
Similarities Between Chronic Pain
Management
and
Progressive Tinnitus Management (PTM)

Presentation for the
HSR&D Pain Cyberseminar Program
Spotlight on Pain Management

Tuesday, February 7, 2012

Caroline Schmidt, PhD

James Henry, PhD

Paula Myers, PhD

Tara Zaugg, AuD

Samantha Boris-Karpel, PhD

Disclosures of
Conflict of Interest:
None

Support provided by:

VA Rehabilitation Research & Development Service

VA Connecticut Healthcare System, West Haven, CT

VA Portland, National Center for Rehabilitative Auditory
Research

James A. Haley Veterans' Hospital, Tampa, Florida

Program Objectives

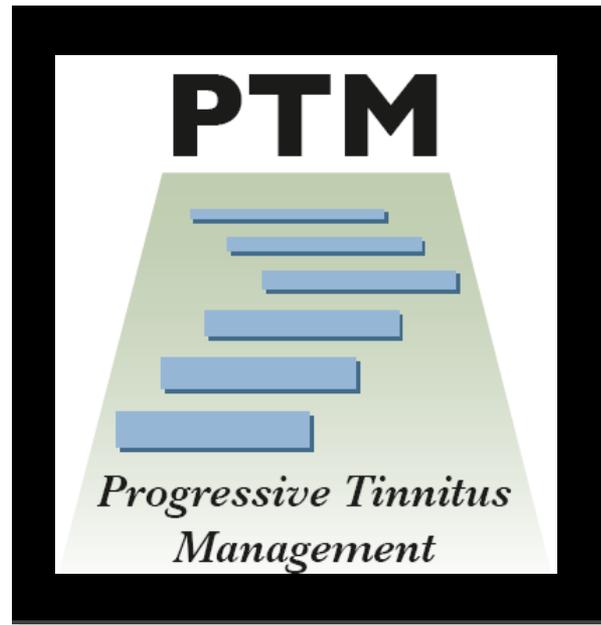
1. Overview of tinnitus
2. Similarities between chronic tinnitus and chronic pain
3. Overview of Progressive Tinnitus Management (PTM)
4. Chronic pain management vs. PTM
5. Roles of various health providers in PTM

Acknowledgments

- Robert Kerns, PhD
- Susan Griest, MPH
- Christine Kaelin, MBA
- Lynn Kitagawa, MFA
- Marcia Legro, PhD
- Johnna Gonzalez, MS
- Emily Thielman, MS



1. Overview of Tinnitus



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

Do You Have Tinnitus?

- Everyone has ear noises—not everyone has tinnitus



More Definitions

- Neurophysiologic vs. somatic tinnitus
- Subjective vs. objective tinnitus
- Permanent tinnitus

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



How Can Patients Learn to Manage Their Reactions to Tinnitus?

- Bottom line: They need to learn how to regulate their stress and emotions by:
 - Using sound
 - Using relaxation techniques
 - Using distraction strategies
 - Changing negative thoughts
- All of this requires **education leading to skill building**

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**

Methods That Have an Evidence-basis

- Hearing aids
- Tinnitus Masking
- Tinnitus Retraining Therapy (TRT)
- Neuromonics Tinnitus Treatment
- Cognitive-Behavioral Therapy (CBT)
- Progressive Tinnitus Management (PTM)

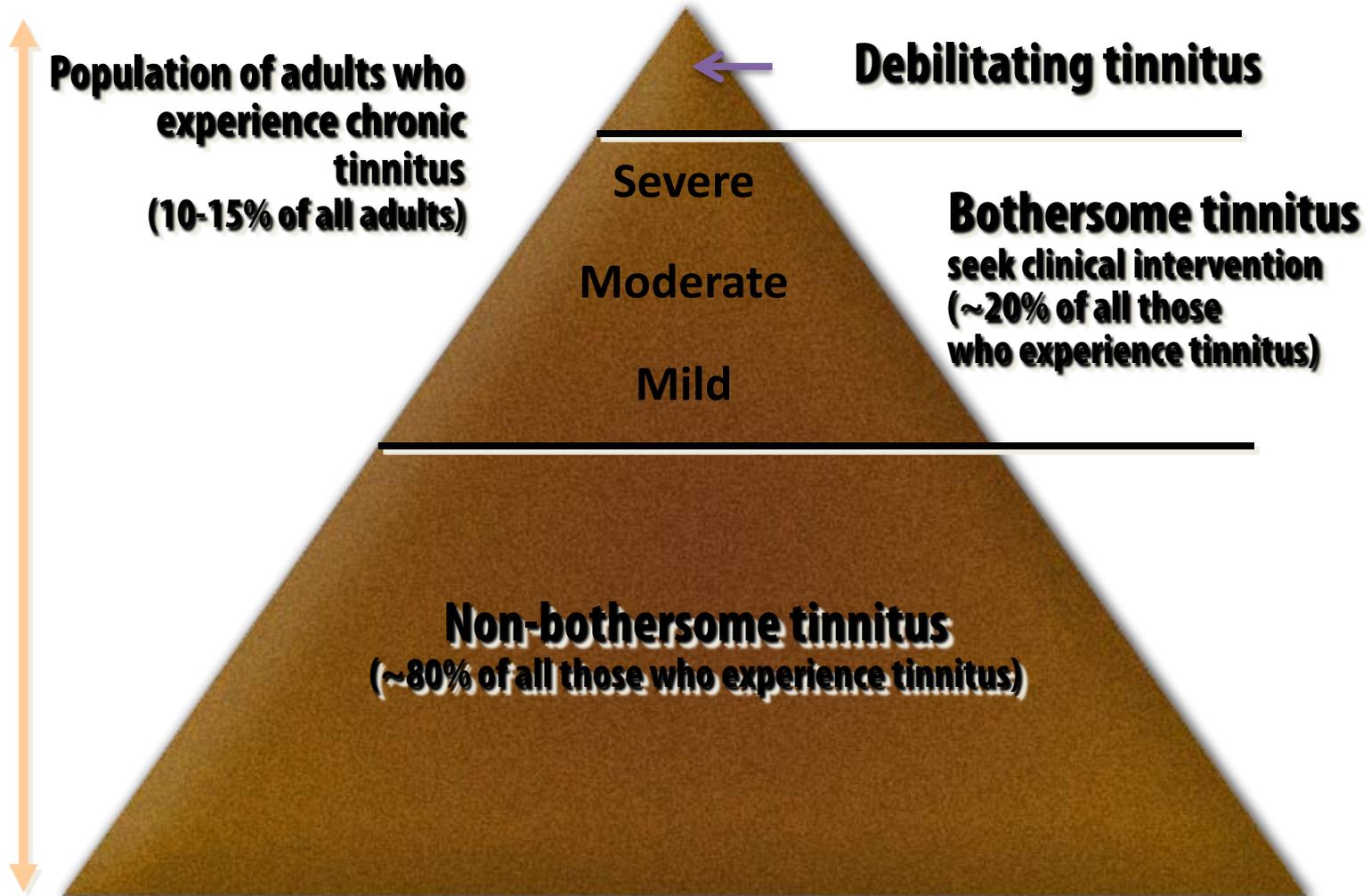
Which Method is the Most Effective?

- No evidence proving 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 behavioral and cognitive modification**

Prevalence of Tinnitus

- 10-15% of adults
- Estimates for U.S.: 40-50 million
 - 10-12 million seek some form of medical help
 - 2.5 million “debilitated” by tinnitus

The Tinnitus Pyramid



From: Dobie RA. Overview: suffering from tinnitus. In: Snow JB, editor. Tinnitus: Theory and Management. Lewiston, NY: BC Decker Inc.; 2004. p. 1-7.

What Do We See in VA Audiology Clinics? Increased Claims for Tinnitus & Hearing Loss Disability



American Tinnitus Association

A SPLIT-SECOND
BLAST. A LIFETIME
OF HEAD NOISE.

Help us cure it.

Help us PREVENT it!

Tinnitus is #1 – *unfortunately*

- Most common individual disability (744,871 Veterans) for all Veterans receiving disability payments in FY 2010
- Also, most common disability among Veterans who began receiving benefits during FY 2010 (92,260 Veterans – 10.7% of all new disability awards)

2. Similarities Between Tinnitus and Pain



Chronic Tinnitus	Chronic Pain
Tinnitus symptom is subjective report (rare cases of objective tinnitus)	Pain perceptions can be measured subjectively (subjective condition)
Variety of causes	Variety of causes
Not just one mechanism behind tinnitus perception	Not just one mechanism behind pain perception
Often unable to cure underlying cause of tinnitus, but can often manage resulting problems (primary suffering of symptom itself and secondary suffering of way one reacts to symptom) to minimize impact	Often unable to cure underlying cause of pain, but can often manage resulting problems (primary suffering of symptom itself and secondary suffering of way one reacts to symptom) to minimize impact

Subjective

- Tinnitus
 - Subjective report vs. objective
- Pain
 - Perception of pain vs. observable stimulus causing nociception

Causes

- Tinnitus
 - Many known causes including acoustic trauma
 - Some causes cannot be known
- Pain
 - May be due to injury, disease, or unknown

Several Mechanisms

The neurological input comes from....

- Tinnitus
 - Ear and/or brain
- Pain
 - Peripheral and/or central source

No Cure – Management is Key

- Tinnitus and Chronic Non-Cancer Pain *often* have no cure
 - Management targets *reactions* to the stimulus
 - Note: Reactions are the patients' behaviors (i.e. movement, nutrition, rx compliance); cognitions (thoughts) and feelings

3. Overview of PTM



Controlled Clinical Studies

1. Comparison of masking and TRT (**n=126**)
2. Group education using TRT counseling (**n=269**)
3. Multi-site study to compare masking, TRT, and “tinnitus education” (**n=149**)
4. Development of PTM (**n=221**)
5. Adaptation of PTM for telephone-based counseling of TBI patients (**n=36**)
6. Pilot Study of CBT for Tinnitus (**n=20**)

New Studies Underway

1. Multi-site controlled study of PTM
 - Memphis VAMC
 - VA Connecticut Healthcare System (West Haven, CT)
2. Telephone tinnitus education for patients with TBI – nationwide study

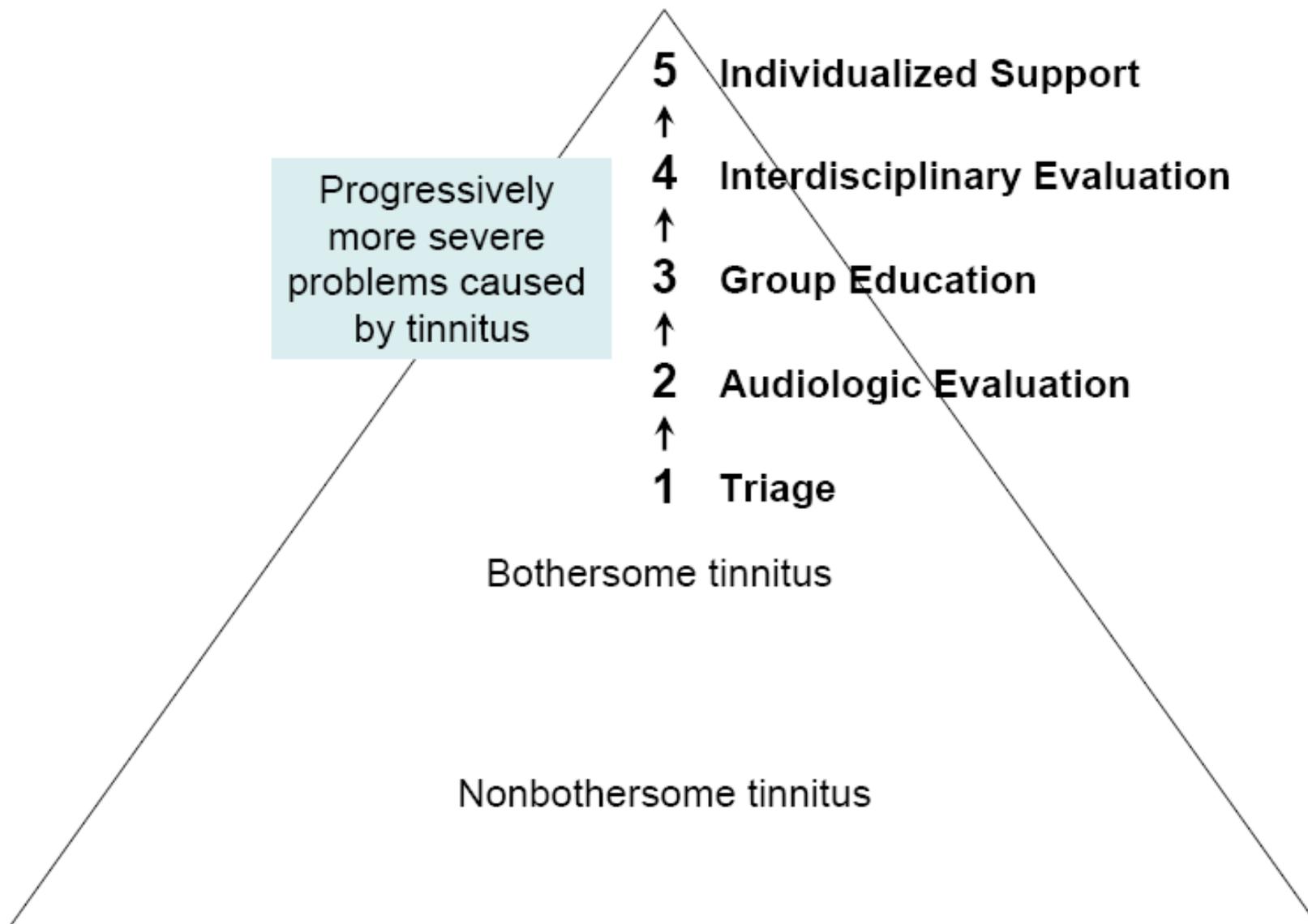
Development of PTM

- Research data supporting PTM come primarily from these trials, but also from numerous studies (e.g., Cochrane Review 2010) that have documented the effectiveness of using **therapeutic sound in different ways & cognitive-behavioral therapy** for tinnitus management



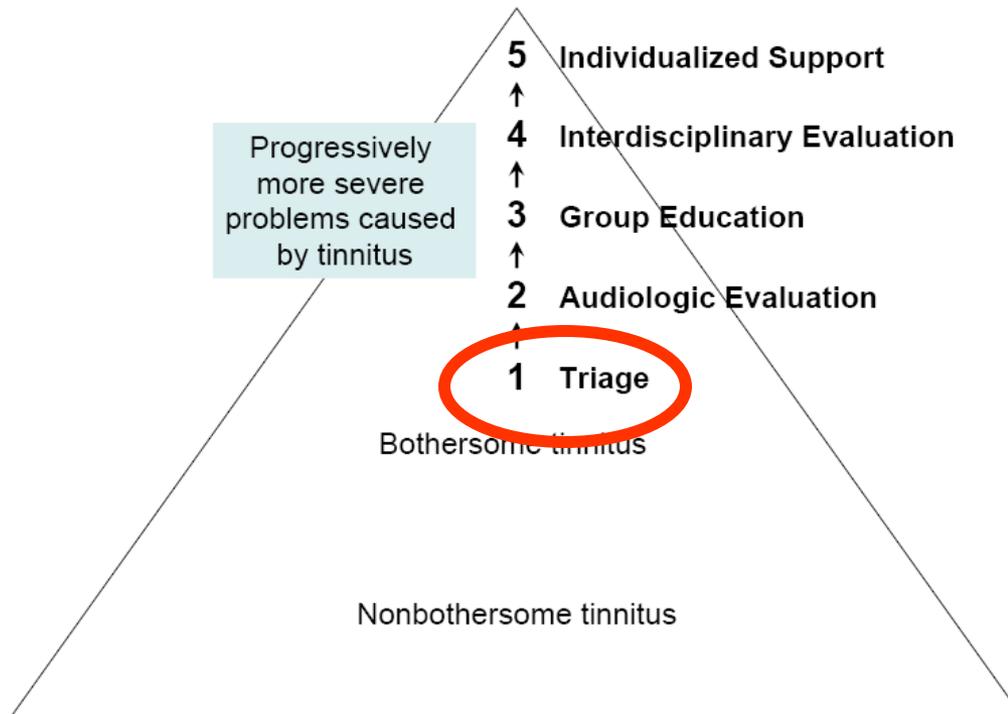
Five Hierarchical Levels of Clinical Services with PTM





Level 1 Triage

- Guidelines for referring patients at the initial clinic point-of-contact



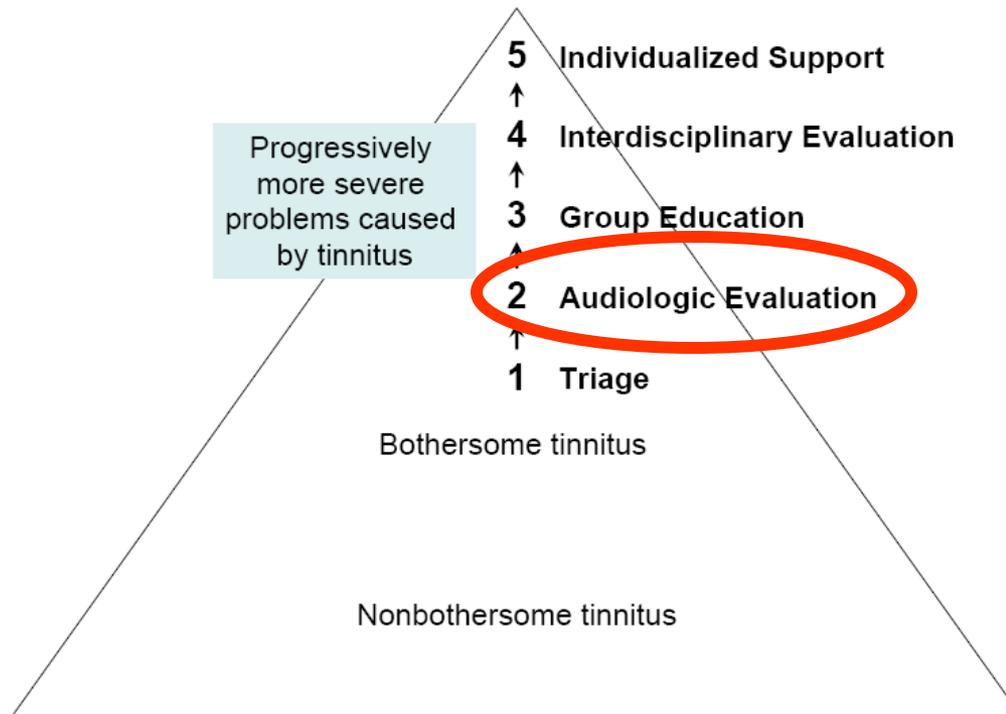
Tinnitus Triage Guidelines

(My Patient Complains About Tinnitus—What Should I Do?)

If the patient:	Refer to:
<p>1. Has physical trauma, facial palsy, or unexplained sudden hearing loss</p> <p>Has any other urgent medical condition</p>	<p>Emergency Care or Otolaryngology (If unexplained sudden hearing loss—Audiology referral prior to Otolaryngology visit same day) (emergency referral)</p>
<p>2. Has suicidal/homicidal ideations</p> <p>Manifests obvious mental health problems</p>	<p>Emergency Care or Mental Health—report suicidal ideation (may be emergency—if so escort patient to Emergency Care or Mental Health)</p>
<p>3. Has ANY of the following:</p> <ul style="list-style-type: none">▪ Symptoms suggest somatic origin of tinnitus (example: tinnitus that pulses with heartbeat)▪ Ear pain, drainage, or malodor▪ Vestibular symptoms (example: dizziness/vertigo)	<p>Otolaryngology (urgency determined by clinician; refer to audiologist for follow-up management) Can refer to Primary Care if ear pain, drainage, or malodor</p>
<p>4. Has ALL of the following:</p> <ul style="list-style-type: none">▪ 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	<p>Audiology (not urgent)</p>

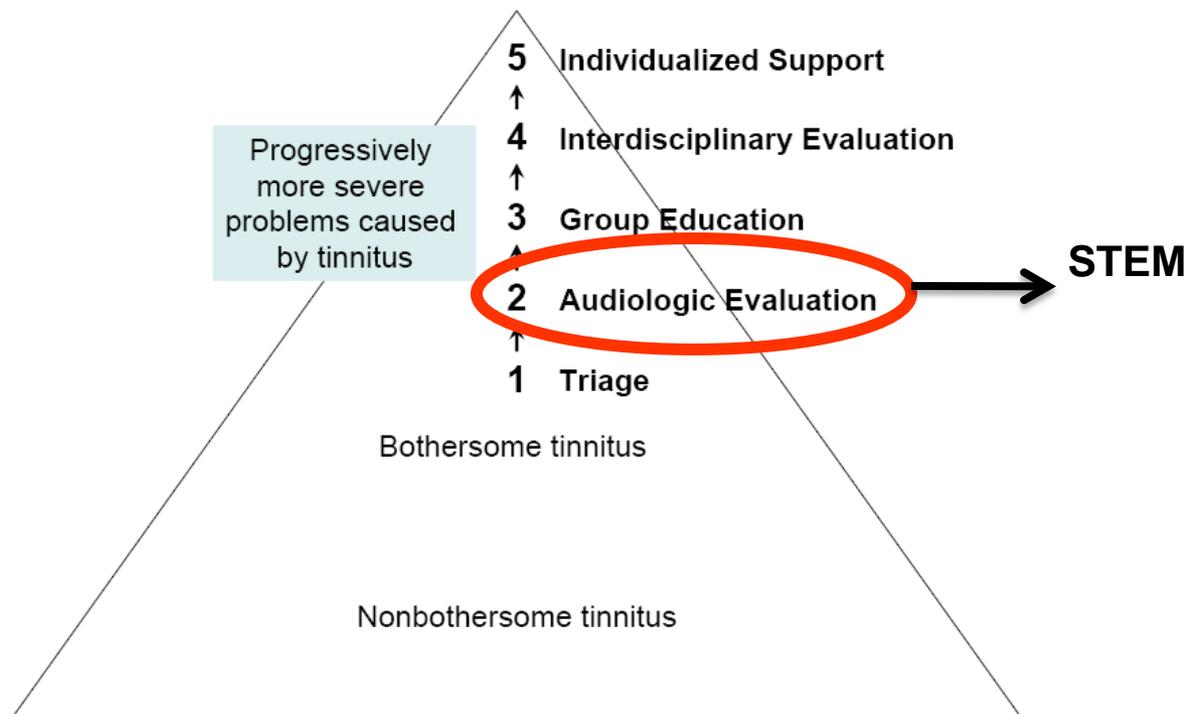
Level 2 Audiologic Evaluation

- Standard audiologic evaluation, plus brief assessment of tinnitus impact



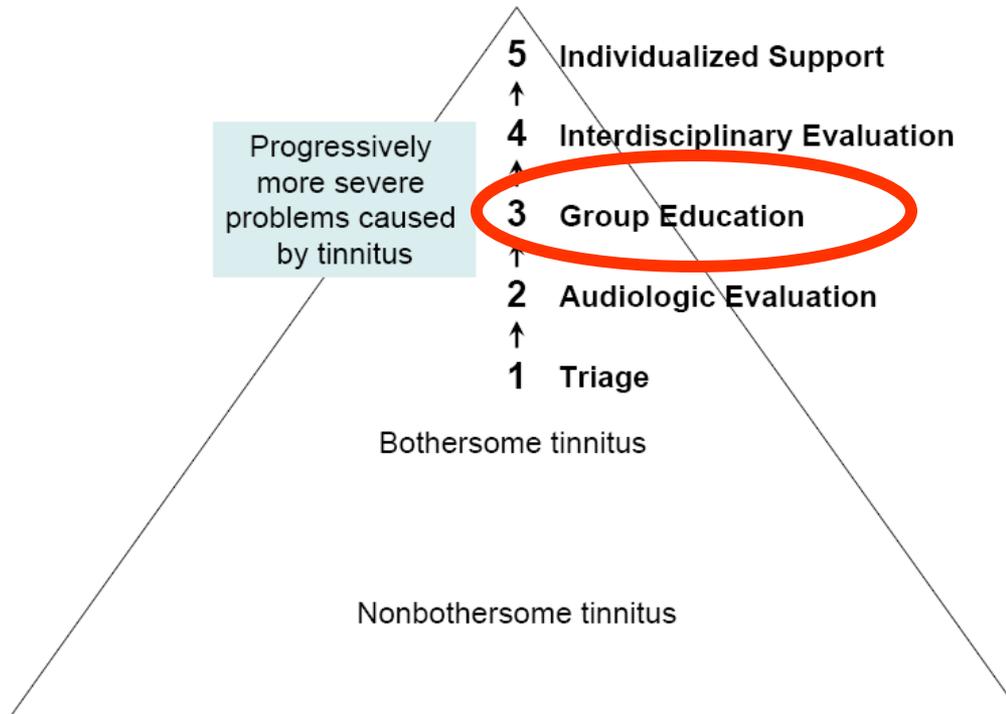
Sound Tolerance Evaluation and Management (STEM)

- Adjunct procedures to evaluate and treat a severe sound tolerance problem



Level 3 Group Education

- Workshops for patients who require tinnitus-specific intervention

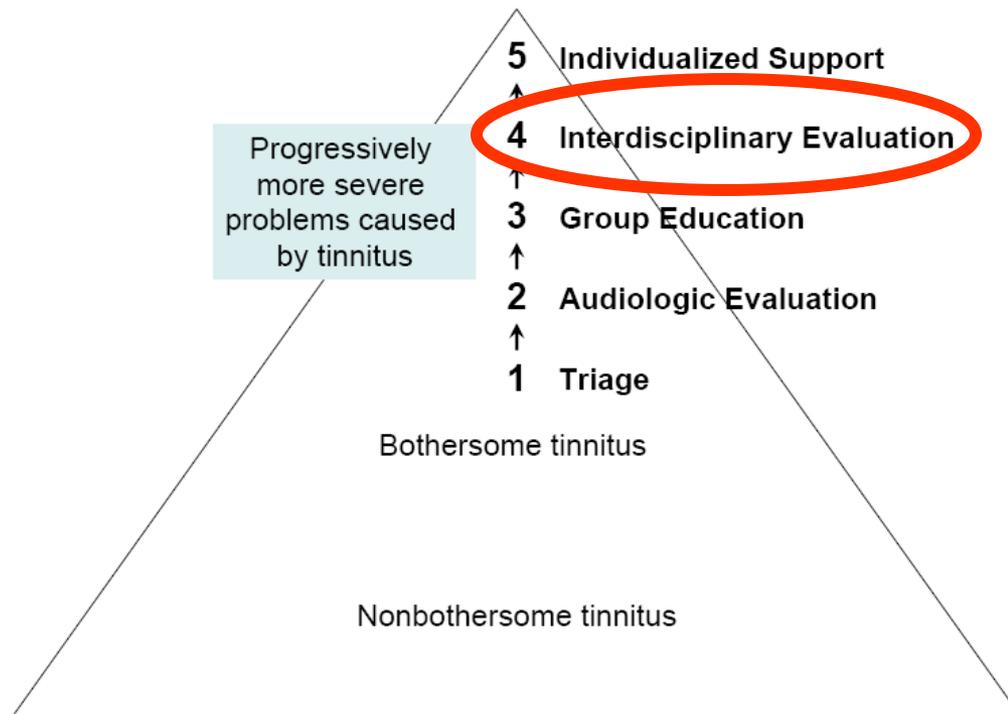


Level 3 Workshops

- Series of 5 workshops
- Two are lead by an audiologist
 - Focus on learning to use sound to manage reactions to tinnitus
- Three are lead by a mental health professional
 - Based on CBT

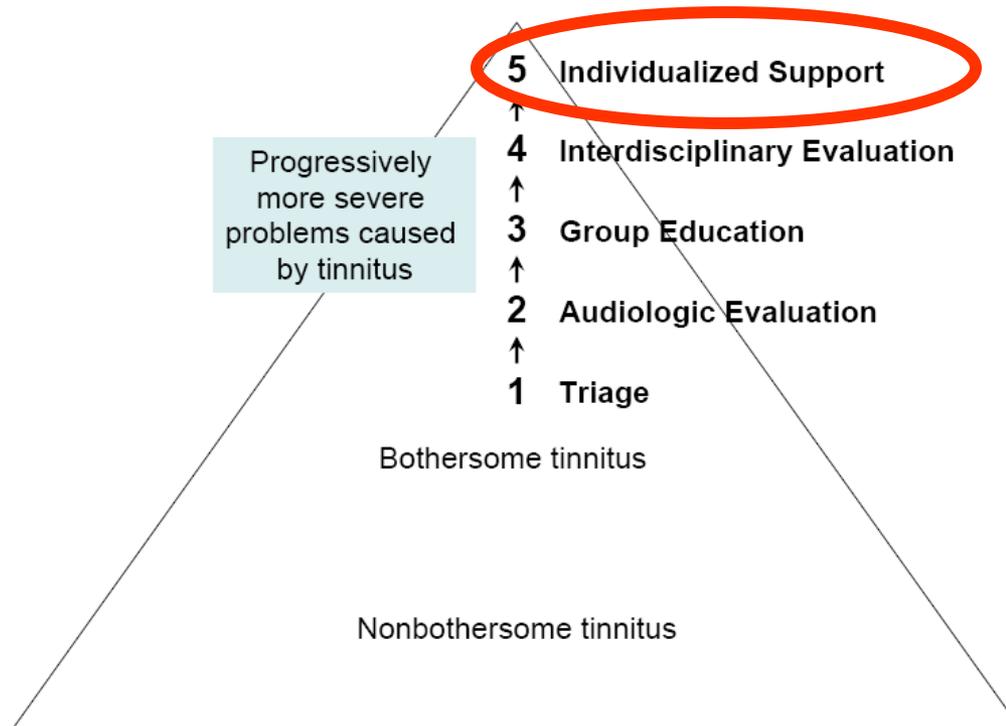
Level 4 Interdisciplinary Evaluation

- In-depth evaluation of patients who require services beyond Level 3



Level 5 Individualized Support

- One-on-one support for patients who require longer-term intervention from an audiologist and/or a mental health provider



PTM Books—Clinical Tools

- *Progressive Tinnitus Management: Clinical Handbook for Audiologists*
- *How to Manage Your Tinnitus: A Step-by-Step Workbook*
- *Progressive Tinnitus Management: Counseling Guide*

Progressive Tinnitus Management Clinical Handbook for Audiologists

James A. Henry
Tara L. Zaugg
Paula J. Myers
Caroline J. Kendall



How to Manage Your Tinnitus: A Step-by-Step Workbook Third Edition

James A. Henry, PhD
Tara L. Zaugg, AuD
Paula J. Myers, PhD
Caroline J. Kendall, PhD



VA Online Tinnitus Training Course

- First 12 modules completed and coming online ~ April
 - Module 12 is a “virtual clinical practicum”
- Additional modules (13-19)
 - Should be online by end of year
- Training modules in development for psychologists

4. Chronic Pain Management Versus PTM



Chronic Pain Management	Progressive Tinnitus Management
Stepped Care Model is the trending model in the VA	Hierarchical Care Model is the trending model in the VA
Multi- or Interdisciplinary	Interdisciplinary
Most often concerned with management versus cure	Concerned with management versus cure
Individualized plan of care	Individualized plan of care (facilitated by sound plan and changing thoughts and feeling worksheets)

Stepped versus Progressive

- Tinnitus
 - Hierarchical (Progressive)
- Pain
 - Stepped Care

Note: These are new or trending VA gold-standard health service models and are not yet fully-implemented by all sites.

Interdisciplinary

- Tinnitus
 - Includes primary care, audiology, mental health, ENT, otology
 - May also include psychiatry, dentistry, neurology, occupational therapy, and others
- Pain
 - Includes primary care, nursing, mental health, physical therapy, occupational therapy, anesthesiology, neurology, orthopedics, and others

Symptom Management

- Tinnitus and Pain
 - Patients learn *coping skills* to manage their reactions

Individualized Plan of Care

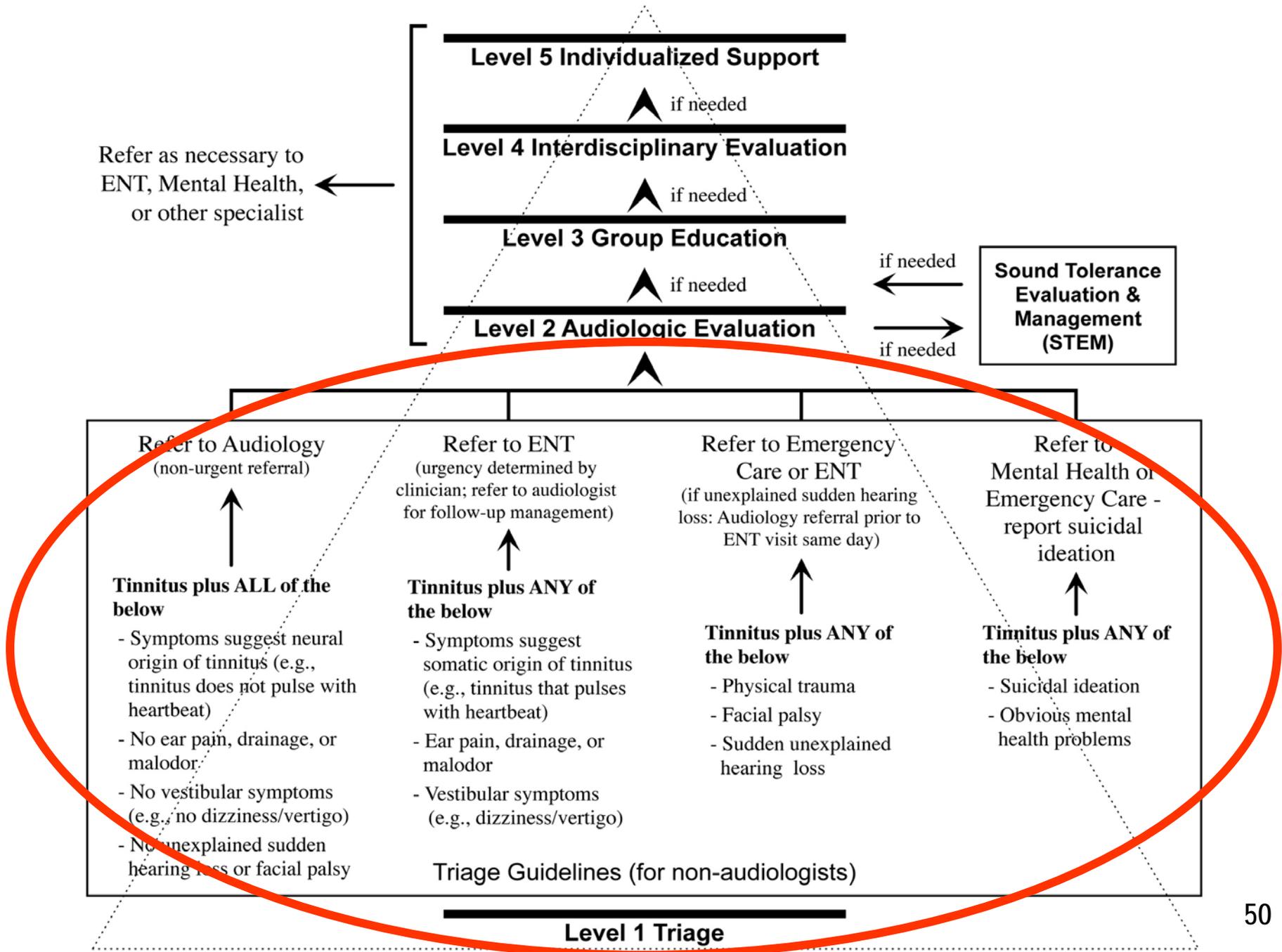
- Tinnitus
 - Develops a customized management plan to account for individual differences
- Pain
 - Develops a treatment plan to account for individual differences

5. Roles of Various Health Providers in PTM



Tinnitus Management 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



When is an ENT Exam Required?

- Any of the following:
 - Pulsatile tinnitus / somatosounds
 - Ear pain, drainage, or malodor
 - Dizziness or vertigo
 - Asymmetric hearing loss
 - Conductive hearing loss
 - Rapid change in symptoms
- These could indicate a treatable and/or dangerous medical condition

Role of Audiologists in PTM

- Level 1: Provide referral sources with triage guidelines
- Level 2: Audiologic evaluation and brief assessment of tinnitus (determine need for hearing, tinnitus, or sound tolerance intervention, and referrals PRN)
- Level 3: Group education
- Level 4: In-depth evaluation
- Level 5: Individual support and counseling

Level 3 with Audiologist

- Explain principles of using sound to manage tinnitus
- Sound Plan Worksheet used to develop individualized “sound plan” to manage most bothersome tinnitus situation
 - “Homework” is to implement sound plan developed during first session
- Pts asked to return for follow-up session 2 weeks later
 - Try to improve on sound plan
 - Learn new information

Tinnitus Problem Checklist

1. My most bothersome tinnitus situation is:

- | | |
|---|--|
| <input type="checkbox"/> Falling 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.¹

2. My second most bothersome tinnitus situation is:

- | | |
|---|--|
| <input type="checkbox"/> Falling 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"/> Falling 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.

Three types of sound can be used to manage tinnitus

3 types of sound



1. Write down one bothersome sound that bothers you.

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

3. Write down one sound you try.

Soothing sound



Background sound



Interesting sound



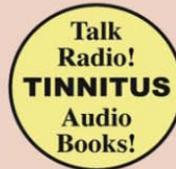
Soothing sound



Background sound



Interesting sound



Worksheet

4. Use the sound you plan to use

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

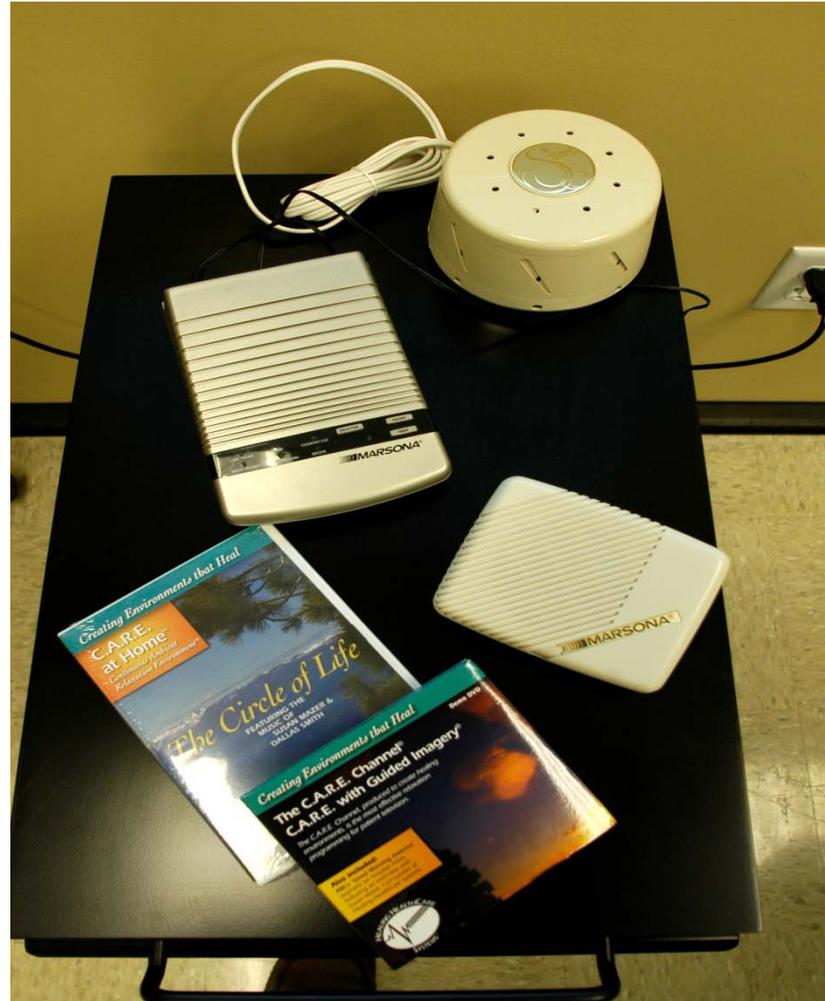
	Not at all	A little	Moderately	Very much	Extremely
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					

	Not at all	A little	Moderately	Very much	Extremely
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					

	Not at all	A little	Moderately	Very much	Extremely
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					

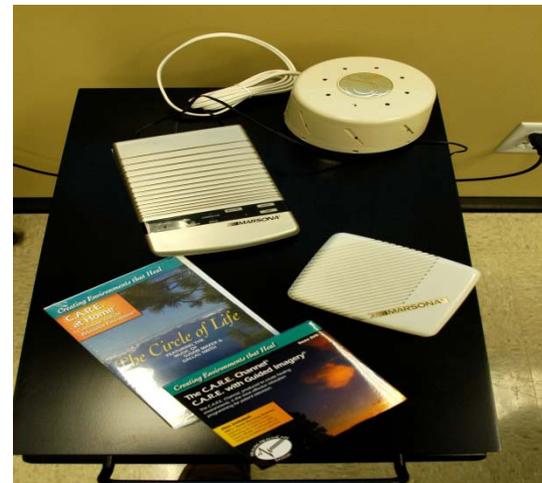
6. Comments
When you find something that works well (or not so well) please comment. You do not need to wait 1 week to write your comments.

Non-Customized Tinnitus Management Devices



Demonstrating Personal Listening Devices, Stationary Devices, and Apps

- 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



Sleep Problems with Tinnitus (and Pain)



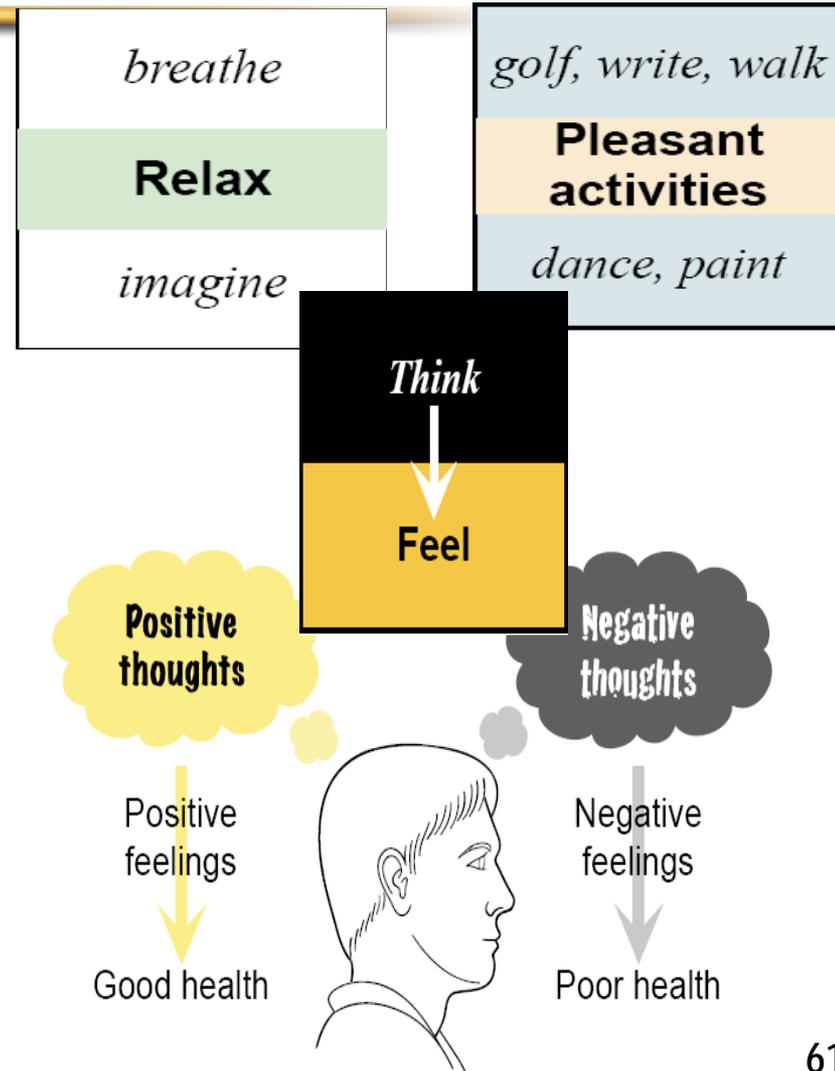
Role of Mental Health Providers in PTM

- Level 1: Refer appropriately
- Level 2: Respond to urgent referrals
- Level 3: Provide coping techniques (based on CBT) via groups
- Level 4: Assess psychological symptoms
- Level 5: Provide coping techniques (based on CBT) with individuals

Essential Coping Techniques (for Tinnitus)

Three coping techniques are taught:

1. Stress reduction (“relaxation”)
2. Attention diversion (“planning pleasant activities”)
3. Cognitive restructuring (“changing thoughts”)



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

Level 3 with the MH Provider

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

Changing Thoughts and Feelings Worksheet

- Modeled after and used simultaneously with Sound Plan Worksheet used by the audiologist
- Helps patients track their use of three coping skills taught during Levels 3 and 5
- Used throughout sessions with objective for participants to develop personalized plans for managing their reactions to tinnitus in specific problem-situations

Changing Thoughts and Feelings Worksheet

1. From the Tinnitus Problem Checklist, write down one bothersome tinnitus situation _____

2. Check one or more of the three skills to manage the situation

Relaxation exercises

<i>breathe</i>
Relax
<i>imagine</i>

Deep breathing

Imagery

Other _____

Plan pleasant activities

<i>golf, write, walk</i>
Pleasant activities
<i>dance, paint</i>

Activity 1 _____

Activity 2 _____

Activity 3 _____

Changing thoughts

Think
↓
Feel

Old thought _____

New thought _____

4. Use your plan over the next week. How helpful was each exercise?

	Not at all	A little	Moderately	Very much	Extremely
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					

	Not at all	A little	Moderately	Very much	Extremely
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					

	Not at all	A little	Moderately	Very much	Extremely
<input type="checkbox"/>					

5. Comments
When you find something that works well (or not so well) please comment. You do not need to wait 1 week to write your comments.

Conclusions

- Tinnitus and pain management share many similarities
- Like Chronic Pain Management, PTM is progressive, individualized, and interdisciplinary
 - Flexible framework
 - *Similarities in impact of symptoms and ways they can be managed with transferable lessons that these conditions are not fixed*

To Learn More about the PTM Protocol Created for VA <http://www.va.gov/health/NewsFeatures/20110524a.asp>

New Treatment Options for Tinnitus Sufferers - Health Care - Windows Internet Explorer provided by James A. Haley Veterans Hosp

http://www.va.gov/health/NewsFeatures/20110524a.asp

File Edit View Favorites Tools Help

United States DEPARTMENT OF VETERANS AFFAIRS

Search All VA Web Pages Search Open Advanced Search

Home Veteran Services Business About VA Media Room Locations Contact Us Health Care

HEALTH CARE

Health Care Home
Inside Veterans Health
Find Care
Health Programs
Health Topics — A to Z Index
About VHA
My HealtheVet
National Center for Patient Safety
CHAMPVA

New Treatment Options for Tinnitus Sufferers

The repetitive stutter of a machine gun, shocking boom of mortars, the deafening drone of helicopter rotors; the sounds of war are hard to ignore and can leave many Veterans with permanent hearing damage.

Tinnitus is the number one disability among Veterans and it affects at least one in every 10 American adults.

Some describe ringing sounds, a buzzing sound, a high-pitched whistle, or numerous other sounds. The causes and effects of tinnitus vary from individual to individual, so researchers at the National Center for Rehabilitative Auditory Research approached treatment options the same way.

"Because tinnitus has many causes, many of which are outside the audiology scope of practice, the approach to tinnitus should be interdisciplinary," explained Dr. Paula Myers, Audiology Section Chief at the [Tampa VA Hospital](#).

"Some of these services are performed by audiologists and some are referred to appropriate professionals. The goal is not to silence tinnitus, because there is no cure. Rather, the goal is for patients to learn to self-manage their reactions to the tinnitus."

In 2010, every VA medical facility audiology clinic received copies of the PTM clinical handbook, counseling guide and hundreds of patient-education workbooks.

Trusted sites 100%

Start 7 Microsoft Office... TelephoneInterve... Performance Eval... New Treatment ... 8:18 AM

http://www.ncrar.research.va.gov/Education/Documents/TinnitusDocuments/Index.asp

Progressive Tinnitus Management (PTM) - NCRAR - Windows Internet Explorer provided by James A. Haley Veterans Hospital

http://www.ncrar.research.va.gov/Education/Documents/TinnitusDocuments/Index.asp

File Edit View Favorites Tools Help

Progressive Tinnitus Management (PTM) - NCRAR

UNITED STATES DEPARTMENT OF VETERANS AFFAIRS

Search All VA Web Pages

Search

Open Advanced Search

Home Veteran Services Business About VA Media Room Locations Contact Us NCRAR

NCRAR

NCRAR Home
NCRAR Conference
Site Search

Progressive Tinnitus Management (PTM)

Progressive Tinnitus Management: Clinical Handbook for Audiologists

- Foreword, Introduction, Table of Contents, Authors and Contributors
- Chapter 1 – Definitions and Background
- Chapter 2 – Research Leading to PTM
- Chapter 3 – Overview of PTM
- Chapter 4 – Level 1 Triage
- Chapter 5 – Level 2 Audiologic Evaluation
- Chapter 6 – Sound Tolerance Evaluation and Management (STEM)
- Chapter 7 – Level 3 Group Education
- Chapter 8 – Level 4 Interdisciplinary Evaluation
- Chapter 9 – Level 5 Individualized Support
- References
- Appendices
- Index

[Descriptions of DVD and CD](#)

"Managing Your Tinnitus" DVD (coming soon)

- Video 1: "Managing Your Tinnitus" for group viewing, Session 1
- Video 2: "Managing Your Tinnitus" for group viewing, Session 2
- Video 3: "Managing Your Tinnitus" Imagery Exercise
- Video 4: "Managing Your Tinnitus" Deep Breathing Exercise

Trusted sites 100%

Start 6 Microsoft Office... C:\Documents and... 2 Microsoft Office... Progressive Tin... 1:08 PM

Contact us:

caroline.schmidt@va.gov

james.henry@va.gov

paula.myers@va.gov

tara.zaugg@va.gov

samantha.boris@va.gov

References and Resources:

Chan, S. W., & Reade, P. C. (1994). Tinnitus and temporomandibular pain-dysfunction disorder. *Clinical Otolaryngology and Allied Sciences*, 19(5), 37-80.

Cima, R., & Anteunis, L. (2009). Tinnitus hurts! A Cognitive-Behavioural Analysis of Tinnitus-related Pain. *Health San Francisco*, 6200-6200.

DeRidder, D., Elgoyhen, A. B., Romo, R., & Langguth, B. (2011). Phantom percepts: tinnitus and pain as persisting aversive memory networks. *Proceedings of the National Academy of Sciences of the United States of America*, 108(20), 8075-8080. Retrieved from <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3100980&tool=pmcentrez&rendertype=abstract>

Folmer, R. L., Griest, S. E., & Martin, W. H. (2001). Chronic tinnitus as phantom auditory pain. *Otolaryngology head and neck surgery official journal of American Academy of Otolaryngology Head and Neck Surgery*, 124(4), 394-400. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/11283496>

Henry, J.A., Zaugg, T.L., Myers, P.J., Kendall, C.J., & Michaelides, E.M. (2010). A triage guide for tinnitus. *The Journal of Family Practice*, 59(7), 389-393.

References and Resources (continued)

Henry, J.A., Zaugg, T.L., Myers, P.J., & Kendall, C.J. (2010). Progressive Tinnitus Management: Counseling Guide. Long Beach, CA: VA Employee Education System.

Henry, J.A., Zaugg, T.L., Myers, P.J., & Kendall, C.J. (2010). Progressive Tinnitus Management: How to Manage Your Tinnitus: A Step-by-Step Workbook. Long Beach, CA: VA Employee Education System.

Henry, J.A., Zaugg, T.L., Myers, P.J., & Kendall, C.J. (2010). Progressive Tinnitus Management: Clinical Handbook for Audiologists. Long Beach, CA: VA Employee Education System.

Henry J.A., Zaugg T.L., Myers P.J., Kendall C.J., & Turbin, M.B. (2009). Principles and application of educational counseling used in progressive audiologic tinnitus management. *Noise and Health*, 11(42), 33-48.

Henry, J.A., Zaugg, T.L., Myers, P.J., & Schechter, M.A. (2008). Using therapeutic sound with Progressive Audiologic Tinnitus Management. *Trends in Amplification*. 12(3): 188-209.

References and Resources (continued)

Isaacson, J. E., Moyer, M. T., Schuler, H. G., & Blackall, G. F. (2003). Clinical associations between tinnitus and chronic pain. *Otolaryngology head and neck surgery official journal of American Academy of Otolaryngology Head and Neck Surgery*, 128(5), 706-710. Retrieved from <http://linkinghub.elsevier.com/retrieve/pii/S0194599803002274>

Martinez Devesa, P. , Waddell, A. , Perera, R. , & Theodoulou, M. (2010). Cognitive behavioural therapy for tinnitus. *Cochrane database of systematic reviews Online*, 48(1), CD005233. John Wiley & Sons, Ltd. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/17253549>

Møller, A. R. (2007). Tinnitus and pain. (L. B, H. G, K. T, C. A, & A. J. Møller, Eds.) *Progress in Brain Research*, 166, 47-53. Elsevier. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/17956770>

Møller, A. R. (2000). Similarities between severe tinnitus and chronic pain. *Journal of the American Academy of Audiology*, 11(3), 115-124.

References and Resources (continued)

Sadlier, M., Stephens, S. D. G., & Kennedy, V. (2008). Tinnitus rehabilitation: a mindfulness meditation cognitive behavioural therapy approach. *The Journal of Laryngology and Otology*, 122(1), 31-37. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/17451612>

Tonndorf, J. (1987). The analogy between tinnitus and pain: a suggestion for a physiological basis of chronic tinnitus. *Hearing Research*, 28(2-3), 271-275. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/2820913>