Tinnitus Activities Treatment

Thoughts and Emotions Session
Overall Plan

1. Hearing and hearing loss
2. Tinnitus
3. Attention, behavior, and emotions
4. Changing your reactions
5. Activities for home
PART 1: HEARING & HEARING LOSS

1. How we hear, and what is hearing loss
2. Causes of hearing loss
Cochlea like piano

Low Pitches

High Pitches
Hair Cells in Cochlea
Nerve Activity Carries Information to the Brain
Spontaneous Activity on Hearing Nerves

No Sound (Quiet)

Hear Silence
Different Nerve Responses Result in the Perception of Different Sounds

<table>
<thead>
<tr>
<th>No Sound (Quiet)</th>
<th>Hear Silence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word “Table”</td>
<td>Hear “Table”</td>
</tr>
<tr>
<td>Sound of a Cricket</td>
<td>Hear a Cricket</td>
</tr>
</tbody>
</table>
Causes of hearing loss

- Head Injury
- Medications
- Age
- Disease
- Noise
- Unknown
Hearing Loss Similar to Missing Piano Keys

Normal Cochlea

Cochlea with hearing loss and missing hair cells
Hearing Loss and Missing Hair Cells

Normal Hair cells

Abnormal Hair cells, Hearing Loss
Nerve Activity

Normal Hearing

Lots of information sent to the brain

Hearing Loss

Limited information sent to the brain
Solutions for Hearing Loss

Cannot Replace Hair Cells

Hearing aids can help make sounds:

- Louder
- Easier to understand
- Do not restore normal hearing
Protecting Your Hearing

• Avoid exposure to loud sounds whenever possible

• If noise is unavoidable, wear ear protection to prevent damage to your ears
Your Hearing?

• Do you have a significant hearing loss?
• What difficulties does your hearing loss create?
• What steps have you taken to improve your hearing?
Pitch and Loudness

Pitch (frequency)
- High pitch vs. low pitch

Loudness (intensity)
- Soft vs. loud
PART 2: TINNITUS

• A sound in ear(s) or head

• Heard differently by different people
  (e.g. ringing, buzzing, hissing, etc.)
Tinnitus and Hearing

• Tinnitus results from damage to the hearing system
  – May be associated with hearing loss

• Tinnitus will not damage your hearing

• Hearing may continue to decrease, but not because of tinnitus
There Are Many Different Causes of Tinnitus

Causes:
- Head Injury
- Medications
- Age
- Disease
- Noise
- Unknown

Your Cause?
Tinnitus is Common

- 15 in 100 (15%) people have tinnitus
- 1 in 100 (1%) people have troublesome tinnitus
- 30 in 100 (30%) people over 60 years old have tinnitus
Expectations for Relief

- Currently no drug or surgery can reliably eliminate the source of tinnitus

- However, **YOU** can change your reaction to tinnitus and how it affects you
Auditory System

- Tinnitus, whatever the cause, must be represented in the brain in the auditory area. It is represented there like any other sound. It can be measured.
Tinnitus is an Increase in Spontaneous Nerve Activity

Normal Hearing

Hearing Loss (No Tinnitus)

Tinnitus

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What does your tinnitus sound like?

- Whistle
- Cricket
- Another sound?
PART 3: ATTENTION

1. Types of attention
2. How things capture our attention
3. Emotional state has an effect on attention
Two Types of Attention

• Conscious—Selectively attend to and think about information

• Subconscious—Monitor background information. Stimuli that are monitored may grab attention and move to conscious attention
Many Stimuli Compete for Our Attention

- Touch
- Smell
- Vision
- Sound
- Taste

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We can only consciously attend to one thing.
We can typically direct our conscious attention to another stimulus.
We can direct our conscious attention to different smells, sounds, or things we feel.
We are not even aware that our subconscious monitoring goes on all the time.

Blah, blah, blah, Fred, blah...

Did I hear my name?
Several things can influence our attention

- Emotional state
- Important Event
- Unknown?
- Novelty
How do we respond to important stimuli?

Conscious

Subconscious
An important sound can *grab* our attention.
Things That Capture Our Conscious Attention

- Unusual
- Important
- Scary
- Unexpected
Deciding to Pay Attention

Everything is OK
(no longer attend)

Do something,
then will be OK
(and will no longer attend)

Uncertain, may be important?
(continue to attend)
Some Stimuli Cannot Be Ignored
Background Sounds Monitored

New Refrigerator is loud at first

Soft

Not even aware it is present
We Notice Important Things And Ignore Unimportant Stimuli

Refrigerator: Ignore

Lion: Cannot ignore

Crowd: Monitor information automatically
Tinnitus and Attention

If brain determines **tinnitus is not important**, the tinnitus can be ignored

If brain determines **tinnitus is important**, we will pay attention to it
How WeAttend

Brain
Conscious
“Hears”
“Interprets”
Attention

Memory

Emotions

Brainstem
Subconscious
Monitoring

Cochlea

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Tinnitus does not...

- Make you deaf
- Lead to senility
- Imply a sign of mental illness

- When you worry about such things, you can become preoccupied with tinnitus
If the brain decides tinnitus is not important

• Not attend to it
• Becomes less noticeable/bothersome
• Can take some time (several months)
• For some people it may occur quickly
• For other people it will take longer
Activities

• Describe an image you like (e.g. a new car) and one you don’t like (e.g. a snake)
• Describe a sound you like (e.g. music) and one you don’t like (e.g. a siren)
• Describe your tinnitus
PART 4: CHANGE THE EMOTIONAL REACTION TO TINNITUS
Understand the Connection Between our Thoughts and Emotions

1. Neutral
2. Negative
3. Positive
Our Thoughts and Emotions

Doorbell ➔ Neutral
  ➔ Fire ➔ Anxiety
  ➔ Injury ➔ Angry neighbor
      ➔ Flowers ➔ Happiness
      ➔ Friend
      ➔ Delivery
Identify Unhealthy (negative) Thoughts
Change Negative Thoughts

• What kind of thoughts have you had about your tinnitus?
  – Situations where tinnitus is bothersome
  – Thoughts and beliefs about tinnitus
  – Feelings about tinnitus
Restructure Unhealthy (negative) Thoughts
Change Negative Thoughts

I hate this noise!
I can’t live the rest of my life with this noise in my head!
I can’t concentrate with this sound in my head!

This noise isn’t pleasant, but I can learn to ignore it.
It’s OK if this noise doesn’t go away because I can teach my brain to ignore it.

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How to Change Our Reaction to Tinnitus

1. Change Interpretation of Importance

2. Change Emotional Reaction

3. Refocus on Other Activities

4. Reduce Contrast Between Background Sound and Tinnitus
1. Change Interpretation of Importance

- Tinnitus is likely the result of increased spontaneous nerve activity
- Many people have tinnitus – you are not alone
- Tinnitus is not threatening your health or hearing
- Tinnitus and YOUR REACTION to tinnitus are two different things
Decreasing attention to tinnitus

• Our goal is to help you move from the group of people who are bothered by their tinnitus to the group of people who are not bothered by it.
Decreasing Attention

• Consider subconscious and conscious attention
• Brain monitors background sounds all the time
• We pay attention to important, strange, fearful sounds
• If tinnitus is not important, it is less likely you will pay attention to it
2. You Can Unlearn/Change Your Emotional Reactions

- Tinnitus → Negative Reaction → Negative thoughts
- Tinnitus → Anxiety, Irritation → Negative thoughts
- Tinnitus → Less Irritation → Constructive thoughts
- Tinnitus → No Reaction → Tinnitus not as prominent
3. Refocus on Other Activities

• What hobbies do you have?

• What activities help you ignore your tinnitus?

• What new activities could you become involved in?
Activities in Your Life

• Involving yourself in activities that you enjoy—that bring intrinsic value—will also be helpful to focus away from tinnitus
4. Reduce the Contrast Between Tinnitus and Background Sounds
Low level noise makes tinnitus more difficult to detect

Tinnitus

Low Level Noise

Tinnitus in Low Level Noise
Decrease Prominence of Tinnitus
Background sound masks unwanted sounds
Ways to Add Low Level Background Sound

• Use sound in the environment
Ways to Add Low Level Background Sound

• Listen to recorded material:
  – Relaxation CDs
  – Smartphone apps
  – Nature sounds
  – Music
Ways to Add Low Level Background Sound

- Use a sound playing device
Do Any Sounds Make Your Tinnitus Less Noticeable?

- Rain
- Music
- Waterfall
- Static
PART 5: ACTION PLAN
Activities

1. Practice focusing your attention on your tinnitus, and then on something else
2. Identify alternative activities you enjoy
3. Try different low-level background sounds
Task: Complete a Tinnitus Diary

• Neutralize negative thoughts about tinnitus
• Modify your lifestyle to engage in enjoyable activities
• Use low-level background sound to make tinnitus less prominent
Example Tinnitus Diary

1. Write down your thoughts and worries about tinnitus
   - My tinnitus will get worse over time.

2. Check to see if these thoughts match what actually happens
   - Though some days can be worse, my tinnitus is about the same.

3. List the alternative ways of thinking about tinnitus that you find helpful
   - I have tinnitus, but it is really a small part of my life.

4. We will discuss your thoughts at your next visit.
Tinnitus Diary, cont’d

1. List the things that reduce your tinnitus
2. List the things that worsen your tinnitus
3. List activities you enjoy
4. List sounds you enjoy
5. List alternative activities to engage in when you find tinnitus bothersome
6. List any low level sounds you used, and their effect on your tinnitus
Tinnitus Diary, cont’d

• For two weeks, keep a list of new activities you engage in each day, and the effect your activities have on your tinnitus.
Example Tinnitus Diary – Week 1

- Make changes in your daily life so you are doing more activities where your tinnitus is better and fewer activities where your tinnitus is worse. List the new activities and how your tinnitus was affected.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Effect on Tinnitus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1: Walking</td>
<td>Day 1: <em>Heard birds chirping, did not notice tinnitus</em></td>
</tr>
<tr>
<td>Day 2:</td>
<td>Day 2:</td>
</tr>
<tr>
<td>Day 3:</td>
<td>Day 3:</td>
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<td>Day 4:</td>
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<td>Day 5:</td>
<td>Day 5:</td>
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<td>Day 6:</td>
<td>Day 6:</td>
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<tr>
<td>Day 7:</td>
<td>Day 7:</td>
</tr>
</tbody>
</table>
Example Tinnitus Diary – Week 2

<table>
<thead>
<tr>
<th>Activity</th>
<th>Effect on Tinnitus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1: Gardening</td>
<td>• Day 1: <em>Focused on yard work, tinnitus less noticeable</em></td>
</tr>
<tr>
<td>Day 2:</td>
<td>• Day 2:</td>
</tr>
<tr>
<td>Day 3:</td>
<td>• Day 3:</td>
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<td>Day 4:</td>
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<td>• Day 6:</td>
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<tr>
<td>Day 7:</td>
<td>• Day 7:</td>
</tr>
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</table>

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Tinnitus Diary Review

• After two weeks, you may stop journaling
• The intent is NOT to think of your tinnitus, but to find other activities you can engage in that take your mind off tinnitus.
• **YOU** can then make changes in your daily life so you are doing more activities where tinnitus is better and fewer activities where tinnitus is worse.