Similarities Between Chronic Pain Management and Progressive Tinnitus Management (PTM)
Presentation for the
HSR&D Pain Cyberseminar Program
Spotlight on Pain Management

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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

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- 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

Population of adults who experience chronic tinnitus (10-15% of all adults)

Non-bothersome tinnitus (~80% of all those who experience tinnitus)

Bothersome tinnitus seek clinical intervention (~20% of all those who experience tinnitus)

Debilitating tinnitus

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

American Tinnitus Association

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
<table>
<thead>
<tr>
<th>Chronic Tinnitus</th>
<th>Chronic Pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tinnitus symptom is subjective report (rare cases of objective tinnitus)</td>
<td>Pain perceptions can be measured subjectively (subjective condition)</td>
</tr>
<tr>
<td>Variety of causes</td>
<td>Variety of causes</td>
</tr>
<tr>
<td>Not just one mechanism behind tinnitus perception</td>
<td>Not just one mechanism behind pain perception</td>
</tr>
<tr>
<td>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</td>
<td>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</td>
</tr>
</tbody>
</table>
Subjective

• Tinnitus
  – Subjective report vs. objective

• Pain
  – Perception of pain vs. observable stimulus causing nocioception
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
Bothersome tinnitus

Nonbothersome tinnitus

1. Triage
2. Audiologic Evaluation
3. Group Education
4. Interdisciplinary Evaluation
5. Individualized Support

Progressively more severe problems caused by tinnitus
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?)*

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

PTM

Progressive Tinnitus Management
<table>
<thead>
<tr>
<th>Chronic Pain Management</th>
<th>Progressive Tinnitus Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stepped Care Model is the trending model in the VA</td>
<td>Hierarchical Care Model is the trending model in the VA</td>
</tr>
<tr>
<td>Multi- or Interdisciplinary</td>
<td>Interdisciplinary</td>
</tr>
<tr>
<td>Most often concerned with management versus cure</td>
<td>Concerned with management versus cure</td>
</tr>
<tr>
<td>Individualized plan of care</td>
<td>Individualized plan of care (facilitated by sound plan and changing thoughts and feeling worksheets)</td>
</tr>
</tbody>
</table>
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
Tinnitus Guidelines (for non-audiologists)

Tinnitus plus ALL of the below
- Symptoms suggest neural origin of tinnitus (e.g., tinnitus does not pulse with heartbeat)
- No ear pain, drainage, or malodor.
- No vestibular symptoms (e.g., no dizziness/vertigo)
- No unexplained sudden hearing loss or facial palsy

Refer to ENT (urgency determined by clinician; refer to audiologist for follow-up management)

Tinnitus plus ANY of the below
- Symptoms suggest somatic origin of tinnitus (e.g., tinnitus that pulses with heartbeat)
- Ear pain, drainage, or malodor
- Vestibular symptoms (e.g., dizziness/vertigo)

Refer to Emergency Care or ENT (if unexplained sudden hearing loss: Audiology referral prior to ENT visit same day)

Tinnitus plus ANY of the below
- Physical trauma
- Facial palsy
- Sudden unexplained hearing loss

Refer to Mental Health or Emergency Care - report suicidal ideation

Tinnitus plus ANY of the below
- Suicidal ideation
- Obvious mental health problems

Level 1 Triage

Level 2 Audiologic Evaluation

Level 3 Group Education

Level 4 Interdisciplinary Evaluation

Level 5 Individualized Support

Sound Tolerance Evaluation & Management (STEM)

Refer as necessary to ENT, Mental Health, or other specialist
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:
   - [ ] Falling asleep at night
   - [ ] Staying asleep at night
   - [ ] Waking up in the morning
   - [ ] Reading
   - [ ] Working at the computer
   - [ ] Relaxing in my recliner
   - [ ] Napping during the day
   - [ ] Planning activities
   - [ ] Driving
   - [ ] 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:
   - [ ] Falling asleep at night
   - [ ] Staying asleep at night
   - [ ] Waking up in the morning
   - [ ] Reading
   - [ ] Working at the computer
   - [ ] Relaxing in my recliner
   - [ ] Napping during the day
   - [ ] Planning activities
   - [ ] Driving
   - [ ] Other ____________________________

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

3. My third most bothersome tinnitus situation is:
   - [ ] Falling asleep at night
   - [ ] Staying asleep at night
   - [ ] Waking up in the morning
   - [ ] Reading
   - [ ] Working at the computer
   - [ ] Relaxing in my recliner
   - [ ] Napping during the day
   - [ ] Planning activities
   - [ ] Driving
   - [ ] Other ____________________________

Write your answer on #1 of a separate Sound Plan Worksheet.
Three types of sound can be used to manage tinnitus
Customized Tinnitus Management Devices
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
  - Relax
  - imagen
  - Deep breathing
  - Imagery
  - Other ________________________________

- Plan pleasant activities
  - Golf, write, walk
  - Pleasant activities
dance, paint

3. Write down the details for each skill you will use

- Activity 1 ________________________________
- Activity 2 ________________________________
- Activity 3 ________________________________

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

- Not at all
- A little
- Moderately
- Very much
- Extremely

- Activity 1 ________________________________
- Activity 2 ________________________________
- Activity 3 ________________________________

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


References and Resources (continued)


