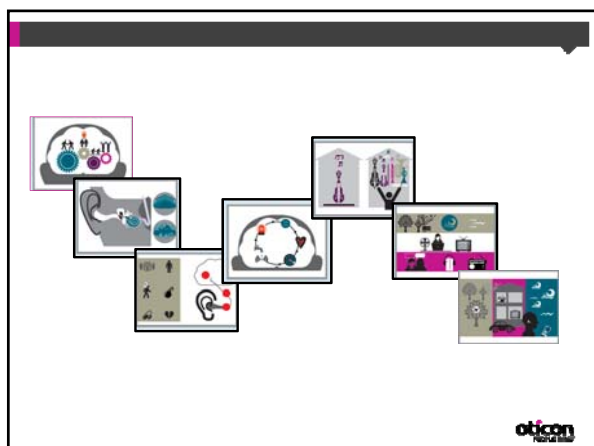
---

---

---

---

---




---

---

---

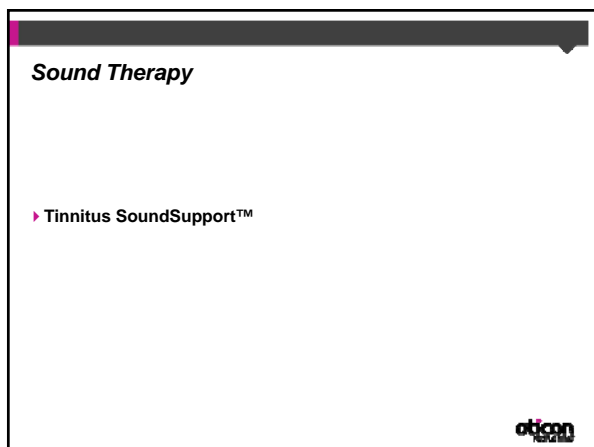
---

---

---

---

---




---

---

---

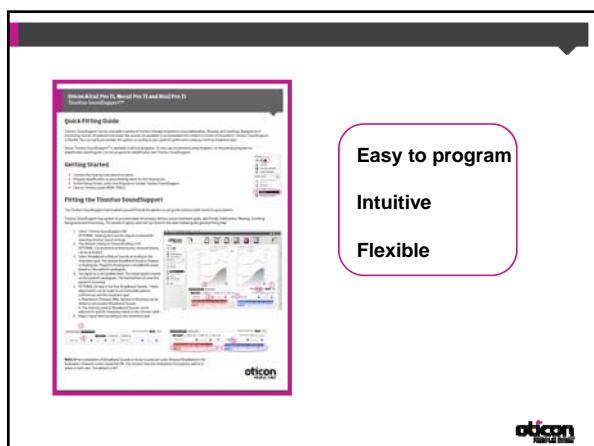
---

---

---

---

---




---

---

---

---

---

---

---

---

**Goal of tinnitus treatment**

Settings	Reduction	Masking	Sound	Background	Processing
<b>Type of sound &amp; options</b>					
Broadband Sound	*	*	*	*	*
Shaped to Audiogram	*	*	*	*	*
White	*	*	*	*	*
Pink	*	*	*	*	*
Red	*	*	*	*	*
Modulation	If preferred by patient		If preferred by patient	If preferred by patient	If preferred by patient
Shaping	If preferred by patient	If preferred by patient	If preferred by patient	If preferred by patient	If preferred by patient
<b>Nature like Sound</b>					
Ocean 1	*		*	*	*
Ocean 2	*		*	*	*
Ocean 3	*		*	*	*
<b>General Settings</b>					
Signal Level	Set at the mixing point	Set to just mask the tinnitus	Set as preferred by patient	Set as preferred by patient	Set as preferred by patient
Automatic Level Steering	Optional	Optional	Optional	Optional	Optional
Binaural VC coordination	No – independent VC control	Optional	Optional	Optional	Optional

**oticon**  
Hearcare

---

---

---

---

---

---

---

---

---

---

## Patient Support

► There is an App Too!

**oticon**  
Hearcare

---

---

---

---

---

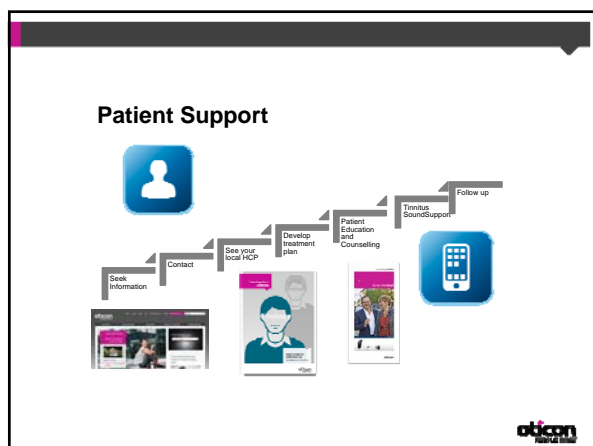
---

---

---

---

---




---

---

---

---

---

---

---

---

---

---

### Oticon Tinnitus Sound App for iPhone

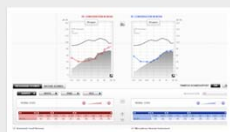
- ▶ Additional relief sounds
- ▶ Opportunity to organize sounds
- ▶ Streaming from own music library
- ▶ Available for free on the App store



oticon  
HEARING AID

### Online learning materials on tinnitus

- ▶ Essential facts of tinnitus. Movie (5 min)
- ▶ Fitting SoundSupport in Genie. E-learning (5 min)
- ▶ Tinnitus training for HCPs. E-learning (10 min)



oticon  
HEARING AID

### Oticon Tinnitus SoundSupport™



Kelly A. Stahl, Au.D.  
Manager, Distance Education  
kaa@oticonusa.com

oticon  
HEARING AID