

2021

# AUDACITY

AUDIOLOGY UNLEASHED

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# What Do I Do With My Tinnitus Patient?

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# TINNITUS STARTER PACK



"Oh you mean that ringing sound?  
Doesn't bother me."



"have you tried the finger tapping trick?"  
"have you tried CBD?"  
"have you tried yoga?"



\*tons of supplements\*



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# Defining Tinnitus

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What the heck IS tinnitus?

# Incidence & Prevalence

45 million Americans

67% chronic tinnitus

20 million w/ bothersome tinnitus

2 million w/ debilitating tinnitus



# Why are we here?

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What is the professional responsibility  
of a general practitioner / generalist?



# Tinnitus Terms

## Out of favor

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- Primary vs. Secondary vs. Tertiary
- Subjective vs. Objective
- AAO-HNS: Primary vs. Secondary
- Idiopathic





# Tinnitus Terms Current

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- Acute vs. Chronic
- Unilateral / bilateral
- Tinnitus vs. Somatosounds



# How to Describe Tinnitus

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- Acute / Chronic
- Location in space
- Bilateral / Unilateral
- Constant / Intermittent / Fluctuating
- Frequency/duration of occurrence
- Sound / type (what it sounds like)
- Bothersome / Non-bothersome





# Case Study #1

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- 62 year old male
- Machinist for 30 years
- Difficulty understanding people past 5-10 years
- Tinnitus onset 9-10 years ago, not sure
- Both ears/central
- Ringing/buzzing similar to cicadas



# Case Study #1

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- Tinnitus onset gradually, intermittent - has become constant
- Hears throughout day / loud @ night
- Disrupts sleep / can't go back to sleep
- PROVOCATIVE: Full day @ work, crowds or social settings
- PALLATIVE: TV/radio, has used fan, but wife can't stand it



# Case Study #2

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- 54 year old female
- Training specialist for the state
- Referred by her chiropractor
- Tinnitus onset 5-6 years ago
- Became disturbing 2-3 years later
- Constant, bilateral ringing, with sound like “speaker feedback”
- Fluctuates in intensity





# Case Study #2

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- Has tried:
  - Sound therapy apps
  - OTC supplements (ginko, vit B, lipoflavonoids)
  - Yoga
  - Hold/cold compresses
  - Accupuncture
  - TMJ mouthguard
  - Craniosacral therapy
  - Chiropractic care





# Case Study #2

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- Difficulty sleeping
- Irritable all the time
- Contemplating leave of absence
  
- PROVOCATIVE: nothing
- PALLATIVE: Cranio-sacral therapy helps during session, but tinnitus returns immediately after





# Case Study #3

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- 35 year old Asian male
- Engineer by occupation
- Normal hearing (verified by exam)
- Sudden, spontaneous onset of ringing ~ 3 wks prior
- Occurs in both ears
- Extremely bothersome
- Has not sought help elsewhere



## Case Study #3

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- Difficulty sleeping
- Doesn't want to get out of bed, considering leaving job
- Has not told boss or co-workers – afraid they will think he is crazy
- Mentioned once to wife, but not since because she didn't understand
- PROVOCATIVE: nothing
- PALLATIVE: nothing



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# Tinnitus Triage

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when you hear a high pitched  
ringing and haven't learned  
about Tinnitus yet



what's wrong with me?



# Tinnitus Triage in 3 Steps

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Step 1: Rule out  
medical concerns



Step 2: Assess  
psychological concerns



Step 3: Determine  
audiology needs

# Step 1: Rule Out Medical Concerns

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# Pulsatile Tinnitus

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- Concerns for vascular restriction
- Synchronized to heartbeat
- Fluctuates w/ physical activity
- Intake Questions:
  - Hx high blood pressure / medication
  - Duration of symptom
  - Is it actively medically managed?

\*PCP Referral\*





# Head Injury/TBI

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- Recent or previous unmanaged injury
  - MVA
  - Concussion
  - Blast injury
  - Other head trauma
- CVA / TIA

\*Immediate referral to physician unless previously managed

# ENT Concerns

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- Unilateral tinnitus
- Barotrauma
- Recent flying
- Recent diving
- Infection
- Vestibular symptoms

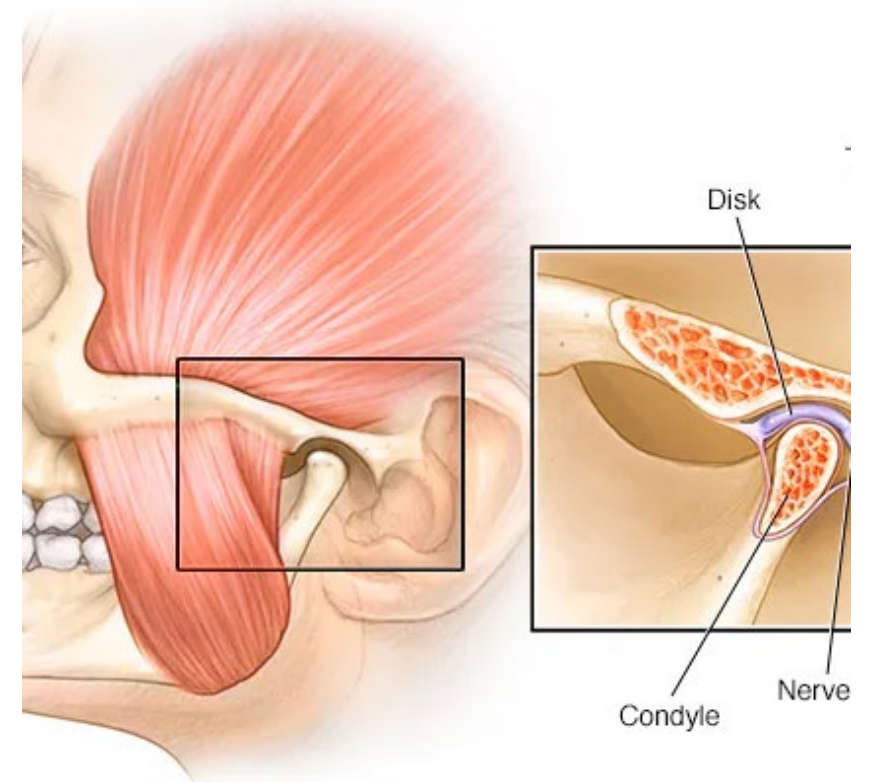


# TMJ Disorders

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- Most often clicking/popping tinnitus
- Usually with jaw movement
- Intake:
  - Grinding/clenching
  - Sore jaw in morning
  - Recent dental work

\*Referral to orthodontist/dentist\*



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# Medications

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- Medication review for ototoxicity
  - Aspirin / NSAIDs
  - Quinine (incl. synthetic)
  - Aminoglycosides
  - Antineoplastic agents
  - Loop diuretics
  - Anesthetics
- Also pay attention to antidepressants, anxiety meds, etc.
- Timing of tinnitus (or exacerbation) & medication changes



# Other Concerns

Pregnancy

Autoimmune disorders

Cervical problems

# Tinnitus

## Description

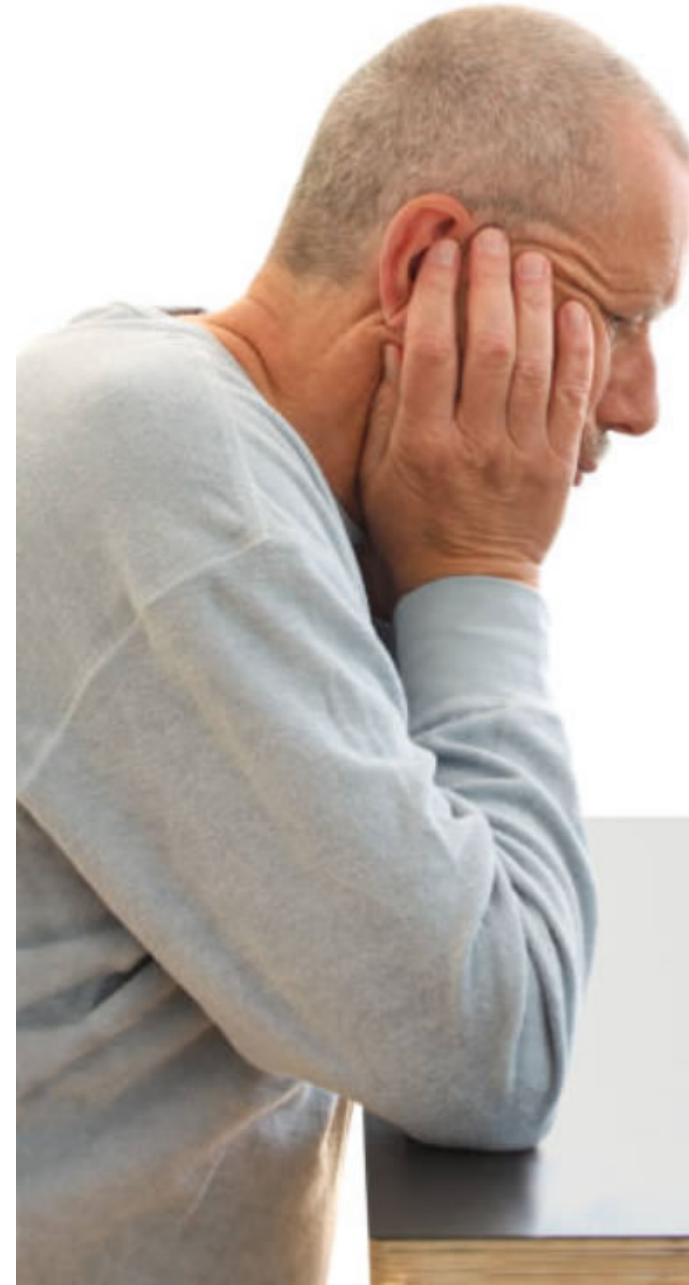
### Case study #1

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**How would you describe this patient's tinnitus?**

(ringing/buzzing noise, onset 9-10 yrs prior, progressed to constant, both ears, prevents sleeping)

**Chronic, bilateral, bothersome, ringing/buzzing tinnitus**





# Tinnitus Description

## Case study #2

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**How would you describe this patient's tinnitus?**

(ringing noise w/ distortion, onset 5-6 yrs prior, progressed 2-3 yrs ago, both ears, intensity fluctuations, difficulty sleeping, irritable, thinking of leaving work)

**Chronic, fluctuating, bilateral, bothersome, ringing tinnitus with auditory distortion**

# Tinnitus

## Description

### Case study #3

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**How would you describe this patient's tinnitus?**

(ringing noise, onset 3 wks prior, both ears, interferes with sleep, work, social)

**Acute, bilateral, severely bothersome, ringing tinnitus**





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# Step 2: Assess Psychological Concerns

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# Current Treatment

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Patient seeing psychologist / psychiatrist

Medications for mental health conditions

Spoken to mental health provider about tinnitus?

# Signs of Mental Health Conditions

- History of PTSD
- Depression
- Anxiety
  - Fidgeting
  - Reduced eye contact
- Consider screenings
  - PHQ-9 (Public Health Questionnaire v.9)
  - <https://screening.mhanational.org/screening-tools/>
  - <https://www.psych.com/depression-test/>

ID #: \_\_\_\_\_ DATE: \_\_\_\_\_

Over the last 2 weeks, how often have you been bothered by any of the following problems?  
(use "✓" to indicate your answer)

	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself...or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself	0	1	2	3

add columns  +  +

(Healthcare professional: For interpretation of TOTAL, please refer to accompanying scoring card). TOTAL:

10. If you checked off any problems, how difficult have these problems made it for you to do \_\_\_\_\_

Not difficult at all \_\_\_\_\_  
Somewhat difficult \_\_\_\_\_

PHQ-9

## Risk of Self-Harm

Ideation of suicide

Do they have a plan?

Do YOU have a plan?

# Sleep

Super important to dealing with  
[anything]

Difficulty falling asleep / regaining  
sleep

Lack of sleep affecting tinnitus

See PCP if necessary

# Case Study #4

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- 44 year old Male
- Visited after 72 hour hold @ hospital
- Occupation: Fire marshall
- Concussion 1 month prior, when tinnitus began





# Case Study #4

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- Anxiety & depression onset concurrent w/ tinnitus
- Perfect 100 score on THI (maximum handicap)
- Wife & father are temporary guardians
- Actively interested in ending life



# Case Study #4

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STEP 1: Spoke with referring ENT

STEP 2: Called psychiatrist

STEP 3: Discussed safety plan  
w/ guardians

STEP 4: Fit on-ear devices  
(same-day)

STEP 5: Provided ample counseling





# Case Study #4

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10:00am appt. – stayed in office  
until 5:00

Waited 2 hours in psych office for  
that appt.

Psych called 10:00pm for follow-up  
consultation



# Case Study #4

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- Monthly appointments for 8 mos, bi-monthly after
- Monthly call w/ psych
- Most recent THI score: 34 (mild handicap)
- 100% back to work
- Regain guardianship





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## Step 3: Determine Audiology Needs

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**WHAT IF PEOPLE  
SUFFERING TINNITUS**

**JUST HEAR A REAL  
EXISTING SOUND?**



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# Tinnitus Codes

- **92625 – Tinnitus Assessment**  
(incl. pitch & loudness matching, masking)
- **H93.11 – Tinnitus, right ear**  
(x.12 – left, x.13 – bilateral, x.19 – unspecified)
- **H93.A1 – Pulsatile tinnitus, right ear**  
(x.A2 – left, x.A3 – bilateral, x.A9 – unspecified)
- **H93.231 – Hyperacusis, right ear**  
(x.232 – left; x.233 – bilateral, x.239 – unspec.)
- **H93.29 – Other abnormal auditory perceptions, right ear**  
(x.292, x.293, x.299)

# Audiology Exam

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- Modifications may be necessary
  - Acoustic reflex testing
  - UCLs
  - Rate & stim type
  - Provide breaks as necessary



# Overview of a Tinnitus Exam

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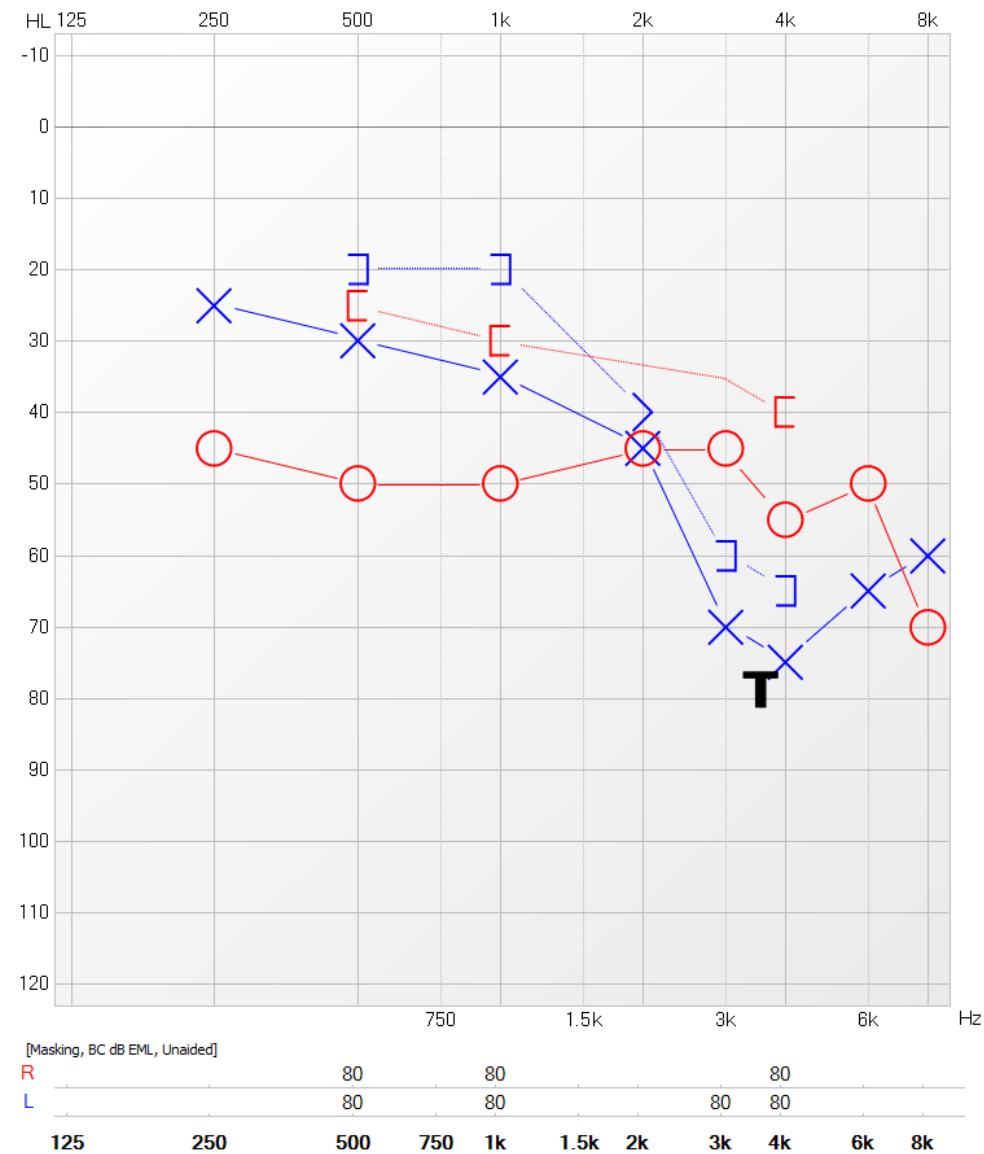
- Pitch / loudness matching
- Tinnitus suppression
- Residual inhibition
- Tinnitus questionnaires





# Tinnitus on the audiogram

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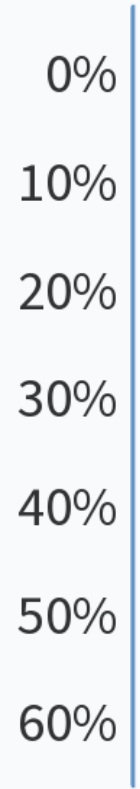


# Tinnitus in the Pediatric Population

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# What is the prevalence of tinnitus in children?



# What is the prevalence of BOTHERSOME tinnitus in children?

1 in 5  
1 in 10  
1 in 20  
1 in 30  
1 in 50  
1 in 100

# Prevalence of Pediatric Tinnitus

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**Rosing et al (2016) reviewed 25 articles:**

- Prevalence ranged from 4.6% - 47% overall
- With SNHL: 23.5% - 62.2%
- Prevalence of hyperacusis varied from 3.2% to 17.1%



# Prevalence of Pediatric Tinnitus

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**Humphriss et al (2016) studied questionnaires from 7092 children aged 11 years**

- Prevalence of tinnitus was 28.1%
- “Clinically significant” tinnitus in 3.1% of children
  - More likely if tinnitus was loud
  - More likely if tinnitus was intermittent (> 1x/wk)

# Prevalence of Pediatric Tinnitus

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Raj-Koziak et al (2021) studied parent & child questionnaires from 43,064 hearing screenings in Poland

- Parent questionnaire:
  - 1.4% of children told them of tinnitus occurring very/often
  - 12.4% of children told them of tinnitus occurring occasionally/rarely
- Child questionnaire:
  - 0.7% indicated constant tinnitus
  - 2.4% indicated periodic tinnitus
  - 28% indicated occasionally tinnitus (rarely)

# Presentation of Tinnitus in Children



May not realize it is unusual

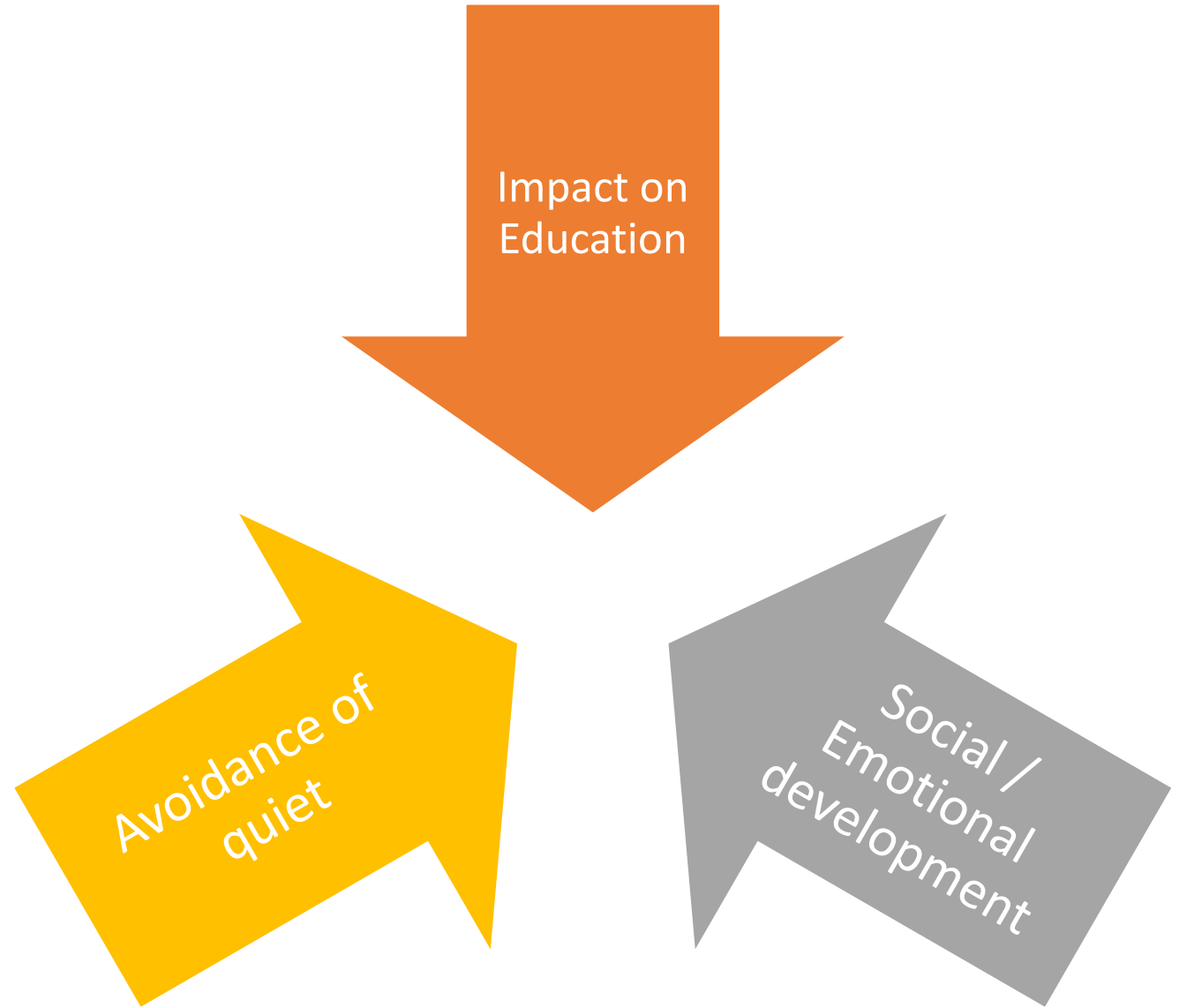


Often ringing or humming that  
is present in quiet



Children may communicate it  
better through drawing/coloring

# How Tinnitus Affects Children



# Talking to Children About Tinnitus

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Positive language

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Validation is important

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Use drawings to illustrate how they feel / how it affects them

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You are counseling the parents also!

# Referring for Tinnitus

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## Referral Considerations

- **Who referred the patient to us?**
- **Who have they recently seen?**
- **What unmet needs have you identified?**

# Have a Network!

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- Don't wait until you need them
- Make a personal connection
- Ask for referrals TO YOU!

# Who Should Be in Your Network?

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- Audiologist specializing in tinnitus
- ENT
- Neurologist
- Psychologist / Psychiatrist
- Orthodontist / Dentist

# Who Should Be in Your Network?

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- Other destinations for management
  - Yoga instructor
  - Tai Chi instructor
  - Nutritionist
  - Massage Therapist
  - Accupunturist
  - Craniofacial Therapist
  - Chiropractor/Chiropractic Neurologist

# Final Thoughts

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# Tinnitus Care Can Be Complex!



Be ready to triage



Have your referral network in place



Audiology is the medical home for  
auditory conditions!

**EMBRACE IT!**



# Never Dismiss Patients' Concerns

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- Tinnitus can be a serious problem
- Listen to patient concerns
- Validate their thoughts, feelings
- Offer hope



# Develop Trusted Relationships

- Connect with audiologists in your area specializing in tinnitus
- If there are none – it's an opportunity!!!
- Don't underestimate the importance of psychology

# Thank you!

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