

## Progressive Tinnitus Management: How-To Workshop

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## Sections

1. Definitions and Background
2. Research Leading to PTM
3. Principles of Tinnitus Management
4. Overview of PTM
5. Level 1 Triage
6. Level 2 Audiologic Evaluation
7. Sound Tolerance Evaluation & Management
8. Level 3 Group Education
9. Level 4 Interdisciplinary Evaluation
10. Level 5 Individualized Support



## 1: Definitions and Background



## What is Tinnitus?

- *Transient ear noise* = unilateral sudden tone with other auditory sensations that decay within about 1 min
  - **NOT TINNITUS**
- *Tinnitus* = ear/head noise lasting >5 min that occurs >once/wk
- *Chronic tinnitus* = continuous ear/head noise that is extended in duration, and persistent over time



### More Definitions

- Neurophysiologic vs. somatic tinnitus
- Subjective vs. objective tinnitus
- Permanent tinnitus
- Recent onset tinnitus
- Delayed onset tinnitus



### Do You Have Tinnitus?

- Everyone has ear noises—not everyone has tinnitus



### There is No Cure for Tinnitus

- No method has been shown to **consistently and safely** reduce or eliminate the sound of tinnitus
- Any claim to reduce or eliminate tinnitus is not credible



### There is No Drug for Tinnitus

- All drugs used for tinnitus are approved to **treat other conditions** such as depression, anxiety, insomnia, epilepsy, etc.



### What **Can** be Done About Tinnitus?

- Tinnitus itself is not the problem—**reactions to tinnitus are the problem**
- Patients can be helped if they learn to **manage their reactions** to tinnitus



### Three Essential Components to Effectively Manage Tinnitus

1. **Education**
  - Ideally teaching self-management skills
2. **Therapeutic sound**
  - Any combination of soothing sound, interesting sound, and background sound
3. **Stress reduction**
  - Relaxation exercises, lifestyle modifications



### Which Methods Are Effective?

- Dozens of methods are used to treat tinnitus
- If the patient benefits, then the method is effective
- Only a handful of methods have an **evidence-basis**, i.e., have been shown to provide more than placebo effects



### Methods That Have an Evidence-basis

- Hearing aids
- Tinnitus Masking
- Tinnitus Retraining Therapy
- Neuromonics Tinnitus Treatment
- Cognitive-Behavioral Therapy
- Progressive Tinnitus Management



Method	1. Education	2. Therapeutic Sound	3. Stress Reduction
Hearing Aids	X	XX	X
Tinnitus Masking	X	XXX	XX
Tinnitus Retraining Therapy	XXX	XXX	X
Neuromonics Tinnitus Treatment	X	XXX	XXX
Cognitive-Behavioral Therapy	XXX	X	XXX
Progressive Tinnitus Management	XXX	XXX	XXX

### Which Method is the Most Effective?

- No evidence proving that any one method is more effective than any other
- Much more research is needed to determine which specific components of intervention are most effective
- In the meantime, use a method that involves **education, therapeutic sound, and stress reduction**



### To provide tinnitus services:

- Become **knowledgeable**
  - Know the methods and how they differ
  - Learn the basic principles
- Determine specific methodology
- Establish yourself as a tinnitus provider



## 2: Research Leading to PTM



### My Experience

- 1987: M.S. (Audiology)
- 1988-1994: lab of Jack Vernon & Mary Meikle
- 1994: Ph.D. (Behavioral Neuroscience)
- 1995: First funded tinnitus grant
- 1997: trained in Tinnitus Retraining Therapy
- 20 funded tinnitus grants to date



### Overall Purpose of Research

- Develop methods of tinnitus management that are **effective, efficient, and implementable**



### Controlled Clinical Studies

- Comparison of masking and TRT (**n=126**)
- Group education using TRT counseling (**n=269**)
- Multi-site study to compare masking, TRT, and "tinnitus education" (**n=149**)
- Development of PTM (**n=221**)
- Adaptation of PTM for telephone-based counseling of TBI patients (**n=36**)



### Three New Studies Underway

- Multi-site controlled study of PTM
  - Memphis VA Medical Center
  - VA Connecticut Healthcare System (West Haven, Connecticut)
- Telephone tinnitus education for patients with TBI – nationwide study
- Clinical trial of transcranial magnetic stimulation (TMS) for relief of tinnitus



### Benefits of Controlled Clinical Studies

- Determine efficacy of interventions under controlled conditions
- Produce defined methodologies to *consistently* perform screening, assessment, and intervention
- Identify essential elements of effective tinnitus management



### Who Have We Learned From?

- Total of **801** research participants in five studies—all Veterans
- **Thousands** of candidates screened
  - Participants must have a **tinnitus problem** warranting the intervention
- Hundreds of participants in three new studies underway—we continue to learn



## 3: Principles of Tinnitus Management



### Principles are Not Methods

- Principles guide methodology
- Methodology can be flexible to meet unique needs of clinics, clinicians, and patients
- *Adhering to principles is more important than specific methods used*

### 13 Principles

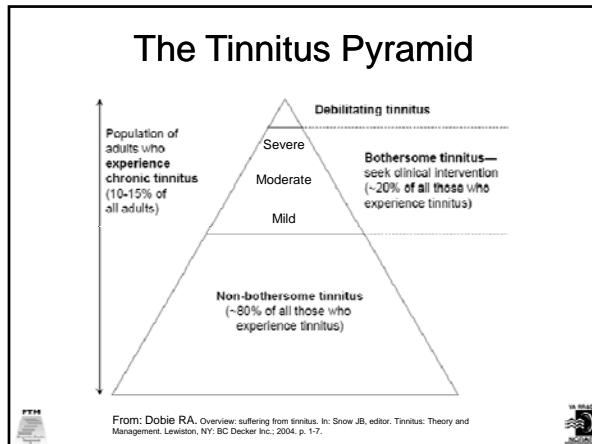
- 1-3: General principles
- 4-7: Principles of tinnitus assessment
- 8-13: Principles of tinnitus intervention

The method of PTM is based on these principles

## General Principles

### 1. *Clinical services for tinnitus should be progressive*

- 10-15% of all adults experience chronic tinnitus
  - Tinnitus is “clinically significant” for only about 20% of those who experience tinnitus



## 2. Use an interdisciplinary approach

- Refer as appropriate
  - Medical examination (otolaryngologist, otologist, neurotologist)
  - Mental health screening
  - Other disciplines
- Mental health services should be provided **routinely** for patients with clinically significant tinnitus

## 3. Clinicians need training in tinnitus management

- Standardized guidelines for tinnitus management do not exist
- Most graduate programs do not provide adequate training
- **The result:** tinnitus services are random and generally insufficient

## Principles of Tinnitus Assessment

## 4. All patients reporting tinnitus need an audiologic evaluation

- Over 90% have hearing loss
  - Essential to evaluate auditory function
- Patients may need hearing aids
  - Hearing aids can be effective for tinnitus
- **Hearing evaluation and hearing aids takes care of many patients who complain of tinnitus**

## 5. Determine if the tinnitus problem is “clinically significant”

- Does tinnitus disrupt at least one important life activity and/or cause emotional reactions, resulting in a **noticeable reduction in quality of life?**
- Decision for patient: Would the benefit from intervention outweigh the cost and effort (i.e., “would the effort would be worth it”)?

## 6. Questionnaires are the best way to determine tinnitus severity

- Using the right combination of questionnaires is critical to properly interpret responses
  - The same combination should be used to assess outcomes of intervention



## Four Types of Tinnitus Questionnaires

1. What are the perceptual attributes of the tinnitus?
2. Does the tinnitus impact quality of life?
3. Is the patient empowered to manage reactions to tinnitus?
4. Does the patient know and understand the pertinent tinnitus information?



## 7. Make sure the tinnitus problem is not a hearing problem

- Many patients blame tinnitus for hearing problems
  - Responses on tinnitus questionnaires can be inflated accordingly
- Assessment needs to differentiate tinnitus problems from hearing problems



Tinnitus and Hearing Survey

	Not at all problem	A little problem	A moderate problem	A big problem	A very big problem
<b>A. Tinnitus</b>					
Over the last week, tinnitus kept me from sleeping.	0	1	2	3	4
Over the last week, tinnitus kept me from concentrating on reading.	0	1	2	3	4
Over the last week, tinnitus kept me from driving.	0	1	2	3	4
Over the last week, I couldn't get my mind off of my tinnitus.	0	1	2	3	4
Total of each column					Sound Total
<b>B. Hearing</b>					
Over the last week, I couldn't understand what others were saying in noisy or crowded places.	0	1	2	3	4
Over the last week, I couldn't understand what people were saying on TV or in movies.	0	1	2	3	4
Over the last week, I couldn't understand people with soft voices.	0	1	2	3	4
Over the last week, I couldn't understand what was being said in group conversations.	0	1	2	3	4
Total of each column					Hearing Total
<b>C. Sound Tolerance</b>					
Over the last week, everyday sounds were too loud for me. <sup>a</sup>	0	1	2	3	4
<i>If you responded 1, 2, 3 or 4 to the statement above:</i>					
Being as a rating with 0 to 10 people would be too loud for me. <sup>b</sup>	0	1	2	3	4

<sup>a</sup> If sounds are too loud for you when wearing hearing aids, please tell your audiologist.



**Bob**

**Tinnitus and Hearing Survey**

	Not at all problem	A little problem	A moderate problem	A big problem	A very big problem
<b>A. Tinnitus</b>					
My tinnitus makes it hard for me to sleep at night.	0	1	2	3	4
My tinnitus makes it hard for me to concentrate when I'm reading.	0	1	2	3	4
My tinnitus makes it hard for me to relax in a quiet room.	0	1	2	3	4
It's hard for me to get my mind off of my tinnitus.	0	1	2	3	4
Total of each column					Sound Total
<b>B. Hearing</b>					
It's hard for me to understand what others are saying in noisy or crowded places.	0	1	2	3	4
It's hard for me to understand what people are saying on TV or in movies.	0	1	2	3	4
It's hard for me to understand people with soft or high pitched voices (other women and children).	0	1	2	3	4
It's hard for me to join in a group conversation because I can't understand what's being said.	0	1	2	3	4
Total of each column					Hearing Total
<b>C. Sound Tolerance</b>					
Are everyday sounds too loud for you? <sup>a</sup>	0	1	2	3	4
<i>If you answered 1, 2, 3 or 4 to the question above:</i>					
Would a class about noises be too loud for you? <sup>b</sup>	0	1	2	3	4

<sup>a</sup> If sounds are too loud for you when wearing hearing aids, please tell your audiologist.



## Principles of Tinnitus Intervention



### *8. Intervention should start with patient education*

- Education empowers patients
  - Enables them to make informed decisions about different forms of therapy
- Requires a structured program of patient education with clear objectives



### *9. Address the problem of low health literacy*

- Nearly one-third of English-speaking adults in U.S. have low health literacy
  - Suffer reduced health outcomes overall
- Make sure all spoken and written health information is easily understood by patients



### *10. Patients are best served if they learn self-efficacy skills*

- Most patients will have tinnitus for a lifetime
- Sound of tinnitus is not the problem—**reactions to the sound** are the problem
- Patients need to learn **self-management skills** to manage reactions to tinnitus



### *11. Patients should learn different methods of using therapeutic sound*

- There are many ways to use sound
- Each method helps some patients—no one method is proven superior
- Patients should be educated about the different ways sound can be used to self-manage reactions to tinnitus



### *12. Patients should learn psychological coping techniques*

- Cognitive-behavioral therapy (CBT) is the leading psychological method of tinnitus management
- All patients with clinically bothersome tinnitus should learn basic CBT skills



### *13. Patient education can be provided effectively by telephone*

- Audiologists and psychologists can provide effective telephone-based tinnitus education
- Reduces travel burden on patients while still meeting their needs
- Efficient method of intervention

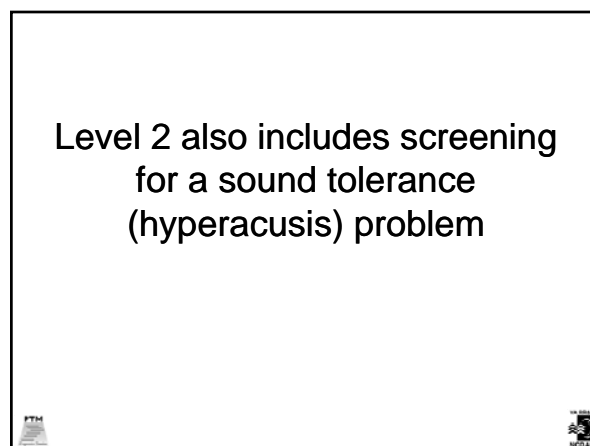
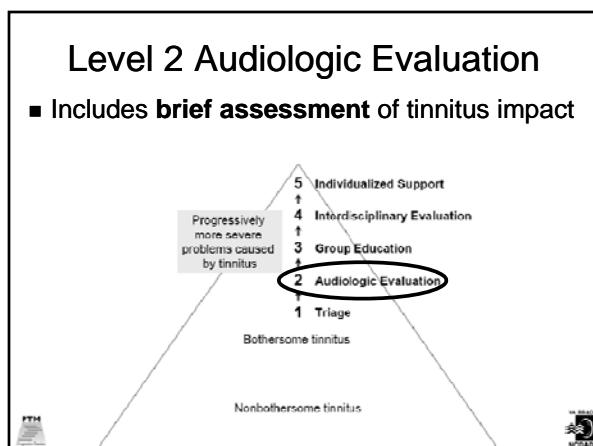
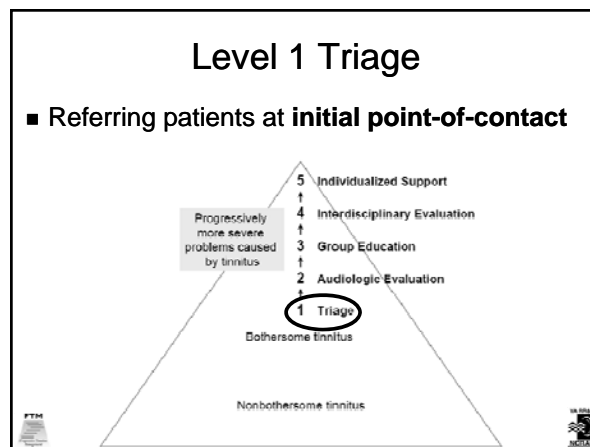
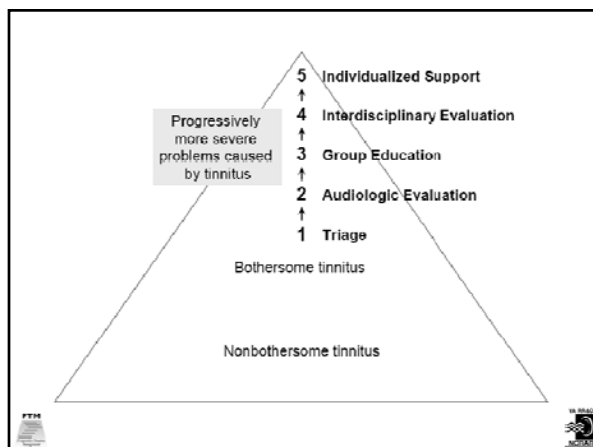


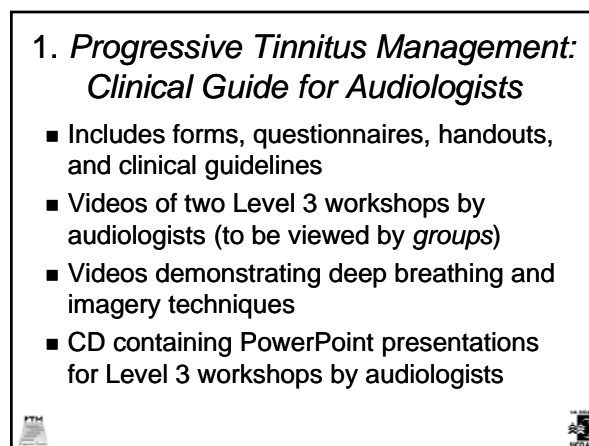
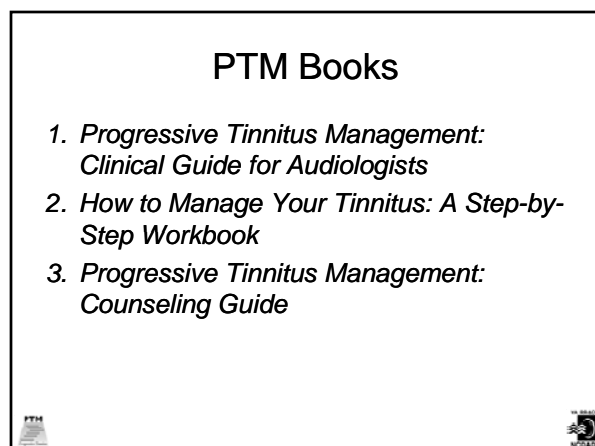
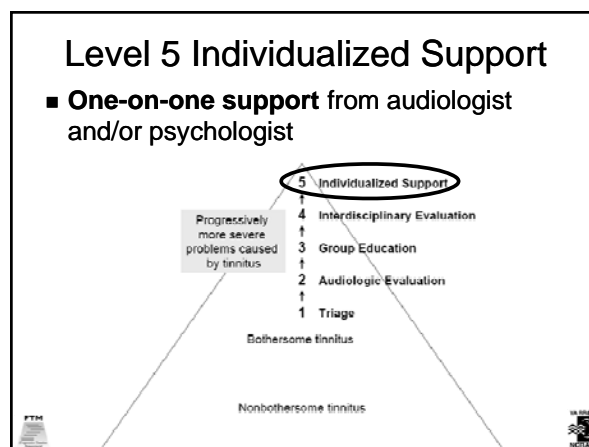
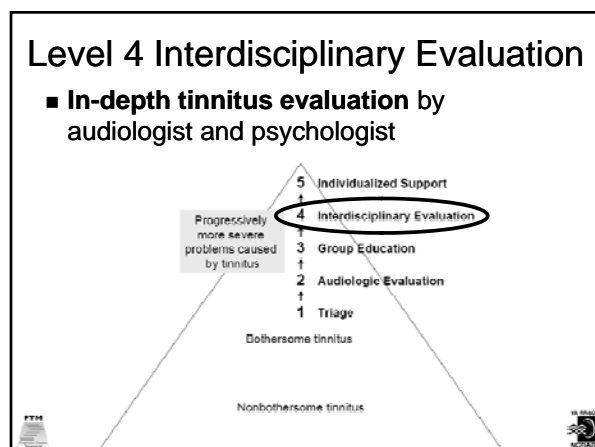
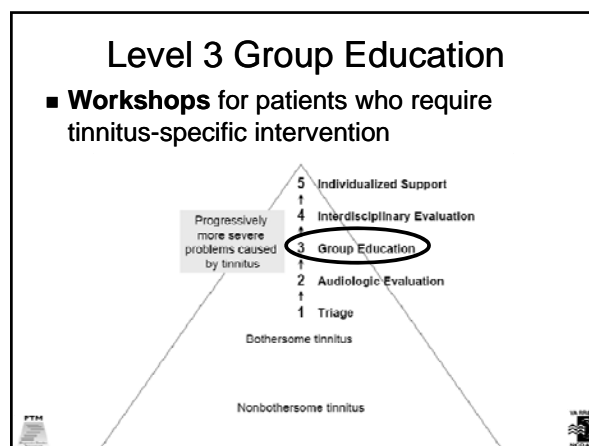
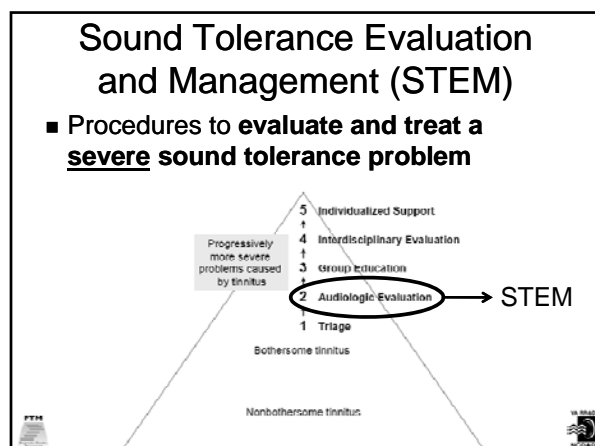


## 4. Overview of PTM



## Five Hierarchical Levels of Clinical Services with PTM





## 2. How to Manage Your Tinnitus: A Step-by-Step Workbook

- Workbook for patients – self-help guide
  - Corresponds with Level 3 workshops by audiologists and psychologists
- Videos of two Level 3 workshops by audiologists (to be viewed by *individuals*)
- Videos demonstrating deep breathing and imagery techniques
- 75-minute CD describing and demonstrating therapeutic sound



## 3. Progressive Tinnitus Management: Counseling Guide

- Intended for one-on-one counseling by audiologists
  - Corresponds with Level 3 workshops by audiologists
  - Special section for hyperacusis counseling
- 75-minute CD describing and demonstrating therapeutic sound



## Online Tinnitus Training Course

- First 11 modules specific to PTM
  - Completed and online (for VA)
- Additional modules (12-18)
  - Covers various aspects of tinnitus management to supplement PTM
  - In development
- “Virtual clinical practicum” in development
- Training for psychologists in development



## 5. Level 1 Triage



## Triage Guidelines Are For All Providers

- Patients report tinnitus to healthcare providers in many different clinics—besides Audiology
  - Otolaryngology
  - Primary Care
  - Psychology
  - Psychiatry
  - Neurology
  - Oncology
- The triage level applies to all clinicians who encounter patients who complain about tinnitus

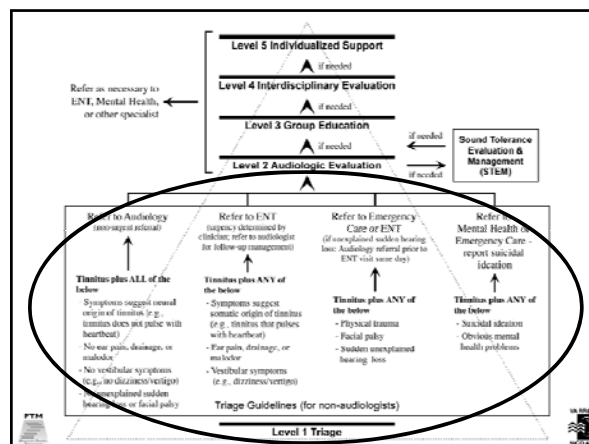


## Triaging Patients Who Complain of Tinnitus

- At the triage level, there **normally** are four possibilities for needed referrals:
  - Emergency triage—Urgent Care or ENT
  - Mental Health
  - ENT
  - Audiology
- Tinnitus Triage Guidelines should be distributed to clinics that are likely to encounter patients who complain about tinnitus



Tinnitus Triage Guidelines (My Patient Complains About Tinnitus—What Should I Do?)	
If the patient:	Refer to:
1. Has physical trauma, facial palsy, or unexplained sudden hearing loss Has any other urgent medical condition	Emergency Care or Otolaryngology (if unexplained sudden hearing loss—Audiology referral prior to Otolaryngology visit same day) ( <b>emergency referral</b> )
2. Has suicidal/homicidal ideations Manifests obvious mental health problems	Emergency Care or Mental Health—report suicidal ideation ( <b>may be emergency</b> —if so escort patient to Emergency Care or Mental Health)
3. Has ANY of the following: ■ Symptoms suggest somatic origin of tinnitus (example: tinnitus that pulses with heartbeat) ■ Ear pain, drainage, or malodor ■ Vestibular symptoms (example: dizziness/vertigo)	Otolaryngology (urgency determined by clinician; refer to audiologist for follow-up management) Can refer to Primary Care if ear pain, drainage, or malodor
4. Has ALL of the following: ■ Symptoms suggest neural origin of tinnitus (example: tinnitus does not pulse with heartbeat) ■ No ear pain, drainage, or malodor ■ No vestibular symptoms (example: no dizziness/vertigo) ■ No unexplained sudden hearing loss or facial palsy	Audiology ( <b>not urgent</b> )



## “A Triage Guide for Tinnitus”

- Henry JA, Zaugg TL, Myers PJ, Kendall CJ, Michaelides EM. A triage guide for tinnitus. *The Journal of Family Practice* 59(7):389-393, 2010.

## 6. Level 2 Audiologic Evaluation



### Level 2 Audiologic Evaluation

- Audiologic exam should be the clinical starting point for all patients who complain of tinnitus, unless urgent medical services are required

### Objectives of Level 2 Audiologic Evaluation

- Determine potential need for:
  - Medical examination
  - Mental health screening
  - Audiologic intervention
- “Audiologic intervention” can include intervention for *hearing loss, tinnitus, and/or reduced tolerance to sound*

## Level 2 Audiologic Evaluation Includes:

- Standard audio assessment
  - Recommend including Hearing Handicap Inventory (HHI)
- Brief assessment of tinnitus impact
  - Three tinnitus questionnaires



## *Hearing Handicap Inventory*

- Self-administered questionnaire to assess self-perceived hearing handicap



## Four Versions of *Hearing Handicap Inventory*

- HHIE for patients age 65 and older
- HHIA for patients <65 yr. (includes questions about occupational effects)
- HHIE and HHIA each have 25 items and include two subscales (emotional and social/situational)
- Screening versions (HHIE-S and HHIA-S) include 10 items and can be completed in 5 min. (HHIE-S recommended for PTM)



## Three Tinnitus Questionnaires

- Pre-Level 2 to establish baseline
  - Tinnitus Handicap Inventory (THI)
  - Self-efficacy for Managing Reactions to Tinnitus (SMRT)
  - Tinnitus and Hearing Survey (THS)
- Each of these questionnaires assesses a different aspect of tinnitus—all are important



## Use of Tinnitus Questionnaires

- Best means to determine how a patient is impacted by tinnitus
- Using the right combination of questionnaires is critical to properly interpret responses
  - The same combination should be used to assess outcomes of intervention



## *Tinnitus Handicap Inventory*

- One of the most widely used and best documented tinnitus questionnaires
- THI contains 25 questions
  - 10-question screening version available
- **Highly vulnerable to influence from hearing problems**



## THI Index Score

- Severe (58-100)
- Moderate (38-56)
- Mild (18-36)
- No handicap (0-16)
- Change of 20 points reported as statistically and clinically significant change in self-perceived tinnitus handicap



## Self-efficacy for Managing Reactions to Tinnitus (SMRT)

- New questionnaire developed specifically to assess outcomes of PTM education
- Assesses patients' **confidence in their ability to self-manage tinnitus**
- Does not assess issues pertaining to quality of life



## Has the SMRT been Validated?

- SMRT includes 17 items
- Six items are taken from Self-Efficacy for Managing Chronic Disease 6-Item Scale
  - This portion of the SMRT would be considered validated—the remainder will be validated in the near future



### Self-Efficacy for Managing Reactions to Tinnitus (SMRT)

Please circle your answer.

- How confident are you that you can keep the fatigue caused by your tinnitus from interfering with the things you want to do?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident
- How confident are you that you can keep the discomfort of your tinnitus from interfering with the things you want to do?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident
- How confident are you that you can keep the emotional distress caused by your tinnitus from interfering with the things you want to do?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident
- How confident are you that you can keep any other symptoms or health problems you have from interfering with the things you want to do?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident
- How confident are you that you can do the different tasks and activities needed to manage your tinnitus so as to reduce your need to see a doctor?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident
- How confident are you that you can do things other than taking medication to reduce how much your tinnitus affects your everyday life?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident
- How confident are you that you can use sound to take your mind off your tinnitus?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident



- How confident are you that you can find a way to relax when your tinnitus is bothering you?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident
- How confident are you that you can reduce stress caused by tinnitus?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident
- How confident are you that you can do things to take your mind off your tinnitus?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident
- How confident are you that you can do things to keep your tinnitus from affecting your daily activities?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident
- How confident are you that you can concentrate when your tinnitus is bothering you?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident
- How confident are you that you can do things to keep your tinnitus from affecting your sleep?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident
- How confident are you that you can do things to help yourself fall asleep or stay asleep, even when you hear your tinnitus?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident



When your tinnitus is bothering you...

- ...how confident are you that you can use sound to make yourself feel better?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident
- ...how confident are you that you can manage your reactions to tinnitus?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident
- ...how confident are you that you can change the way you think about your tinnitus to make yourself feel better?  
1 2 3 4 5 6 7 8 9 10  
Not at all Totally confident



## Tinnitus and Hearing Survey

- Patients often confuse effects of hearing loss with effects of tinnitus
  - A patient who reports a problem with tinnitus may really be experiencing a hearing problem
- *Tinnitus and Hearing Survey* assists patients and clinicians in determining how much of a problem is due to tinnitus vs. hearing loss



## Tinnitus and Hearing Survey

	No way a problem	A little	A moderate amount	A fair amount	A great deal	
<b>A. Tinnitus</b>						
Over the last week, tinnitus kept me from sleeping.	0	1	2	3	4	Grand Total
Over the last week, tinnitus kept me from concentrating on or doing.	0	1	2	3	4	
Over the last week, tinnitus kept me from relaxing.	0	1	2	3	4	
Over the last week, I couldn't get my mind off of my tinnitus.	0	1	2	3	4	
Total of each column						
<b>B. Hearing</b>						
Over the last week, I couldn't understand what others were saying in noisy or crowded places.	0	1	2	3	4	Grand Total
Over the last week, I couldn't understand what people were saying on TV or in movies.	0	1	2	3	4	
Over the last week, I couldn't understand people with soft voices.	0	1	2	3	4	
Over the last week, I couldn't understand what was being said in group conversations.	0	1	2	3	4	
Total of each column						
<b>C. Sound Tolerance</b>						
Over the last week, everyday sounds were too loud for me.*	0	1	2	3	4	
If you responded 1, 2, 3 or 4 to the statement above:						
Being in a meeting with 3 to 10 people would be too loud for me.*	0	1	2	3	4	
*If sounds are too loud for you when wearing hearing aids, please tell your audiologist.						



**Bob**

	No way a problem	A little	A moderate amount	A fair amount	A great deal	
<b>A. Tinnitus</b>						
My tinnitus makes it hard for me to sleep at night.	0	1	2	3	4	Grand Total
My tinnitus makes it hard for me to concentrate when I'm reading.	0	1	2	3	4	
My tinnitus makes it hard for me to relax in a quiet room.	0	1	2	3	4	
It's hard for me to get my mind off of my tinnitus.	0	1	2	3	4	
Total of each column						
<b>B. Hearing</b>						
It's hard for me to understand what others are saying in noisy or crowded places.	0	1	2	3	4	Grand Total
It's hard for me to understand what people are saying on TV or in movies.	0	1	2	3	4	
It's hard for me to understand people with soft or high-pitched voices (some women and children).	0	1	2	3	4	
It's hard for me to join in a group conversation because I can't understand what's being said.	0	1	2	3	4	
Total of each column						
<b>C. Sound Tolerance</b>						
Are everyday sounds too loud for you?*	0	1	2	3	4	
If you answered 1, 2, 3 or 4 to the question above:						
Would a class about tinnitus be too loud for you?	0	1	2	3	4	

\*If sounds are too loud for you when wearing hearing aids, please tell your audiologist.



## Using the THS to Determine Candidacy for Group Education

- Following four steps can help to ensure that patients don't attend Level 3 workshops expecting to learn to manage a hearing-in-noise problem
- If all requirements are met, the patient likely is a candidate for group education
- (THI, HHI, and SMRT scores can help to determine candidacy)



## Using the THS to Determine Candidacy for Group Education

1. Explain that group education focuses on finding ways to manage tinnitus-related problems—the workshops do not focus on hearing-related problems
2. Confirm that patient is interested in attending workshops that address tinnitus-related problems



## Using the THS to Determine Candidacy for Group Education

3. Ensure that patient understands that participating in Level 3 workshops does not preclude receiving concurrent services for managing hearing problems
4. Ensure that patient does not have a sound tolerance problem to such a degree that it would be difficult to participate in Level 3 workshops



### Patient Example: Linda

- Using the THS, Linda provides a low score for Section A and a high score for Section B, but reports a severe tinnitus problem. The Level 2 Audiologic Evaluation reveals that Linda has noise induced, high frequency, SNHL. Linda states that the problems listed in Section B are those that she finds most irritating and upsetting, and she believes those problems are caused by the tinnitus. ...



### Patient Example: Linda (cont.)

- ... After explaining the objectives of Level 3 Group Education, the audiologist helps her to recognize that she probably would not benefit from a workshop that focuses on Section A problems. She understands that audiologic management is needed to address the Section B problems. She is happy to receive the self-help workbook to learn more about her tinnitus.



**Tinnitus and Hearing Survey**

	At all times A lot of times	Most of the time A lot of times	Some of the time A lot of times	Not at all A lot of times	Not at all A lot of times	Grand Total
<b>A. Tinnitus</b>						
Over the last week, tinnitus kept me from sleeping	0	1	2	3	4	Grand Total
Over the last week, tinnitus kept me from concentrating on reading	0	1	2	3	4	
Over the last week, tinnitus kept me from talking	0	1	2	3	4	
Over the last week, I couldn't get my mind off of my tinnitus	0	1	2	3	4	
Total of each column						
<b>B. Hearing</b>						
Over the last week, I couldn't understand what others were saying in noisy or crowded places	0	1	2	3	4	Grand Total
Over the last week, I couldn't understand what people were saying on TV or in movies	0	1	2	3	4	
Over the last week, I couldn't understand people with soft voices	0	1	2	3	4	
Over the last week, I couldn't understand what was being said in group conversations	0	1	2	3	4	
Total of each column						
<b>C. Sound Tolerance</b>						
Over the last week, everyday sounds were too loud for me	0	1	2	3	4	Grand Total
If you responded 1, 2, 3 or 4 to the statement above, facing in a meeting with 5 to 10 people would be too loud for me	0	1	2	3	4	
Total of each column						



### PTM Approach to Managing Sound Tolerance Problems

- It's commonly reported by tinnitus clinicians and researchers that a relatively high percentage of tinnitus patients suffer from hyperacusis
- In reality, *most patients who are identified as "hyperacusic" do not require intervention specific to reduced sound tolerance*



### Treatment for Reduced Sound Tolerance

- Requires a program of systematic exposure to sound
- Patients who use sound to *manage their reactions to tinnitus* participate in a systematic program of sound therapy



### Sound Therapy Indirectly Addresses Reduced Sound Tolerance

- By using sound to manage their reactions to tinnitus, these patients are in effect receiving the needed sound exposure to treat reduced sound tolerance
- If patients who have reduced sound tolerance are able to comfortably participate in a program of sound-based tinnitus management, then this tinnitus intervention should be the starting point





### THS: Section C, Item 1

1. Any patient who reports a sound tolerance problem (*of any degree*) should receive the sound tolerance handout (*What to do When Everyday Sounds are Too Loud*)



### THS: Section C, Item 2

2. Any patient who reports that a sound tolerance problem would make it difficult to attend Level 3 workshops should be scheduled for a Sound Tolerance Evaluation and Management (STEM) appointment

*Scheduling a STEM appointment would be relatively rare*



### Key Decision for Patients who Report a Sound Tolerance Problem

- *Determine if reduced sound tolerance would make it uncomfortable for patient to attend Level 3 Group Education*



### Remainder of Level 2 Assessment is Routine Audiology

- Assessment of auditory function
- Hearing aid evaluation (if warranted)
- Assess for need to refer to ENT
- Assess for need for mental health screening
- Determine if assessment of sleep disorder is indicated



### Tinnitus Problem Checklist (optional)

- If uncertainty about candidacy for Level 3 Group Education, TPC can be administered (time permitting)
- Facilitates one-on-one discussion about common tinnitus problems



#### 1. My most bothersome tinnitus situation is:

- |   |  |
|---|--|
| <input type="checkbox"/> Feeling asleep at night  | <input type="checkbox"/> Relaxing in my recliner |
| <input type="checkbox"/> Staying asleep at night  | <input type="checkbox"/> Napping during the day  |
| <input type="checkbox"/> Waking up in the morning | <input type="checkbox"/> Planning activities     |
| <input type="checkbox"/> Reading                  | <input type="checkbox"/> Driving                 |
| <input type="checkbox"/> Working at the computer  | <input type="checkbox"/> Other _____             |

Write your answer on #1 of the Sound Plan Worksheet. Copies of the worksheet can be found at the end of the self-help workbook.\*

#### 2. My second most bothersome tinnitus situation is:

- |   |  |
|---|--|
| <input type="checkbox"/> Feeling asleep at night  | <input type="checkbox"/> Relaxing in my recliner |
| <input type="checkbox"/> Staying asleep at night  | <input type="checkbox"/> Napping during the day  |
| <input type="checkbox"/> Waking up in the morning | <input type="checkbox"/> Planning activities     |
| <input type="checkbox"/> Reading                  | <input type="checkbox"/> Driving                 |
| <input type="checkbox"/> Working at the computer  | <input type="checkbox"/> Other _____             |

Write your answer on #1 of a separate Sound Plan Worksheet.

#### 3. My third most bothersome tinnitus situation is:

- |   |  |
|---|--|
| <input type="checkbox"/> Feeling asleep at night  | <input type="checkbox"/> Relaxing in my recliner |
| <input type="checkbox"/> Staying asleep at night  | <input type="checkbox"/> Napping during the day  |
| <input type="checkbox"/> Waking up in the morning | <input type="checkbox"/> Planning activities     |
| <input type="checkbox"/> Reading                  | <input type="checkbox"/> Driving                 |
| <input type="checkbox"/> Working at the computer  | <input type="checkbox"/> Other _____             |

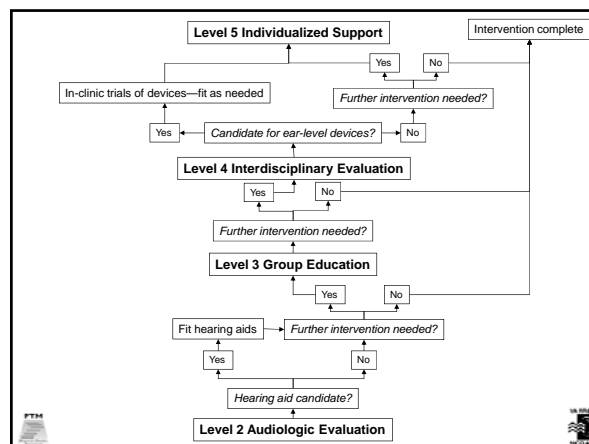
Write your answer on #1 of a separate Sound Plan Worksheet.

\* "How to Manage Your Tinnitus: A Step-by-Step Workbook," by J. A. Henry, T. L. Zaugg, P. M. Myers, & C. M. Kendall. 2010. San Diego, CA: Pines Publishing, Inc.



### If Patient Requires Hearing Aids: **Previous Approach**

- We *previously* recommended fitting only hearing aids at Level 2
- i.e., don't provide combination instruments or noise generators until after Level 3 Group Education
  - Knowledge gained during workshops allows patients to make *informed* decisions



### If Patient Requires Hearing Aids: **Current Approach**

- Previously, combination instruments had reduced hearing aid features
- Newer models are full-featured
- It is now a viable option to fit combination instruments at Level 2
- However, noise should be turned off until after patient has attended a Level 3 workshop (i.e., been educated about how to use sound to manage tinnitus)



### Hearing Aids for Managing Reactions to Tinnitus

- Special considerations when tinnitus is present
  - Ear canal as open as possible
  - Feedback circuitry beneficial
  - Noise suppression circuitry may be detrimental
  - Reduced levels of internal noise may be detrimental



### Benefits of Amplification for Patients with Tinnitus

- Amelioration of communicative difficulties caused by hearing loss but attributed to tinnitus
- Alleviation of stress associated with difficult listening situations
- Increase in ambient sound that can reduce effects of tinnitus
- Stimulation of impaired portions of auditory system that often are deprived of sound



### Managing Sleep Disorder

- If sleep disorder is a direct consequence of tinnitus, then effective tinnitus management can resolve sleep problem
  - Requires appropriate use of sound in sleep environment
  - Workshops and self-help workbook provide strategies
- Refer for insomnia treatment *only if necessary*



## What About Drugs for Tinnitus?

- No prescription drug available for tinnitus
- Some drugs may reduce symptoms
  - Most commonly used to address coexisting sleep disorders and mental health disorders—primarily depression and anxiety
- Medical management of sleep and mental health problems can be a helpful component of an overall approach to managing reactions to tinnitus



## Certain Medications can Trigger or Exacerbate Tinnitus

- NSAIDS, loop diuretics, quinine
- Normally, fairly high doses are required to cause tinnitus effects, and the effects usually are temporary
- Drugs used to treat mental health and sleep conditions also may trigger or exacerbate tinnitus



## Certain Medications can Trigger or Exacerbate Tinnitus (cont.)

- Patients have reported exacerbation of tinnitus due to alcohol and caffeine
- Ototoxicity from aminoglycosides and platinum-containing chemotherapeutic drugs are well-known causes of hearing loss and tinnitus—effects often are irreversible



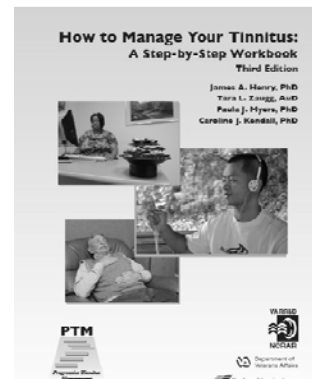
## Trial-and-Error Approach

- The only way to know if a medication alleviates tinnitus is through trial-and-error
  - Generally what is done by physicians who attempt to use medications to treat tinnitus
- It is better for patients if they can be helped with counseling and proper use of sound rather than receiving medications that can have harmful side effects or result in dependency/addiction



## Self-Help Workbook

- *How to Manage Your Tinnitus: A Step-by-Step Workbook*
- Normally provided to patients at first Level 3 workshop



### Why Wait Until Level 3 to Provide Workbook?

- Anticipating receiving workbook increases likelihood that patients will participate in Level 3
- Attending workshops increases likelihood patients will learn and benefit from self-help information
- Increasing group size can improve likelihood of meaningful interactions between group members



### Why Wait Until Level 3 to Provide Workbook? (cont.)

- Many patients believe that reducing loudness of tinnitus is the only way to feel better—may be disillusioned by workbook since it does not offer that option
- These patients may not even attempt to implement ideas contained in workbook and thus may only be able to benefit from workbook if guided through it by clinician



### Why Wait Until Level 3 to Provide Workbook? (cont.)

- Providing workbook as patient is leaving the clinic decreases likelihood that patient and clinician will discuss the concepts
- Discussion fosters interest and learning, and is more likely to lead to the patient making behavioral changes that will reduce reactions to tinnitus and increase quality of life



### Summary of Level 2 Audiologic Evaluation

- Conventional audiologic assessment
- Brief assessment of tinnitus impact
  - **Three tinnitus questionnaires**
- Decide with patient if tinnitus-specific intervention is needed
  - If so, advise patient to attend Level 3 Group Education



## 7. Sound Tolerance Evaluation & Management (STEM)



### STEM

- Adjunct program for patients who have a sound tolerance problem that precludes them from participating in the PTM protocol
- These patients are identified at the Level 2 Audiologic Evaluation as requiring the special STEM program





- A patient's progress through PTM is temporarily suspended until the STEM program is completed
- However, by virtue of the sound-based intervention received through the STEM program, the tinnitus problem might also be resolved—in which case there is no need to resume PTM



- **Hyperacusis:** physical condition of discomfort/pain caused by sound
- **Misophonia:** “dislike of sound” – emotions are involved
  - **Phonophobia:** fear response due to sound
- **Loudness recruitment:** abnormally rapid growth in perception of loudness

## Sound Tolerance Interview

- **Only the STI is essential for the STEM evaluation**
  - i.e., it is essential to conduct an in-depth interview to fully understand the nature and severity of the problem, and to develop an appropriate management plan
- STI also provides data that can be used as baseline to evaluate progress

### STI: Six Questions

- Question 1 (series of questions): do hearing aids contribute to problem?
- Questions 2-5: kinds of sounds and activities that are problematic, and degree of problem in each case
- Question 6: determine if patient “overprotects” ears



### Treatment for Reduced Sound Tolerance

- Essence of treatment: use of sound to systematically decrease sensitivity
- Different conditions relating to reduced sound tolerance—for PTM, a *generic* approach to sound desensitization is used:
  - Increase ambient levels of sound
  - Increase activities involving active listening to sounds that the patient enjoys



### Counseling for Reduced Sound Tolerance

- Should follow the suggestions that are provided in the patient handout *What to Do When Everyday Sounds are Too Loud*
- Ensure that the patient understands the principles from the handout, and support the patient in following the suggestions



### One-on-One Counseling Using the *PTM Counseling Guide*

- Section 3
- Flip-chart style individualized counseling
- Counseling corresponds with handout *What to Do When Everyday Sounds are Too Loud*
- Counseling leads to use of the *Sound Tolerance Worksheet*
  - Develop customized plans for self-managing sound tolerance problem using sound



	1. When and where will I do this?	2. How will I do this?	3. Comments	4. Am I doing better?
Things I can do	In my bedroom at night; anytime I am in the office	Keep a fan running in my bedroom; play classical music in my office		After 1 month:
Successful aspect with most benefit to sound				
Listen to sounds I enjoy	Evenings when relaxing in my living room	Listen to my favorite music using the stereo in the living room		After 2 months:
Use earplugs or earbuds	I'll stop using my earplugs when I am home alone. I'll take my earplugs with me to the grocery store (and other places), but I'll only use them if I need them, and I will take them out as soon as I can.			After 3 months:



### Testing Loudness Discomfort Levels (optional procedure)

- LDL testing nonessential because:
  - It can cause discomfort and anxiety
  - Validity of LDLs as a measure of loudness tolerance in daily life has not been established
  - Results of testing do not normally guide intervention procedures
- The most important information will come from the *Sound Tolerance Interview*



### In-Clinic Trial Use of Ear-level Instruments (optional)

- Decision to conduct in-clinic trial depends largely on extent of problem
- Although ear-level instruments might provide optimal treatment for sound tolerance problem, they may not be necessary
- Often, sound enrichment using variety of sound sources will provide adequate desensitization protocol



### When Are Ear-Level Instruments Indicated?

- Decision to use ear-level instruments based on two factors:
  - Sound tolerance condition so severe that instruments are justified
  - Patient must be motivated to use the instruments



### Conducting the In-Clinic Trial

- Provides patients with experience of wearing and listening to sound-generating devices
  - Helps them decide if using instruments is desirable
- Procedure: fit stock devices and allow patients to direct process of adjusting sound levels
  - Some pts may need sound turned off at first



## 8. Level 3 Group Education



### Managing Reactions to Tinnitus

- Chronic tinnitus usually is permanent
- Tinnitus cannot be quieted, but patients can learn to manage their reactions to it
  - May need to be managed *for a lifetime*
- PTM counseling focuses on educating patients to become self-sufficient in managing their reactions to tinnitus



### Level 3 “Workshops”

- Series of patient-education group sessions
- Called “workshops” because of their emphasis on interaction and participation
- Standard protocol: five weekly workshops—two presented by an audiologist and three by a psychologist



### Five Weekly Workshops

- Week 1: Audiologist
- Week 2: Psychologist
- Week 3: Audiologist
- Week 4: Psychologist
- Week 5: Psychologist



### Psychologists versus Other Mental Health Providers

- Psychologists (PhD or PsyD) are trained to provide psychotherapy AND can diagnose mental health disorders
- Other MH providers (counselors, social workers, those with Master's level psychology degrees) can only provide psychotherapy and cannot diagnose



### Psychologists versus Other Mental Health Providers (cont.)

- CBT (Levels 3 and 5 of PTM) can be offered by any MH provider who is specifically trained to offer CBT or who is being supervised by a licensed and CBT-trained MH provider
- CBT training requires being supervised by another CBT provider for an extended period – 6 months or more



### Do All Patients Have to Attend Workshops?

- Some patients may:
  - Be unwilling or unable to attend
  - Require one-on-one intervention
  - Have cognitive impairment or other condition that would prevent group learning
- Also, some clinics may not have enough patients to conduct groups
- One-on-one counseling is appropriate in these instances



### Workshop Alternative

- DVD of workshops with audiologist included with self-help workbook (see next slide)
- Patients can view interactive videos of two sessions at home to develop and modify plans for using sound to manage reactions to tinnitus
  - Each video ideally should be followed up by phone call from audiologist





### Self-Help Workbook

- *How to Manage Your Tinnitus: A Step-by-Step Workbook*
- Patients normally should receive a copy when they attend their first Level 3 workshop
  - Workbook generally is more effective when used in conjunction with workshop



### Collaborative Self-Management

- Intervention is not “treatment”
- Intervention should involve primarily educating the patient about managing reactions to tinnitus
- Different strategies needed to manage reactions that occur in different situations



### PTM Approach to Self-Management

- Modeled closely after current methods of chronic pain management
  - Now recognized that effective management depends much more on patients’ own efforts and expectations than on their passively receiving a treatment



### “Shift of Responsibility”

- As patients become more actively involved in decisions, they naturally experience a greater sense of commitment to participate in the management process
  - Results in a “shift of responsibility from the healthcare professional to the individual for the day-to-day management of their condition” (S. Newman et al., 2001)



### Accomplishing the “Shift of Responsibility”

- Need to work with patients to help them:
  - Understand their condition
  - Participate in decisions regarding their management plan
  - Develop and follow the plan
  - Monitor success of their self-management efforts and revise the plan as needed
- Overall approach is “collaborative self-management”



### Educating Patients to Use Therapeutic Sound

- Effectiveness of therapeutic sound for tinnitus management well supported
  - Hearing aids
  - Tinnitus masking
  - Tinnitus retraining therapy
  - Neuromonics tinnitus treatment
  - Studies conducted at NCRAR
  - OHSU Tinnitus Clinic
- No one method superior



## PTM Approach to Using Therapeutic Sound

- Not limited to a single method or device
- Provide knowledge and skills to use sound and devices in adaptive ways to manage any life situation disrupted by tinnitus
  - Accomplished by teaching different ways of using sound, and helping patients develop and implement custom sound-based management plans that address their unique needs



## Workshops Conducted by an Audiologist

- PowerPoint presentation given during each workshop
  - *Managing Your Tinnitus: What to Do and How to Do It*
- Focus is to assist patients in learning how to self-manage their reactions to tinnitus using therapeutic sound in adaptive ways



## First Workshop (With Audiologist)

- Goal is for all participants to use Sound Plan Worksheet to develop an individualized “sound plan” for managing their most bothersome tinnitus situation



**Sound Plan Worksheet**

1. Write down one bothersome tinnitus situation

2. Check one or more of the three ways to use sound to manage the situation

3. Write down the sounds that you will try

4. Write down the devices you will use

5. Use your sound plan over the next week. How helpful was each sound after using it for 1 week?

6. Comments: When you find something that works well (or not so well) please comment. You do not need to wait 2 weeks to write your comments.

Sound Type	Not at all	Slightly	Moderately	Very helpful	Extremely
Soothing sound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Background sound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interesting sound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



## Task-Oriented Workshops

- Practical, how-to information provided
- Covering all material requires 1.5 hr
- Keeping group on-task can be challenging
  - Discussion about tinnitus leads to questions
  - Tendency for patients to want to share experiences and thoughts about tinnitus
- Participants asked to refrain from asking unrelated questions and discussing unrelated topics until end of session



## Content of First Workshop with Audiologist

- Review *Tinnitus and Hearing Survey*
- Fill out *Tinnitus Problem Checklist*
- Complete practice *Sound Plan Worksheet*
  - Three types of sound: soothing, interesting, background
  - Environmental sound, music, speech
  - Sound Grid
- Develop “sound plan” for next 2 weeks



## Questionnaires for Level 3

- End of each workshop
  - Workshop Evaluation Form
- 6 weeks after end of workshops
  - Six-Week Post-Workshop Interview (conducted by clinicians to determine if further services are needed)
- Tinnitus Workshop Follow-up



### Workshop Evaluation Form

Workshop ID: \_\_\_\_\_

Please let us know how you feel about today's workshop so we can meet your health education needs. All responses will be kept confidential and anonymous. Thank you for your time.

Please circle your response.

## 1. The instructor was helpful.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
0	1	2	3	4

## 2. The information was useful to me.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
0	1	2	3	4

## 3. I consider the VA to be a good source for health information.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
0	1	2	3	4

## 4. I had trouble hearing the information during this workshop.

YES NO

## 5. I had trouble reading the information used in this workshop.

YES NO

## 6. Please share any comments, concerns, or recommendations.

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VA National Center for Rehabilitative Auditory Research, Portland, OR

8/17/2018



### Six Week Post-Workshop Telephone Interview

*Note to clinician:* The questions below are presented as a framework for guiding a conversation about how the patient has been doing since the workshops. The specific criteria are provided to guide decision making at the end of the interview. At the end of the interview the clinician and patient will have discussed general progress, and then can together make a decision about what to do next.

1. Since the workshops, what have you been doing to manage your reactions to tinnitus?  
(Circle all that apply. First, let the patient respond spontaneously. Then, ask specifically about use of sound, relaxation techniques, planning pleasant activities, and changing thoughts – if they didn't already bring it up.)

Use of sound: \_\_\_\_\_

Relaxation techniques: \_\_\_\_\_

Planning pleasant activities: \_\_\_\_\_

Changing thoughts: \_\_\_\_\_

Other comments: \_\_\_\_\_

2. What has been most helpful for you?

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3. What has been least helpful for you?

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4. Overall, how satisfied are you with how you are doing with your tinnitus?

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*Note to clinician:* Below are five options for how to proceed after this interview. Below each option is a description of patients who might be interested in that option. However, the decision for how to proceed after the interview is up to the judgment and desires of both clinician and patient (even in cases when the decision does not match the descriptors well).

- **No further intervention**
  - Reasonably satisfied with how well tinnitus is managed
  - Does not desire further intervention
- **Attend all workshop sessions again**
  - Would like to review the content from all sessions
  - Would like to use the group interactions to provide motivation to carry through with using the techniques taught during all sessions
- **Attend some workshop sessions again**
  - Would like to review content from certain sessions, but not all sessions
  - Would like to use the group interactions to provide motivation to carry through with using the techniques taught during certain sessions
- **Watch videos that provide content from the workshops**
  - Would like to review the content from the sessions, but do not wish to engage in group interactions again, or who would prefer to review content without being required to return to the VA
- **Level 4 Interdisciplinary Evaluation**
  - Desires further intervention, but repeating the workshops is undesirable and/or deemed unlikely to be helpful



### Tinnitus Workshop Follow-up

1. Have you been using sound to manage your reactions to tinnitus?

YES NO

If yes, how often?

A. Very often

B. Often

C. Sometimes

D. Rarely

E. Other

If no, why not?

A. I don't need to do this

B. It's not worth the trouble

C. I don't know what to do

D. I don't think it helps

E. I don't like to do this

F. Other

2. Have you been practicing relaxation techniques (deep breathing, and/or imagery) to manage your reactions to tinnitus?

YES NO

If yes, how often?

A. Very often

B. Often

C. Sometimes

D. Rarely

E. Other

If no, why not?

A. I don't need to do this

B. It's not worth the trouble

C. I don't know what to do

D. I don't think it helps

E. I don't like to do this

F. Other

3. Have you been planning more pleasant activities to help manage your reactions to tinnitus?

YES NO

If yes, how often?

A. Very often

B. Often

C. Sometimes

D. Rarely

E. Other

If no, why not?

A. I don't need to do this

B. It's not worth the trouble

C. I don't know what to do

D. I don't think it helps

E. I don't like to do this

F. Other

4. Have you been working on changing your thoughts about tinnitus to help you feel better?

YES NO

If yes, how often?

A. Very often

B. Often

C. Sometimes

D. Rarely

E. Other

If no, why not?

A. I don't need to do this

B. It's not worth the trouble

C. I don't know what to do

D. I don't think it helps

E. I don't like to do this

F. Other



5. Compared to how I felt before the tinnitus workshops, I now feel:

A. A lot more in control of my reactions to tinnitus

B. Somewhat more in control of my reactions to tinnitus

C. A little more in control of my reactions to tinnitus

D. The same (no change in control of my reactions to tinnitus)

E. A little less in control of my reactions to tinnitus

F. A lot less in control of my reactions to tinnitus

G. Compared to before the tinnitus workshops, my ability to cope with tinnitus is now:

A. A lot better

B. Somewhat better

C. A little better

D. The same

E. A little worse

F. Somewhat worse

G. A lot worse

H. Compared to before the tinnitus workshops, my tinnitus now bothers me:

A. A lot less

B. Somewhat less

C. A little less

D. The same

E. A little more

F. Somewhat more

G. A lot more

H. Compared to before the tinnitus workshops, my tinnitus now bothers me:

A. A lot less

B. Somewhat less

C. A little less

D. The same

E. A little more

F. Somewhat more

G. A lot more

H. Compared to before the tinnitus workshops, my tinnitus now bothers me:

A. A lot less

B. Somewhat less

C. A little less

D. The same

E. A little more

F. Somewhat more

G. A lot more

H. Compared to before the tinnitus workshops, my tinnitus now bothers me:

A. A lot less

B. Somewhat less

C. A little less

D. The same

E. A little more

F. Somewhat more

G. A lot more

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A. A lot less

B. Somewhat less

C. A little less

D. The same

E. A little more

F. Somewhat more

G. A lot more

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F. Somewhat more

G. A lot more

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C. A little less

D. The same

E. A little more

F. Somewhat more

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D. The same

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D. The same

E. A little more

F. Somewhat more

G. A lot more

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C. A little less

D. The same

E. A little more

F. Somewhat more

G. A lot more

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C. A little less

D. The same

E. A little more

F. Somewhat more

G. A lot more

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B. Somewhat less

C. A little less

D. The same

E. A little more

F. Somewhat more

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C. A little less

D. The same

E. A little more

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B. Somewhat less

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D. The same

E. A little more

F. Somewhat more

G. A lot more

H. Compared to before the tinnitus workshops, my tinnitus now bothers me:

A. A lot less

B. Somewhat less

C. A little less

D. The same

E. A little more

F. Somewhat more

G. A lot more

H. Compared to before the tinnitus workshops, my tinnitus now bothers me:

A. A lot less

B. Somewhat less

C. A little less

D. The same

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B. Somewhat less

C. A little less

D. The same

## Managing Your Tinnitus: What to Do and How to Do it (Session 1 of 2)



## Second Workshop (With Audiologist)

- Objectives are for participants to:
  - Share experiences using initial sound plan
  - Engage in collaborative problem solving (to address any problems implementing sound plans)
  - Improve sound plan or develop a new sound plan



## New Information During Second Workshop with Audiologist

- Different types of sound-producing devices
- Ideas for using sound to improve sleep
- Sound-based methods and how they relate to Sound Grid
- Lifestyle factors that can affect tinnitus and hearing
- *Participants should attend both workshops to maximize their benefit*



## Managing Your Tinnitus: What to Do and How to Do it (Session 2 of 2)



## Workshops Conducted by a Psychologist

- MH intervention can be important component of overall approach to managing tinnitus
- These patients can, in general, benefit from receiving MH intervention
  - To alter maladaptive reactions to tinnitus and to aid in coping with tinnitus
  - Particularly important for patients who also experience PTSD or other MH problems



## How Many CBT Sessions?

- 6-10 typical in many clinical settings
- Actual number is flexible and depends on purpose of therapy
- Consistent with “progressive” approach, patients should receive less intervention at lower levels and more at higher levels
  - Therefore, only certain components of CBT taught at Level 3 to minimize number of sessions



### Three CBT Workshops

- Necessary to cover most important components of CBT
- Patients can attend additional sessions if further CBT counseling is needed
  - Normally offered following, and depending on results of, Level 4 Interdisciplinary Evaluation
- Additional workshops can be added—consistent with progressive approach



### Correspondence Between Workshops and Workbook

- Patient learning in all Level 3 workshops facilitated by use of self-help workbook
- Each CBT component taught during Level 3 is described in workbook
- After each session, patients practice their new skills by using worksheets and activities in the workbook



## 9. Level 4 Interdisciplinary Evaluation



### Who Needs a Level 4 Interdisciplinary Evaluation?

- Most patients can satisfactorily self-manage their tinnitus after participating in Level 3 Group Education
- Patients who need more support and education than is available at Level 3 can progress to the Level 4 evaluation to determine their needs for further intervention



### Main Purpose of Level 4 Interdisciplinary Evaluation

- Determine if individualized clinical services are needed to address tinnitus-specific problems
- If these services are needed, then patients progress to Level 5 Individualized Support
- Level 5 involves primarily one-on-one counseling from an audiologist and/or a mental health provider



### Audiologic Assessment

- *Tinnitus and Hearing Survey* in conjunction with *Tinnitus Interview* is primary means of determining if one-on-one individualized support is appropriate.
- Optional procedures:
  - Tinnitus psychoacoustic assessment
  - Evaluation for use of ear-level devices



### Mental Health Assessment

- Level 4 patients more likely to have comorbid MH conditions or sleep disorders that would require an interdisciplinary approach to intervention
- Screening for MH conditions and sleep disorders is conducted routinely by a MH provider



### Who Should Do Mental Health Assessment?

- MH provider included in “tinnitus team” should conduct MH assessment
- If a MH provider is not part of the team, then patient should be referred to primary care for a MH assessment
- A non-MH provider can conduct MH screening in certain situations



### PTM Strategies May be Sufficient for Sleep Disorder

- Therapeutic sound can be highly effective in sleep environment
- Patients also may benefit from learning basic information about sleep hygiene such as limiting daytime napping, keeping a regular sleep schedule, and other behaviors that encourage sleep
- Self-help workbook provides three pages of “tips for getting better sleep”



### Re-Administer Written Questionnaires at Level 4

- *Tinnitus and Hearing Survey*
- *Tinnitus Handicap Inventory*
- *Self-efficacy for Managing Reactions to Tinnitus*
- *Hearing Handicap Inventory*
- Structured interview would be incomplete without this information



### Administer *Tinnitus Interview*

- Written tinnitus questionnaires insufficient for patients who reach Level 4
- *Tinnitus Interview* facilitates face-to-face structured dialogue with patient
  - Necessary to capture information needed to make decisions for clinical services at this level



### *Tinnitus Interview* is not a Stand-Alone Interview

- *Tinnitus Interview* designed to supplement *Tinnitus and Hearing Survey* at Level 4
- Results of THS should first be reviewed with patient, after which the *Tinnitus Interview* can be administered if appropriate



### When is *Tinnitus Interview* Administered?

- If confirmed that patient has a tinnitus-specific problem and is interested in tinnitus-specific intervention, next step is to conduct *Tinnitus Interview*



### *Tinnitus Interview* Does Not Cover Case History Information

- *Tinnitus Interview* does not cover information that should have been covered during Level 2 case history
- Case history normally would obtain description of tinnitus (loudness, pitch, perceived location, symmetry/asymmetry, constancy versus intermittency, etc.) and circumstances of its onset



### Another Caveat

- Although helpful to review case history before administering *Tinnitus Interview*, it is important not to focus on what the tinnitus sounds like
- **The purpose of intervention is to assist the patient in learning how to manage reactions to tinnitus—not to attempt to change the sound of the tinnitus**



### Psychoacoustic Assessment of Tinnitus

- Tinnitus loudness and pitch matching
- Minimum masking level (MML)
- Testing for residual inhibition
- *These tests generally not recommended within framework of PTM*



### Why Not Conduct Psychoacoustic Assessment?

- Patients asked to attend closely to tinnitus and to effects of different sounds on tinnitus
  - At cross purposes with PTM therapeutic goals
- With PTM, patients are required to attend to how they feel, rather than to the sound of their tinnitus



### Focus on *Reactions* Rather than Sound of Tinnitus

- Making the transition to attending to how they feel and their *reactions* to tinnitus rather than to the sound of tinnitus is difficult for many patients, but very important
  - Important because patients usually cannot satisfactorily change the sound of their tinnitus, but they usually can change how they feel



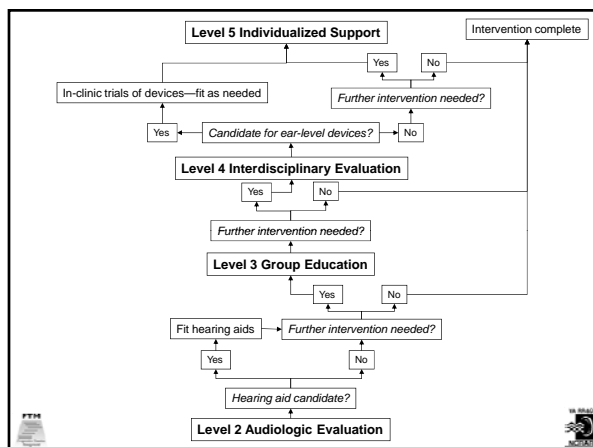
## Further Rationale for Not Doing Psychoacoustic Testing

- Results of tinnitus psychoacoustic testing generally are *not helpful* for:
  - Diagnostic purposes
  - Guiding intervention
  - Assessing outcomes of intervention



## In-Clinic Trials of Ear-Level Instruments (optional)

- At Level 4, all types of ear-level sound generators and combination instruments (and hearing aids) are viable options for intervention



## Combination Instruments

- New models of combination instruments provide full-feature hearing aids
- These combination instruments can be fitted at Level 2
  - If so, we recommend that noise generator portion be turned off until patient has received Level 3 audiologic counseling



## When to Conduct In-Clinic Trials of Ear-Level Instruments

- If results of *Tinnitus and Hearing Survey* and *Tinnitus Interview* suggest that a patient is a candidate for Level 5 Individualized Support from an audiologist, then—if the patient is amenable—it is appropriate to conduct in-clinic trials of ear-level instruments



## Why *In-Clinic* Trials?

- It often is difficult to predict how a patient's tinnitus (and reactions to tinnitus) will be affected by amplification, sound from an ear-level sound generator, or a combination of the two
- In-clinic trial use of ear-level instruments allows patients to make realistic, experience-based decisions about potential effectiveness of devices





### Guidelines Already Provided for Three Categories of Patients

- Obvious hearing aid candidate
- Borderline hearing aid candidate
- Not a hearing aid candidate

Henry JA, Zaugg TL, Myers PJ, Kendall CJ. *Progressive Tinnitus Management: Clinical Handbook for Audiologists*. San Diego, CA: Plural Publishing Inc., 2010. (note: this book also was published independently by VA Employee Education System and distributed to VA audiologists)



### Special Forms to Guide In-Clinic Trials of Ear-Level Instruments

- Guide to Trial Use of Ear-Level Instruments
- In-Clinic Trial Use of Hearing Aids
- In-Clinic Trial Use of Combination Instruments
- In-Clinic Trial Use of Noise Generators

Henry JA, Zaugg TL, Myers PJ, Kendall CJ. *Progressive Tinnitus Management: Clinical Handbook for Audiologists*. San Diego, CA: Plural Publishing Inc., 2010. (note: this book also was published independently by VA Employee Education System and distributed to VA audiologists)



### Clinic Inventory of Trial Ear-Level Instruments

- Variety of ear-level instruments should be available
- Because of potential sanitization concerns, use only BTE instruments with temporary disposable earmolds

Henry JA, Zaugg TL, Myers PJ, Kendall CJ. *Progressive Tinnitus Management: Clinical Handbook for Audiologists*. San Diego, CA: Plural Publishing Inc., 2010. (note: this book also was published independently by VA Employee Education System and distributed to VA audiologists)



### Additional Sound-Generating Devices for Demonstration

- Tabletop sound conditioners
- Pillow speakers
- MP3 players loaded with interesting, soothing, and background sounds
- (alternative therapeutic uses of sound if ear-level instruments are not advised or desired)



### Continuity Between Level 3 Counseling and In-Clinic Trials

- During Level 3 workshops, patients learn about three types of sound (soothing, background, interesting) that can be used to manage reactions to tinnitus
- For in-clinic trials to be most meaningful, patients need to be informed that instruments can be used to implement each of these strategies



### Need for Follow-Up If Patients Receive Ear-Level Instruments

- Use of ear-level instruments requires ongoing support from audiologist, including continued development and assessment of strategies for using sound most effectively
  - Process facilitated by reviewing *Sound Plan Worksheet* at every appointment



### How Many Level 5 Appointments Will be Needed?

- Individualized support typically involves two to five visits over a period of up to 6 months
- A patient who receives special ear-level devices during Level 4 should attend at least two Level 5 appointments



### Summary of Ear-Level Instruments for PTM

- Appropriate use of sound can be critically important for managing reactions to tinnitus
- There are numerous options for using sound with ear-level instruments
  - Each option must be considered for the individual patient



### Summary of Ear-Level Instruments for PTM (cont.)

- Systematic approach required to determine best combination of instruments and sounds
- *The patient makes the final decision*
- The clinician facilitates the decision-making process and provides a selection of sounds and instruments



### Criteria for Patients to Progress to Level 5 Individualized Support

- Levels 1-4 of PTM have not adequately addressed tinnitus concerns
- Evaluated and referred as appropriate for care in other clinics
- Understand nature of services available from psychologist and audiologist
- Motivated and capable of participating in activities proposed by clinicians



## 10. Level 5 Individualized Support



### Overview of Level 5 Individualized Support

- Needed by relatively few patients
- Involves use of same principles of using sound and coping techniques to manage tinnitus presented in Level 3 workshops
- Focus may involve ear-level noise/sound generators or combination instruments



### Overview of Level 5 Individualized Support (cont.)

- Education and support provided one-on-one
  - More intense and individualized assistance than available at Level 3
- Level 5 counseling less structured than Level 3
  - Allows for flexibility in what is covered during sessions—clinician has latitude to modify or expand on counseling information



### Level 5 Standard Protocol for Audiologists

- Functioning and proper use of ear-level instruments verified (if applicable)
- One-on-one PTM counseling conducted—focusing on updating *Sound Plan Worksheet* to ensure patient is optimizing use of therapeutic sound



### Level 5 Standard Protocol for Audiologists

- If necessary, patient's progress can be evaluated and current needs assessed using any of Level 4 questionnaires
  - If *Tinnitus Interview* is used, select individual questions relevant to patient's complaints rather than administering entire interview
- Audiometric testing repeated only if patient reports a significant auditory change



### Schedule of Appointments

- Following the initial Level 5 appointment, return counseling appointments normally are scheduled at 1, 2, 4, and 6 months



### Why Are Return Appointments Important?

- Can't expect these patients to accomplish management objectives without guidance and support of tinnitus specialist
  - They require repeated appointments until problem is sufficiently resolved and/or they are capable of performing self-management effectively



### Why Are Return Appointments Important? (cont.)

- From a health education perspective:
  - Patients recall only about half of the counseling information, and some of the information is remembered incorrectly
  - Patients immediately forget as much as 80% of the information



### Why Are Return Appointments Important? (cont.)

- To ensure that Level 5 patients are using ear-level devices properly and that they remember key counseling points
- Also to ensure that patients are
  - Implementing their individualized sound plans, and modifying the plans to optimize efficacy
  - Using the specific coping skills taught by mental health provider



### Adherence to the Appointment Schedule

- Requires motivation and commitment
  - Only patients with most problematic tinnitus are so inclined
- Patients who live at a distance may not be able to return to the clinic as often as advised
  - Should at least be counseled via telephone, using self-help workbook as a general guide



### 6-Month Appointment

- Final appointment for most patients
  - If final appointment, then same procedures conducted as for standard protocol recommended for all Level 5 appointments
- In addition, THI and THS should be administered and results compared to previous responses to evaluate patient's progress



### 6-Month Appointment (cont.)

- If problems were reported on the *Tinnitus Interview*, then any pertinent questions should be repeated



### Exceptions to the Level 5 Standard Protocol for Audiologists

- Final appointment may be earlier or later than 6 months
- Regardless of when final appointment takes place, procedures for 6-month appointment should be performed during final appointment



### If Patient Requires Intervention Beyond 6 Months

- Progress made to this point should be reviewed with patient along with discussion of potential benefit of further intervention



### If Patient Requires Intervention Beyond 6 Months (cont.)

- Multiple issues can be discussed as potentially contributing to lack of progress
  - Tinnitus problem was so severe that more time and support are needed
  - Effective sound plans not yet identified
  - Patient has not implemented sound plan(s)
  - A psychological component has not been properly managed
- Provide further services if needed



### Telephone Counseling

- Patients may not be able to attend recommended series of return appointments because they live at a distance or for other reasons
- These patients can be counseled adequately over the telephone if they have the self-help workbook to refer to during the counseling



### Self-Help Workbook

- Should have been received by patients at start of Level 3
- Should be key tool for patients during Level 5



### Level 5 Counseling

- All PTM education is designed to help patients develop, and experience success using, self-management strategies that address situations when their tinnitus is most problematic
- Main difference at Level 5 is the one-on-one setting that facilitates direct interaction between patient and clinician



### Some Patients Need One-on-One Counseling

- Some patients do better by receiving ongoing individualized attention from a caring and knowledgeable clinician
- Some patients also need the opportunity to resolve questions or concerns about tinnitus in a private setting where they can express feelings and concerns they might not have been comfortable discussing in a group setting



### Patient Counseling Guide

- *Progressive Tinnitus Management: Counseling Guide*
- Used during Level 5 appointments
- Flip-chart format – laid flat on table between clinician and patient
- Designed to be used primarily by audiologists
  - Similar guide in development for use by mental health providers



### Patient Counseling Guide: Three Sections

- Introductory, follow-up, hyperacusis
  - First two sections correspond with Level 3 PowerPoint presentations
- Normally, use follow-up section (introductory material covered in Level 3)
- Use introductory section with patients:
  - Who have not completed Level 3
  - Who need fundamental counseling (for any reason)



### Demonstrating Personal Listening Devices and Stationary Devices

- Augmentative sound can be very effective for helping to manage reactions to tinnitus
- Should be demonstrated in clinic so patients know what they are and how they work
- No formal protocol for demonstrating these devices



### Level 5 CBT

- Review of CBT coping techniques
- Individualized examination of patient's unique achievements and challenges so far during PTM
- Patients learn how to accept their individual strengths and weaknesses while gaining a sense of control



### CBT Psychotherapists

- Involvement of mental health at Level 5 requires provider skilled in CBT
- CBT psychotherapists understand the importance of behavioral and cognitive theories of the intervention
- They assist patients in learning ways to evaluate and change their thoughts and behaviors



### Further Benefit of CBT

- Patients learn about their tinnitus as it relates to the mind-body system
- Tinnitus often accompanied by symptoms of depression
- By simultaneously addressing tinnitus and depression, patients recognize importance of addressing both mind's reactions to physical symptoms, and physical symptoms that might influence emotions



### Beyond Level 5 Individualized Support

- If patient does not make satisfactory progress after 6 months of Level 5, then a different approach can be considered



## Options for Further Intervention

- Further PTM audiologic counseling (modified as necessary)
- Further CBT counseling (with new components of CBT)
- Tinnitus masking
- Tinnitus retraining therapy
- Neuromonics tinnitus treatment
- *No evidence that one method is superior*



## Conclusions

- Relatively few audiologists have received adequate training in providing clinical services for tinnitus
- PTM is a definable program of care based primarily on:
  - Goal-oriented counseling of various uses of sound for managing reactions to tinnitus
  - Provision of specific coping skills based on CBT



## Lack of Standardized Guidelines

- Standardized clinical guidelines for tinnitus do not exist
- Training is highly variable among audiology graduate programs
  - Any training that exists reflects biases, which is understandable because research does not conclusively support any one form of management



## Areas that Require Consensus to Achieve Standardization

- Defined clinical procedures
- Research evidence to support clinical procedures
- Audiology graduate training
- Patient educational programs
- (PTM establishes basic procedures that can be used until more formal standardized techniques are developed and validated)



## Importance of Patient Education

- Effectiveness of PTM depends on effectiveness of patient education
- Essential that evidence-based methods of patient education are utilized
- PTM adheres to a number of principles that have been demonstrated to optimize effective patient learning of skills for self-management of health



## Patient-Centered Approach

- Behavioral changes do not come easily, especially when behaviors and underlying cognitions are long-standing habits
- Counseling with PTM is patient-centered
  - Approach shown to greatly enhance motivation for making adaptive changes for improving health



## Patient Participation

- In PTM, patients participate in defining the problem and identifying specific behavior changes for managing the problem
- Each patient becomes an active participant in making decisions and ultimately is in charge of making lifestyle adjustments to mitigate the problem



- Understanding that the patient is an expert in his or her own life circumstances, problems, resources, and abilities is the key that enables this collaborative tinnitus self-management approach to succeed

