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Three Considerations for Helping People with Tinnitus

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American Tinnitus Association

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Learning Outcomes

After this course, participants will be able to:

- Explain how to implement a patient-centered approach to initial counseling for patients presenting with a primary complaint of tinnitus, considering the principles of self-efficacy.
- Describe to patients the commonalities between and efficacy of various tinnitus management protocols.
- Discuss the role of amplification in mitigating the perception of tinnitus.

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Perspective

- Over 25 years providing patient care
- What I didn't know before 2006
- What I learned
- What I know now that I didn't know then

A few reminders about tinnitus

- Tinnitus is the perception of sound in the absence of an external sound source
 - Results from hyperactivity in the auditory cortex
- About 50 million Americans report perception of tinnitus
- We don't know exactly where it comes from, but it likely has different underlying sources
- Tinnitus is a symptom, not a disease
- Tinnitus is not considered permanent until it has been present for 6 months
- Tinnitus sometimes goes away

Perception vs. Reaction

- Over 50 million Americans perceive tinnitus
 - Ringing, buzzing, hissing
 - Constant or intermittent
 - One ear, both ears, in the head
- About 2 million Americans react to tinnitus
 - When a person reacts to tinnitus = bothersome tinnitus

Hallmarks of bothersome tinnitus

- Bothersome tinnitus affects:
 - Sleep
 - Concentration
 - Mood
 - Hearing
- Functional impact
 - Cannot fall asleep or stay asleep
 - Unable to maintain attention
 - Feelings of irritation, annoyance, anxiety, depression
 - Hearing – perception difficulty hearing because of tinnitus

What do people with tinnitus do?

- Initially, they get on the internet
 - Internet contains a lot of misinformation
 - Many ads for supplements with no scientific evidence of efficacy
- They go to their PCP
 - Most PCPs don't know much about tinnitus
 - Some prescribe anti-depressant or anti-anxiety medication
 - Some refer to ENT
- They go to ENT
 - ENTs rule out medical problems, order hearing tests
 - Some recommend lipoflavonoids
 - Very little they can or will do to address the patient's concerns

What is the worst thing patients with tinnitus hear?

- "There isn't anything you can do about it."
- "You'll have to learn to live with it."
- "There's no cure."

What can you do?

- You can be the healthcare provider who makes a difference
- Three considerations:
 1. Listen to and educate the patient
 2. Recommend hearing aids
 3. Provide resources and recommendations relevant to the individual patient's complaint
- A patient's reaction to tinnitus can be **significantly** increased or decreased depending on the interaction with the healthcare provider

Let's talk about the stress response

- It is the body's physiological response to stress
- Think about what happens to your body when you "feel stressed":
 - Your breathing rate increases
 - You may experience an increase in perspiration
 - Your heart starts beating faster
 - You might feel nauseous
 - You might feel like you have to go to the bathroom
- These changes occur because of perceived threat (whether real or not)
- Perceived threat results in release of stress hormones

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What are the functional consequences of stress?

- Difficulty with:
 - Sleep
 - Concentration
- Mood alterations

This should sound familiar . . .

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What is happening to the person reacting to tinnitus?

- The stress response is being activated chronically and inappropriately
- The person is reacting to a perceived threat
- This is a big reason why telling a patient to just ignore it doesn't work

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What critical question should you ask during case history?

- After the initial report of tinnitus, ask: *“Does tinnitus affect your sleep, concentration, mood or hearing?”*
- A patient-centered approach to tinnitus evaluation:
 - Give the patient time to tell their tinnitus story
 - Encourage the narrative – it will give you a sense of what is bothering the patient most about their tinnitus

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A Simple Tool

- Tinnitus and Hearing Survey
- Developed by Henry et al. (2015b)
- Very useful tool for differentiating the effects of hearing loss from effects of tinnitus
 - Section A: Tinnitus questions (16 points)
 - Section B: Hearing questions (16 points)
 - Section C: sound sensitivity (4 points)
- If hearing subscale score is highest, patient will likely benefit from amplification

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Tinnitus and Hearing Survey

- Response Options
 - No, not a problem (0)
 - Yes, a small problem (1)
 - Yes, a moderate problem (2)
 - Yes, a big problem (3)
 - Yes, a very big problem (4)

Tinnitus and Hearing Survey

- A. Tinnitus
1. Over the last week, tinnitus kept me from sleeping.
 2. Over the last week, tinnitus kept me from concentrating on reading.
 3. Over the last week, tinnitus kept me from relaxing.
 4. Over the last week, I couldn't get my mind off of my tinnitus.

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Tinnitus and Hearing Survey

B. Hearing

1. Over the last week, I couldn't understand what others were saying in noisy or crowded places.
2. Over the last week, I couldn't understand what people were saying on TV or in movies.
3. Over the last week, I couldn't understand people with soft voices.
4. Over the last week, I couldn't understand what was being said in group conversations.

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Tinnitus and Hearing Survey

C. Sound Tolerance

1. Over the last week, sounds were too loud or uncomfortable for me when they seemed normal to others around me.

If you responded 1, 2, 3 or 4 to the statement above, please list two examples of sounds that are too loud or uncomfortable for you, but seem normal to others:

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I don't specialize in tinnitus. How can I help?

- Specialization is not necessary to be able to help someone with tinnitus
- 3 things you can do:
 1. Educate
 2. Fit hearing aids
 3. Refer to specialists

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A useful reference

- American Academy of Otolaryngology – Head and Neck Surgery Clinical Guidelines (2014)
- Guidelines list what should and should not be done for people reporting tinnitus
- Knowing these guidelines can help you counsel the patient

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What is self-efficacy?

- The belief that you can do something
- Patients must have self-efficacy regarding a given management protocol

Tinnitus Treatment by Modality

- **Auditory – alter perception**
 - Sound therapy of some sort
 - Generally involves enhancement of external sound
 - Sometimes involves use of tinnitus-matched sound
- **Limbic – alter reaction**
 - Focus on decreasing stress response
 - Cognitive re-structuring
 - Relaxation strategies
- **Auditory + Limbic – alter perception AND reaction**
 - Combination of counseling and education + sound therapy
- **Other – alter tinnitus presence**
 - Alter tinnitus presence via external stimulation

Tinnitus Treatment by Modality (cont')

- **Auditory** – alter perception
 - Hearing aids
 - Tinnitus masking
- **Limbic** – alter reaction
 - Cognitive Behavioral Therapy
 - Cognitive restructuring and relaxation exercises
 - Mindfulness Based Stress Reduction for Tinnitus
 - Yoga and meditation
- **Auditory + Limbic** – alter perception AND reaction
 - Tinnitus Retraining Therapy
 - Tinnitus Activities Treatment
 - Progressive Tinnitus Management
 - Neuromonics
- **Other** – alter tinnitus presence
 - Currently experimental only

What do tinnitus therapy protocols have in common?

- Counseling and education
 - What tinnitus is and what it isn't
 - Auditory system and how it works (physiological component)
 - Association between hearing a sound and reacting to a sound (psychological component)
- Sound (or acoustic) therapy
 - Reduces perceptual contrast which facilitates habituation
 - May reduce neural hyperactivity

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How hearing aids help

- Alter perception by providing amplification, most often in frequency region matched to tinnitus percept
- Tinnitus audibility and awareness may be reduced by amplifying speech and background sound
- May remove hearing loss as driver of neural compensation
- Reduce stress related to straining to hear (improve ease of communication)

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EVIDENCE

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Parazzini et al. (2011)

- Purpose: to determine efficacy of TRT with open ear hearing aids relative to sound generators
- 2 groups (N = 91) with bilateral high-frequency hearing loss
 - Open ear hearing aids
 - Sound generators
- All participants received TRT counseling
- Outcome measures:
 - THI
 - Effect on life
 - Subjective tinnitus loudness
 - Annoyance
 - awareness

Parazzini et al. (2011)

- Results
 - Significant difference across time (0, 3, 6 and 12 months) for all outcome measures
 - No significant difference between instruments for all outcome measures
 - On average, about a 30-point reduction in THI score from baseline to 12 months)
- Conclusion
 - Patients undergoing TRT with high-frequency hearing loss receive hearing aid benefit comparable to sound generators

Shekhawat et al. (2013)

- Scoping review of the literature looking at the role of hearing aids in tinnitus intervention
- 29 studies
- Outcome measures
 - THI
 - THQ
 - TRQ
 - BDI

Shekhawat et al. (2013)

- Results:
 - 10 review studies concluded that hearing aids have a positive role in tinnitus intervention
 - Hearing aids facilitate attention diversion from tinnitus
- Conclusions:
 - Most of the studies characterized by small sample sizes
 - Only 1 study was a RCT
 - Outcome measures limited to subjective questionnaires and interviews (only 2 did psychoacoustic tinnitus assessments)

Bauer & Brozoski (2011)

- Compared a TRT protocol to a generic protocol over a period of 18 months
 - TRT group N = 21 (5 dropped out)
 - Control group N = 22 (6 dropped out)
- Counseling
 - Both groups received 3 1-hour directive counseling sessions over 3 months
 - Counseling consisted of PowerPoint presentations providing information about tinnitus, lifestyle factors that impact wellness and coping strategies
- Sound therapy
 - Delivered via earphones from a PDA, used daily x 18 months
 - TRT group had real sound
 - Control group had placebo sound
- Outcome measures
 - Tinnitus Handicap Inventory
 - Change in global tinnitus impact
 - Subjective tinnitus loudness rating
 - Psychophysical tinnitus loudness match

Bauer & Brozoski (2011)

- Results
 - Significant improvement in THI score for both groups from entry to the 12- and 18-month assessment points
 - Significant difference between groups at 12 and 18-month points for subjective loudness rating – TRT group rated tinnitus loudness less loud than control group
 - No change on loudness match
- Conclusions
 - TRT (directive counseling combined with low-intensity white noise) effectively decreases global severity, annoyance and distress
 - Benefit maintained at least 18 months after treatment initiated
 - Generic counseling (general information about tinnitus and instructions on health lifestyles) without sound therapy was also effective, to a lesser extent

Henry et al. (2015a)

- Purpose: To compare the use of combination devices for tinnitus management with and without the use of broadband noise in the devices
- 2 groups (N = 30)
 - Experimental group: HA + TSG
 - Control group: HA only
- Outcome measures
 - TFI
 - HHI-E

Henry et al. (2015a)

- Results
 - Device usage was about 8.8 hours/day at visit 3, and 7.0 hours/day at visit 4 – usage between groups was not significant
 - Both the control and experimental groups experienced significant improvement in the TFI when wearing hearing aids
 - Differences in the TFI between groups not statistically significant
 - No significant difference for the HHIE between control and experimental groups
- Conclusions
 - Noise shows no significant improvements in self-perceived hearing handicap or tinnitus
 - Both devices (with and without noise) provided significant benefit to the patient with hearing loss and tinnitus

Henry et al. (2016)

- Purpose:
 - To determine whether tinnitus masking (TM) and tinnitus retraining therapy (TRT) decreased tinnitus severity more than two control groups at multiple sites
 - Two control groups:
 - Attention-control group that received tinnitus counseling and hearing aids if needed (TED)
 - 6-month-wait-list control group (WLC)
 - To determine if audiologists that were mainly inexperienced with tinnitus could be trained to implement these intervention methods
- Trial conducted at 4 sites
- 4 groups (N=148)
 - TRT
 - TM (tinnitus masking)
 - TED (tinnitus educational counseling)
 - WLG (wait list group)
- Outcome measure - THI

Henry et al. (2016)

- Results
 - Significant reduction in THI at 3 months and 6 months for TRT, TM and TED compared to WLG
 - No difference between TRT, TM and TED
 - Effectiveness of treatment did not differ between sites
- Conclusions
 - TM, TRT, and TED resulted in positive outcomes when compared to the WLC group
 - Audiologists with little experience with tinnitus can be trained to effectively implement tinnitus intervention

Sherlock et al. (2019)

- Purpose:
 - To determine if a modification to PTM Level 3 Skills Education resulted in positive changes in tinnitus-related outcomes
- PTM at Walter Reed National Military Medical Center
- Retrospective study
- 2 groups (N = 49)
 - Standard PTM Level 3 Skills Education
 - Modified PTM Level 3 Skills Education

Sherlock et al. (2019)

- Results
 - No difference in outcomes between standard and modified Level 3 Skills Education
 - No difference in outcomes as a function of provider
 - Tinnitus awareness and annoyance significantly reduced
 - Baseline awareness 80% → post-PTM 50%
 - Baseline annoyance 60% → post-PTM 25%
- Conclusions:
 - PTM Level 3 Skills Education effectively reduces tinnitus awareness and annoyance even when conducted only by audiologists and only over 2 sessions

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Stay tuned . . .

- Formby et al. conducted large-scale study comparing outcomes between:
 - TRT with SGs
 - TRT with placebo SGs
 - Generic counseling and no SGs
- Study results pending

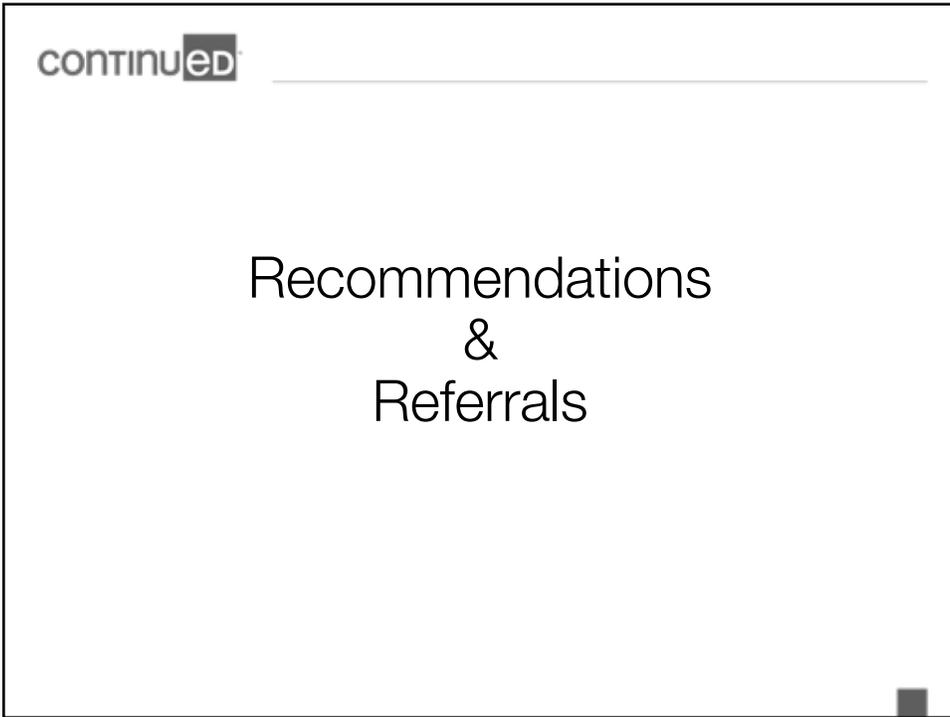
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Bottom Line

Patients benefit from sound therapy, whether hearing aids or sound generators, and general counseling.

Not every patient presenting with complaint of tinnitus needs specialized tinnitus evaluation and management.

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Patient Navigator

- Stay calm
- Visit PCP and AuD
- Do not accept “learn to live with it” diagnosis
- Know your treatment options
- Consider seeing a behavioral health therapist
- Commit to action
- Self care
- Create a support network

PATIENT RESOURCE

Navigating the healthcare system can be difficult, especially when dealing with a condition like tinnitus that lacks a definitive cause and differs between patients. The American Tinnitus Association (ATA) developed the Patient Navigator to help people find the best approach for their tinnitus. The Patient Navigator is suitable both for those with recent-onset tinnitus and those with a history of tinnitus that has become intractable or has not been addressed.

Stay calm

Tinnitus can be frightening, especially if it develops without warning or without a clear trigger. It is important to stay calm because it is a common indication of a treatable medical condition.

*For more information, see the section on treatment options.

Visit your primary care provider (PCP) and audiologist

If your tinnitus continues beyond a week, becomes bothersome, starts to interfere with your sleep and/or your concentration, or makes you depressed or anxious, seek medical attention from a licensed healthcare professional. Your PCP should be able to diagnose or rule out certain causes of tinnitus, such as ear infections or ear wax, or refer you to an otolaryngologist (ENT) and provide a referral to the appropriate specialist. If an underlying medical issue has been found, an audiologist for a hearing assessment and evaluation of tinnitus treatment options.

*You can also refer to the section on treatment options.

Know your treatment options

ATA encourages patients to utilize available research tinnitus management options and ask the questions listed below. Become a proactive participant in determining which management option best addresses your condition and needs.

- What tinnitus do they suggest? (What are the tests designed to reveal?)
- What is their diagnosis?
- Do they include a physical cause of tinnitus (TMJ, hearing loss, tumors, etc.)?
- Are they flexible with a current tinnitus management option?
- Which tinnitus management option is best for your situation? (Do they offer this approach?)
- Which tinnitus treatments do they use in their practice?
- What is their treatment plan for you? Can they provide this service or refer you to another specialist?
- How much will treatment cost? How many visits are likely needed?
- Is treatment covered by your insurance?
- Do they have any additional information for you to review?
- Is their advice based on the American Academy of Otolaryngology's Clinical Practice Guidelines for Tinnitus?

Do not accept “learn to live with it” diagnoses

Many patients are misinformed when told by healthcare providers that nothing can be done for tinnitus. While there is no cure at this time, there are evidence-based treatments that can significantly reduce the effect of tinnitus on daily activities and improve quality of life. If a medical professional says nothing can be done, get a second opinion from a hearing healthcare professional trained in tinnitus management.

Consider seeing a behavioral health therapist

Current evidence suggests that 40-70% of patients with severe tinnitus experience depression, anxiety, or some other behavioral disorder. A trained behavioral health therapist can often help mitigate the negative emotions accompanying tinnitus. There are behavioral and educational treatment programs for tinnitus management. Several psychological therapies may also be beneficial.

Commit to action

Once you and your healthcare provider identify the best management option, fully commit to completing the treatment protocol. Many of the best tinnitus management therapies, including Cognitive Behavioral Therapy (CBT) and Tinnitus Retraining Therapy (TRT), require ongoing, active patient participation, over a 6-12 month period.

Self care

Patients can improve their condition through general wellness and relaxation practices.

- **Regular Exercise:** Patients often report tinnitus improves less frequently through regular activities designed to be relaxing, like yoga, meditation, and listening to music.
- **Sleep:** Tinnitus often disrupts sleep, so create a sleep strategy. This might include sound machines, white noise, or a fan to mask the sound of tinnitus. Reduction of caffeine, alcohol, and other things that might inhibit sleep is recommended.

Create a support network

Patients who are successful in managing tinnitus often have strong support networks, which might include a spouse, family, or friends who have been educated about tinnitus. A tinnitus support group can provide a forum among compassionate people facing similar challenges. ATA can assist in locating local tinnitus support groups or connecting you with Help Network. Volunteers who are willing to share their own experiences with tinnitus also are on-call phone calls or email correspondence.

*The ATA Patient Navigator is designed to apply to the broadest array of tinnitus cases. While most patients would benefit from following the approach, the cost and/or effects of tinnitus may differ from patient to patient or vary across the spectrum of tinnitus severity.

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Sleep Hygiene

- Important to improve sleep habits – good sleep decreases stress, fatigue and irritability
- Variables that can interfere with sleep:
 - Light
 - Temperature
 - Irregular sleep schedule
 - Medications
 - Caffeine
 - Nicotine
 - Exercising right before bedtime

Sleep Hygiene

- Recommendations:
 - Go to bed / get up about same time every day, including weekends
 - Avoid daytime naps
 - Enrich the sound environment by playing soothing background sound (“soothing” is different for everyone)
 - Relax before going to bed (relaxation techniques include deep breathing, progressive muscle relaxation, guided meditation)
 - Use sleeping pills only as a last resort
(sleep hygiene tips are readily available on the internet)

Strategies to Improve Concentration

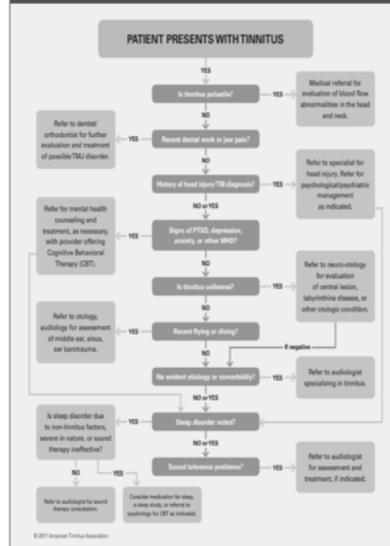
- Work for shorter time spans and/or take more breaks more frequently
- Control or optimize environment (e.g., adjust temperature, decrease distracting noise)
- Play low-level neutral sound
- Get up and walk for a few minutes when having trouble concentrating
- Use a “stop” command to minimize distracting thoughts and refocus attention
- Practice attention shifting

Referral Tool

- Pulsatile?
- Dental work or jaw pain?
- Head Injury TBI?
- PTSD, depression, anxiety or other MHD?
- Unilateral?
- Recent flying or diving?
- No evident etiology or comorbidity?
- Sleep disorder?
- Sound tolerance?

INTAKE PROCESS FOR TINNITUS

Tinnitus may be associated with one or more of the following conditions. It is recommended that all providers check all conditions in this chart, even if a positive answer leads to a specific referral. Referrals to subsequent decisions is provided for those conditions that have common comorbidities. This process chart may require updates as new information becomes available.



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