CBT and Neurotherapy to Relieve Tinnitus Distress

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Goals

- Important Points about Tinnitus
- What happens in Cognitive Behavioral Therapy (CBT) and Neurotherapy
- How these complimentary approaches can relieve tinnitus distress
Important Points About Tinnitus

- It is a symptom, not a disease.
- It is a perception sensitivity to internal sounds.
- It is similar to chronic pain syndrome, in which pain continues even after wound has healed.
Best Results Take An Individualized Multidisciplinary Approach

- Tinnitus Patient
- ENT
- Psychological Services
  - CBT
  - NF
- Audiology Services
- Support of Family and Friends
- Other Medical Professionals

Support of Family and Friends

Other Medical Professionals

Audiology Services

Psychological Services
  - CBT
  - NF

Best Results Take An Individualized Multidisciplinary Approach
Why Cognitive Behavioral Therapy?

Research supports it works. For example:

- Random comparison study* found those receiving audiological interventions and CBT had significantly less tinnitus distress and better health related quality of life.

- Meta-analysis** of tinnitus outcome studies concluded that best treatment strategies were CBT-based and multidisciplinary.

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**Cima et al., J Am Acad Audiol. 2014 Jan;25(1):29-61. doi: 10.3766/jaaa.25.1.4
Meaning

Emotions

Awareness of body states, embodied emotions, pain

ANS reactions

Neurosci Biobehav Rev. 2014 Sep; 45(100): 119–133.
doi: 10.1016/j.neubiorev.2014.05.013
How Chronic Tinnitus Develops

Random electrical activity in ear or auditory nerve

Filter fails to block electrical activity

Awareness of tinnitus dislike, discomfort

Concern

Increased autonomic activity "fight and flight"

Random electrical activity in ear or auditory nerve

Filter fails to block electrical activity

Awareness of persistent tinnitus

Anxiety, fear, dismay

Increased autonomic activity "fight and flight", hearing sensitized
Tinnitus Symptom Pyramid

- Non-bothersome tinnitus: 1 in 10
- Progressively more severe problems: 17% of adults
- Debilitating problems: 1 in 100
One in ten people have persistent tinnitus. So why aren’t they bothered by it?
Habituation

- Natural unconscious learning process for decreasing response to stimulus after repeated exposure to it.
- Ignore a stimulus we’ve been exposed to many times.

Habituation is how you can learn to silence tinnitus!
Tinnitus Habituation

Hallam et al. (1984) *Habituation Model*
It’s Difficult To Habituate When...

- The stimulus is intense, adverse, unpredictable, and changing.
- We experience high levels of stress and arousal when exposed to the stimulus.
- We attach importance and meaning to the stimulus.
- We avoid the stimulus.
- We focus on the stimulus too much.
- Life happens.
Five Steps to Enhance Habituation

1. Reduce stress arousal (ANS): Relaxation skills and anxiety management
2. Reconsider meaning and importance of tinnitus: Cognitive appraisal approach
3. Reduce avoidance behaviors: Exposure and behavioral experiments
4. Reduce focus on tinnitus: Masking, distraction, mindfulness
5. Reduce life stress: Problem-solving, social support
Filter fails. Persistent awareness of tinnitus

**Thoughts** ("This is too much", How will I work", “I’ll have a breakdown”.
“can’t ______”)

**Emotional** (arousal, anxiety, sadness...)

**Behavioral** (staying home, avoiding noise, avoiding quiet)

**Physiological** (Increased autonomic activity “fight and flight”, poor sleep, pain, sensitized hearing)
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**Reduce arousal**
- Relaxation training
- Progressive relaxation
- Abdominal breathing
- Biofeedback training
Filter fails. Persistent awareness of tinnitus

**Thoughts** ("This is too much", How will I work", "I’ll have a breakdown". "I can’t ______")

**Change the meaning**
- Education
- Questioning beliefs
- Balanced thinking
- Positive psychology
- Problem-solving

**Emotional** (arousal, anxiety, sadness...)

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There is something wrong with my hearing.

Fearful, worried,

I had my hearing checked. I’m okay.

Anxious, annoyed

This is just one of many random noises.

Less anxious, bugged

Like all sensations, it comes and goes.

Curious, neutral

My brain can learn to filter it out.

Neutral
How CBT Enhances Habituation

Filter fails. Persistent awareness of tinnitus

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Change the meaning
• Education
• Questioning beliefs
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• Positive psychology
• Problem-solving

Emotional (arousal, anxiety, sadness...)

Behavioral (staying home, avoiding noise, avoiding quiet)

Change your approach
• Test negative predictions
• Exposure
• Balance attention
• Increase positive activities

Physiological (Increased autonomic activity “fight and flight”, poor sleep, pain, sensitized hearing)

Reduce arousal
• Relaxation training
• Progressive relaxation
• Abdominal breathing
• Biofeedback training
Plan pleasant activities
- Helps you have more positive feelings
- Distracts you from tinnitus
- Helps you feel better overall

Homework: Plan at least one pleasant activity a day for the next week. Ask yourself...
- Did I schedule a pleasant activity each day?
- What prevented me from doing my activity?
- Might more activities help me?
How CBT Enhances Habituation

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Mindfulness/Acceptance
- Relax control, tolerate discomfort, compassion, non-judgment, present focus, openness

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Biofeedback

- Sensors pick up your physiological signals – EEG, EMG, HRV, GSR, HEG.
- These signals are fed to a computer which displays information about heart rate variability, muscle tension, or brainwave activity.
- The computer feeds back results of physiological changes.
- You use the feedback to learn control of physiological processes.
Neurotherapy Uses EEG Brainwaves

**EEG Brain Frequency Chart**

**Beta Waves**
- Frequency: 12 to 30 Hz
- Conscious Mind
  - Normal waking state of consciousness. Alertness, concentration, focus, cognition and the five physical senses.

**Alpha Waves**
- Frequency: 7.5 to 12 Hz
- Gateway to the Subconscious Mind
  - Deep relaxation and light meditation usually with eyes closed. Relaxation, visualization, creativity and super learning.

**Theta Waves**
- Frequency: 4 to 7.5 Hz
- Subconscious Mind
  - Usually light sleep, including REM dream state. Deep meditation, intuition, memory and vivid visual imagery.

**Theta Waves**
- Frequency: up to 4 Hz
- Unconscious or Supra-Conscious Mind

*Image source of graphs: wikipedia*
How Neurotherapy Helps You Habituate

- Better physiological control of autonomic nervous system
- Better able to sleep
- Better ability to re-focus attention
- Reduces stress
- Deal more constructively with a variety of emotions
- Learn skills faster
- No medications – no chemicals in the body
Summary

- Education so you understand what goes on in the brain to cause tinnitus.
- Learn to change the way you think about and react to your tinnitus.
- Find strategies to do on your own to make the noise less noticeable, to help you relax during the day, or to fall asleep at night.
- Help you decide what works best for you.
Resources

- American Tinnitus Association
- National Center for Rehabilitative Auditory Research