

Tinnitus: The Ignored COVID-19 Symptom and Loud Killer: How Ringing in the Ears Causes Emotional Distress, Suicidal Ideation, and What Can be Done about It.

Kevin T. Blake, Ph.D., P.L.C., CCSP-ADHD, ASDCS
Tucson, Arizona

Announcements, Disclosures and Paperwork



Disclaimer

“Materials that are included in this course may include interventions and modalities that are beyond the authorized practice of mental health professionals. As a licensed professional, you are responsible for reviewing the scope of practice, including activities that are defined in law as beyond the boundaries of practice in accordance with and in compliance with your profession’s standards.”

Disclaimer

- **None of the techniques described in this seminar will work for all adult with tinnitus. Every adult with tinnitus is different.**
- **There are no absolutes.**
- **All treatments have negative side effects. Some more than others. The presenter will do his best to cover the most common ones.**
- **The theories described in this seminar do not have the same amount of empirical evidence supporting each one of them. The presenter will do his best to describe the pros and cons of each.**
- **If you are concerned about a treatment technique described in this seminar ask the presenter about it.**

Disclaimer

- **Speaker Disclosure:**
- **Financial:** Kevin Blake maintains a private practice. He is a stockholder in Johnson & Johnson, Inc. and Amgen, Inc. Dr. Blake receives a speaking honorarium from TPN.Health and royalties from PESI, Inc.
- **Non-financial:** Kevin Blake is a member of the Children and Adults with Attention Deficit Disorders (CHADD), International Dyslexia Association (Orton Oak), Learning Disabilities Association of America, and American Psychological Association.

Disclaimer

“DSM[®], DSM-IV-TR[®], DSM-5[®] and DSM-5 TR[®] are registered trademarks of the American Psychiatric Association. The American Psychiatric Association is not affiliated with nor endorses this seminar.”

Founder of Texas Roadhouse Commits Suicide Due to Post COVID Tinnitus

Kent Taylor, founder and CEO of Texas Roadhouse restaurant chain committed suicide on March 18, 2021 due to unbearable symptoms of tinnitus caused by Post-COVID Syndrome.

Treisman, R. (March 22, 2021). Coronavirus Updates: Texas Roadhouse Founder Kent Taylor Dies After Struggle With 'Post-COVID' Symptoms. National Public Radio. From website: <https://www.npr.org/sections/coronavirus-live-updates/2021/03/22/979929592/texas-roadhouse-founder-kent-taylor-dies-after-struggle-with-post-covid-19-sympt>.

What is Tinnitus?

According to the American Tinnitus Association (ATA) tinnitus is: “...is the perception of sound when no actual external noise is present. While it is commonly referred to as “ringing in the ears,” tinnitus can manifest many different perceptions of sound, including buzzing, hissing, whistling, swooshing, and clicking. In some rare cases, tinnitus patients report hearing music. Tinnitus can be both an acute (temporary) condition or a chronic (ongoing) health malady.”

Author (2021). Understanding the Facts. American Tinnitus Association. From website: <https://www.ata.org/understanding-facts>.

What is Tinnitus?

The American Speech-Language Hearing Association (ASHA) says, “Tinnitus is the ringing you hear in your ears. It can sound like hissing, roaring, pulsing, whooshing, chirping, whistling, or clicking. Tinnitus can be in one or both ears.”

Author (No Date). Tinnitus. American Speech-Language Hearing Association. From website: <https://www.asha.org/public/hearing/tinnitus/>.

The Two General Types of Tinnitus

➤ Subjective:

- Patient only hears the tinnitus. Can usually be traced to hearing loss/damage.
- This accounts for 99% of the cases of tinnitus.

➤ Objective:

- Others can hear the tinnitus.
- The sound can be the noise of blood flow through the head, or musculo-skeletal movement.
- This type accounts for 1% of the cases.

Author (2021). Understanding the Facts. American Tinnitus Association. From website:
<https://www.ata.org/understanding-facts>.

More Subtypes of Tinnitus

- **Primary Tinnitus:** Appears to be related to hearing loss
- **Pulsatile Tinnitus:** Appears to pulse like a heartbeat
- **Secondary Tinnitus:** Appears to be related to another “primary disorder”
- **Somatic Tinnitus:** Effected by bodily sensory input, like a muscle spasm.

Coelho, C. et al. (no date). Tinnitus and Hyperacusis. (Practice Portal). Retrieved month, day, year, from www.asha.org/Practice-Portal/Clinical-Topics/Tinnitus-and-Hyperacusis/.

What Causes Tinnitus?

- Hearing loss
- Loud noise exposure
- Head injury
- Migraine headaches
- Having significant ear wax
- High blood pressure
- Anemia
- Medications or street drugs

- Smoking
- Tumors
- To much caffeine

Author (No Date). Tinnitus. American Speech-Language Hearing Association. From website:
<https://www.asha.org/public/hearing/tinnitus/>.

What Causes Tinnitus?

- Ear infections
- Neck injuries
- Eustachian tube dysfunction
- Otosclerosis: the stiffening of the bones of the middle ear.
- Temporomandibular joint (TMJ) disorder
- Acoustic neuroma or other head and neck tumors
- Diabetes
- Thyroid disorder
- Autoimmune disorders:
 - Rheumatoid Arthritis, Lupus, etc.

Author (2021). Tinnitus. Mayo Clinic. From website: <https://www.mayoclinic.org/diseases-conditions/tinnitus/symptoms-causes/syc-20350156>.

Can COVID-19 Vaccines Cause Tinnitus?

- **Researches from Pakistan and Qatar reviewed the Vaccine Adverse Events Reporting System and found over 12,000 (world wide) people reported developing tinnitus after receiving a COVID-19 vaccine by September 14, 2021.**
- **Although the scientists determined this was a rare side effect they stated this should be watched for and methodologies should be developed to screen for this and treat it.**

Ahmed, S.H. et al. (February 11, 2022). SARS-CoV-2 vaccine-associated-tinnitus: A review. Annals of Medicine and Surgery. DOI: [10.1016/j.amsu.2022.103293](https://doi.org/10.1016/j.amsu.2022.103293).

Can COVID-19 Vaccines Cause Hearing Loss?

American scientists examined the number of sudden sensorineural hearing loss experienced by those who had received a COVID-19 vaccine after reviewing the Vaccine Adverse Events Reporting System to that effect and found that 555 people had been effected world wide 3 weeks after their injection. This data was collected during the first 7 months of the vaccine campaign. They concluded, however, their was no discernable connection between been vaccinated for COVID-19 and hearing loss.

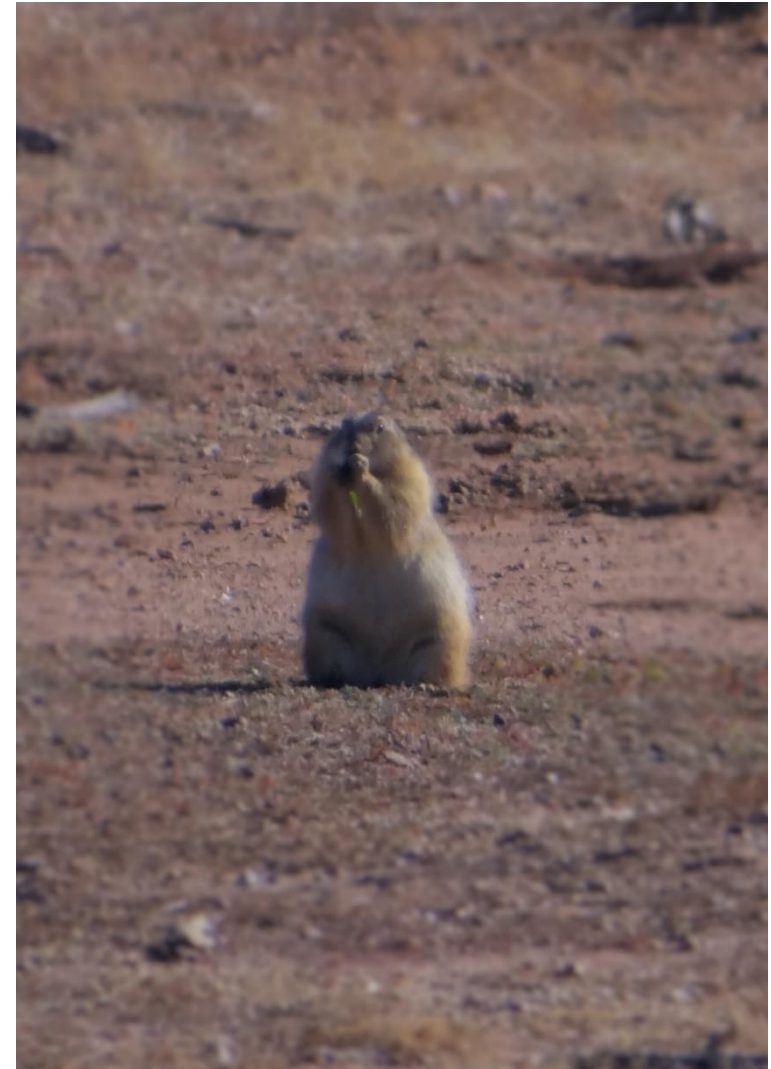
Formeister, E.J. et al. (February 24, 2022). Assessment of Sudden Sensorineural Hearing Loss After COVID-19 Vaccination. Journal of the American Medical Association (JAMA), Otolaryngology-Head and Neck Surgery. DOI: 10.1001/jamaoto.2021.4414.

Long-Haul COVID and Tinnitus

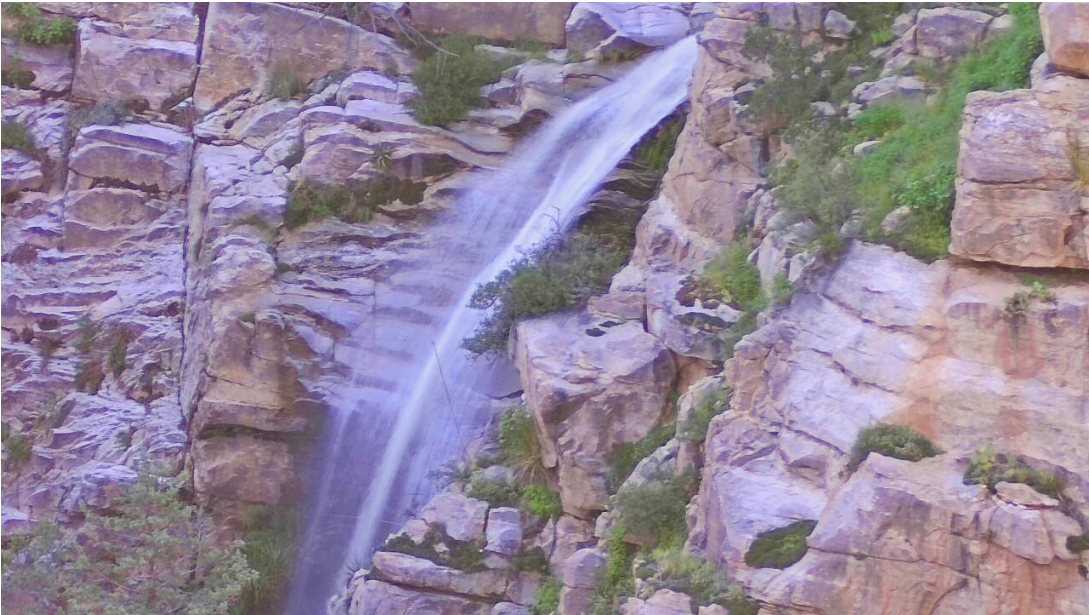
The following are the percentages of people with Long-Haul COVID that suffer hearing loss and/or tinnitus:

- **Hearing loss (7.6%)**
- **Tinnitus (14.8%)**
- **Pre-existing Tinnitus can become significantly worse**

Almufarrij, I. et al. (March 22, 2021). One year on: an updated systematic review of SARS-CoV-2, COVID-19 and audio-vestibular symptoms. International Journal of Audiology. DOI: [10.1080/14992027.2021.1896793](https://doi.org/10.1080/14992027.2021.1896793) .



Tinnitus Symptoms



- Humming
- Hissing
- Roaring
- Clicking
- Buzzing
- Rhythmic pulsing with heart beat (Rare)

Author (February 4, 2021). Tinnitus. Mayo Clinic.
From website:

<https://www.mayoclinic.org/diseases-conditions/tinnitus/symptoms-causes/syc-20350156>.

Tinnitus Symptoms

- **“Subjective” Vs. “Objective” Tinnitus**
 - Subjective tinnitus cannot be heard by physician.
 - Objective tinnitus, sometimes called “pulsatile tinnitus” can be heard by a by a physician.
 - The rhythmic pulsing occurs with your heard beat
- **Tinnitus can be chronic, or come and go.**
- **Tinnitus does not bother some people, but can ruin the life of others.**
- **Get help if: (1) tinnitus continues more than one week after a cold; (2) you experience dizziness, or hearing loss with tinnitus; or, (3) you experience anxiety and/or depression due to tinnitus.**

Author (February 4, 2021). Tinnitus. Mayo Clinic. From website: <https://www.mayoclinic.org/diseases-conditions/tinnitus/symptoms-causes/syc-20350156>.

Tinnitus Demographics

- **The Centers for Disease Control and Prevention (CDC) has estimated that about 10% of American adults have experienced at least 5 minutes of tinnitus in the past year. That equals about 25 million people.**
- **The CDC estimated that 11.2% of adult Americans suffer from tinnitus on a daily basis.**

Author (March 6, 2017). Tinnitus. Centers for Disease Control and Prevention. From website: <https://www.nidcd.nih.gov/health/tinnitus>.

Author (December 11, 2018). Loud Noise Can Cause Hearing Loss. Centers for Disease Control and Prevention. From website: https://www.cdc.gov/nceh/hearing_loss/public_health_scientific_info.html.

Tinnitus Demographics

- **The American Tinnitus Association (ATA) estimates as many as 20,000,000 Americans have troublesome tinnitus.**
- **ATA also estimates the 2,000,000 Americans have extremely debilitating tinnitus.**

Author (2022). Understanding the Facts. American Tinnitus Association. From website: <https://www.ata.org/understanding-facts>.

People at Risk of Tinnitus

- **People over the age of 60: 30%**
- **Veterans and Active Duty Military: 9%**
- **People who work in loud noise environments**
- **Musicians and Music Lovers**
- **People in Motor Sports**
- **Hunters**
- **People with Obsessive-Compulsive Disorder, Anxiety and Depression**

Author (2022). Demographics. American Tinnitus Association. From website: <https://www.ata.org/understanding-facts/demographics>.

Musical Tinnitus (Musical Hallucinations)

- **Experiencing “hearing” music when there is none in the environment.**
 - **In most it has no known cause and can have a mental health cause such as schizophrenia.**
 - **It can be caused by tinnitus and is treated with the same methodologies as “regular tinnitus.”**
 - **Usually experienced as short fragments of melodies that repeat over and over.**
 - **People with hearing loss often hear them as they did before their loss of hearing.**
 - **It happens more in women and people over the age of 60.**

Musical Tinnitus (Musical Hallucinations)

- **Can be seen in people with epilepsy and/or dementia**
 - **Can also experience changes in vision, speech, dizziness and severe headaches**
- **Can be related to obsessive compulsive disorder**

Cope, T.E. (March 2022). Musical Tinnitus (Musical Hallucinations). British Tinnitus Association. From website: <https://www.tinnitus.org.uk/musical-hallucination>.

Hyperacusis

“Hyperacusis is a rare hearing disorder that causes sounds which would otherwise seem normal to most people to sound unbearably loud. People who suffer from hyperacusis may even find normal environmental sounds to be too loud.”

- One in 50,000 will have hyperacusis**
- One in 1,000 people with hyperacusis will have tinnitus**

Goodson, S. and Hull, R.H. (2015). Hyperacusis. American Speech-Hearing Language Association: Rockville, MD. From website: <https://www.asha.org/siteassets/ais/ais-hyperacusis.pdf>.

Hyperacusis

Causes

- Bell's palsy
- Chronic fatigue syndrome Lyme disease
- Meniere's disease
- Posttraumatic stress disorder
- Depression
- Autism

Treatments

The same diagnostic techniques and treatment techniques as with tinnitus, with the exception of sound suppression.

Goodson, S. and Hull, R.H. (2015). Hyperacusis. American Speech-Hearing Language Association: Rockville, MD. From website: <https://www.asha.org/siteassets/ais/ais-hyperacusis.pdf>.

Types of Hyperacusis

- **Phonophobia: Abnormal and persistent fear of sound**
- **Misohonia: Individually unique strong dislike of certain sounds**
- **Decreased Sound Tolerance (Super Hearing): Avoidance of sound**

Coelho, C. et al. (no date). Tinnitus and Hyperacusis. (Practice Portal). Retrieved month, day, year, from www.asha.org/Practice-Portal/Clinical-Topics/Tinnitus-and-Hyperacusis/.

Tinnitus in the Workplace

- **25% of all workers in USA exposed to hazardous noise per year in the USA**
- **53% of workers who are in noisy environments wear no hearing protection**
- **8% of workers have tinnitus**

Author (November 11, 2021). Occupational Hearing Loss Surveillance: Overall Statistics – All U.S. Industries. The National Institute for Occupational Safety and Health (NIOSH); Centers for Disease Control and Prevention. From website: <https://www.cdc.gov/niosh/topics/ohl/overall.html>.

Jobs at Risk of Tinnitus

- **Factory workers are the number one risk for having tinnitus**
- **People who work in sports arenas and entertainment venues**
- **Musicians**
- **Farmers**
- **Dental workers**

- **Construction workers**
- **Coaches and referees**
- **Elementary school workers**
- **First Responders and Military Personnel**

Sandridge, S. (July 31, 2019). 8 Jobs That Lead to Hearing Loss and How to Prevent It: Turning up the volume on occupational hearing loss. Healthessentials. Cleveland Clinic. From website: <https://health.clevelandclinic.org/8-jobs-that-lead-to-hearing-loss-and-how-to-prevent-it/>.

Tinnitus & Military Service

- Tinnitus can negatively effect military personnel:
 - Mood: Depression w/ Tinnitus 22%, W/O Tinnitus 6%; Anxiety w/ Tinnitus 52%; Anxiety W/O Tinnitus 18%
 - Sleep: 59% W/ Tinnitus; 39% W/O Tinnitus
 - Concentration: 21% w/ Tinnitus even reading comprehension
 - Job Performance: 27% with Tinnitus
 - The researchers concluded this The Department of Defense and Veterans Administration need more to help those with tinnitus to help those in military service and those whom have served in the past.

Henry, J.A. et al. (March 21, 2019). Impact of Tinnitus on Military Service Members. Military Medicine. DOI: [10.1093/milmed/usy328](https://doi.org/10.1093/milmed/usy328).

Military and Tinnitus

“The data suggest that, for Service members, the presence of tinnitus can have effects on job performance, which may be directly or indirectly caused by effects of tinnitus on concentration, anxiety, depression, and sleep.”

Henry, J.A. et al. (March 21, 2019). Impact of Tinnitus on Military Service Members. Military Medicine. DOI: [10.1093/milmed/usy328](https://doi.org/10.1093/milmed/usy328).

Types of Sounds That Can Cause Tinnitus

- **One time exposure to extreme sound:**
 - **Gun shot close to ear, explosion, etc.**
- **Repeated exposure to loud sounds**
- **Continuous exposure to sound over 85 (dB) for 8 hours**
- **100 (dB) can cause hearing damage in 15 minutes**
- **Motorcycle 95 (dB); Rock Concert 105-110 (dB), Firecrackers 140 to 150 (dB), Military jet aircraft take-off from aircraft carrier with afterburner at 50 feet away (130 dB).**

Sandridge, S. (July 31, 2019). 8 Jobs That Lead to Hearing Loss and How to Prevent It: Turning up the volume on occupational hearing loss. Healthessentials. Cleveland Clinic. From website: <https://health.clevelandclinic.org/8-jobs-that-lead-to-hearing-loss-and-how-to-prevent-it/>.

From website: <https://www.chem.purdue.edu/chemsafety/Training/PPETrain/dblevels.htm>.

Extreme Sound Can Be VERY DANGEROUS!

- A sound of 150 dB can burst your ear drums
- Sounds of 185 to 200 dB can kill you
- Saturn V rocket launch, First stage: 204 dB
- Volcanic eruption of Krakatoa in 1883: 310 dB

Anthony, S. (February 4, 2014). Can a loud enough sound kill you? ExtremeTech. From website: <https://www.extremetech.com/extreme/175996-can-a-loud-enough-sound-kill-you>.

Williams, E. (April 15, 2021). 11 Loudest Sounds Ever Recorded. Headphonesproreview. From website: <https://headphonesproreview.com/loudest-sounds-ever-recorded/>.

“Emergency Tinnitus”

➤ Some Italian scientists found:

- About 7% of the general population seek medical help to treat their tinnitus and .5% to 2% seek “emergency” help for their symptoms.
- Those who see “emergency help” have suffered with chronic debilitating tinnitus, or acute tinnitus that has significantly reduced their quality of life.
- The scientists suggested such patients need emergency treatment to reduce mortality and morbidity.

Altissim, G. et al. (2016). When alarm bells ring: Emergency tinnitus. European Review for Medical and Pharmacological Sciences. From website: <http://www.europeanreview.org/wp/wp-content/uploads/2955-2973-When-alarm-bells-ring-emergency-tinnitus.pdf>.

When Should a Patient With Tinnitus Be Referred To A Mental Health Professional?

Researchers from Great Britain, Germany and the United States found:

- **All patients seeking treatment for tinnitus should be screened for suicidal ideation.**
- **This is especially true of those with symptoms of depression and/or a childhood history of parental mental illness.**
- **Under such circumstances the patients should be referred to a mental health professional.**

Aars, H. et al. (September 2019). Parental Mental Illness in Childhood as a Risk for Suicidal and Self-Harm in Adults seeking Help for Tinnitus and/or Hyperacusis. American Journal of Audiology. DOI: [10.1044/2019_AJA-18-0059](https://doi.org/10.1044/2019_AJA-18-0059).

Assessment and Treatment Team for Tinnitus

- **AUDIOLOGIST**
- **OTOLARYNGOLOGIST (a.k.a. ENT)**
- **NEUROTOLOGIST**
- **NEUROLOGIST**
- **DENTIST**
- **PHYSICAL THERAPIST**
- **PSYCHIATRIST**
- **Other Mental Health Professionals**

Author (2022). Definitions of Tinnitus Health-Care Providers: Learn About the Different Types of Tinnitus Health-Care Providers. American Tinnitus Association (ATA). Washington, DC. From website: <https://www.ata.org/providers>.

How is Tinnitus Diagnosed?

- **Audiological Examination:** Can check for hearing loss and potential cause of tinnitus.
- **Physical Examination by a physician:** Doctor will have you move your eyes, arms and legs, clench your jaw, etc. to determine if the tinnitus gets worse with movement. This may indicate if there is a “physical” cause to your tinnitus.
- **A head MRI and/or CT**
- **Blood tests for vitamin deficiencies, thyroid difficulties, heart disease, and anemia.**

Author (2022). Tinnitus: Diagnosis and Treatment. Mayo Clinic. From website:
<https://www.mayoclinic.org/diseases-conditions/tinnitus/diagnosis-treatment/drc-20350162>.

Tinnitus Treatment

- Ear Wax Removal
- Treating Blood Vessel Difficulties
- Hearing Aids
- Changing Medications
- Noise Masking Devices
- Tinnitus Retraining Therapy (TRT)
- Cognitive Behavioral Therapy (CBT)

Author (2022). Tinnitus: Diagnosis. Mayo Clinic.
From website:

<https://www.mayoclinic.org/diseases-conditions/tinnitus/diagnosis-treatment/drc-20350162>.

- Lifestyle changes:
 - Wear hearing protection in loud environments
 - Limit alcohol, caffeine and nicotine
 - Reduce volume on TV, ear pods, etc.
 - Use white noise in quiet settings
- Alternative treatments with very little research behind them:
 - Zinc supplements
 - Acupuncture
 - Melatonin
 - Ginkgo biloba

Tinnitus Retraining Therapy (TRT) Efficacy

- **A 2018 Cochrane review of the literature related to this type of therapy found the treatment was no better than no treatment control. It was said what research that had been done on TRT had been was of low quality.**
- **A similar review in 2021 conducted in China came to similar conclusions.**

Sereda, M. et al. (December 27, 2018). Sound therapy (using amplification devices and/or sound generators) for tinnitus. Cochrane Library of Systematic Reviews. DOI: [10.1002/14651858.CD013094.pub2](https://doi.org/10.1002/14651858.CD013094.pub2).

Han, M. et al. (November-December 2021). Efficacy of tinnitus retraining therapy in the treatment of tinnitus: A meta-analysis and systematic review. American Journal of Otolaryngology. DOI: [10.1016/j.amjoto.2021.103151](https://doi.org/10.1016/j.amjoto.2021.103151).

However...

There is some evidence from American researchers that being fitted with hearing aids with sound generators helped people with hearing loss and tinnitus experience a reduction of impairment due to tinnitus. But, the same result was found of those with hearing loss and tinnitus that were fitted with hearing aids without a sound generator. One small problem Starkey Hearing Technologies funded the study.

James, H.A. et al. (July 2, 2014). Validation of a Novel Combination Hearing Aid and Tinnitus Therapy Device. Ear and Hearing. DOI: 10.1097/AUD.0000000000000093.

Hearing Aids and Tinnitus

A 2013 literature review indicated the majority of the studies (17 to 1) reviewed indicated hearing aids can help with tinnitus management. It was found hearing aids did not have a strong effect on tinnitus, but help with managing it's symptoms.

Shekhawat, G.S. et al. (2013). Role of Hearing Aids in Tinnitus Intervention: A Scoping Review. Journal of the American Academy of Audiology. DOI: 10.3766/jaaa.24.8.11.

Cochlear Implants and Tinnitus

There is some evidence that cochlear implants may reduce and in some cases “remove” tinnitus. However, the FDA has not has not approved them for the treatment of tinnitus and such a procedure is quite extreme. However, some have said it can significantly help reduce problems caused by tinnitus.

Elgandy, M.S. et al. (December, 2018). A Unilateral Cochlear Implant for Tinnitus. International Tinnitus Journal. DOI: [10.5935/0946-5448.20180022](https://doi.org/10.5935/0946-5448.20180022).

Author (2022). Cochlear Implants. Mayo Clinic. From website: <https://www.mayoclinic.org/tests-procedures/cochlear-implants/about/pac-20385021>.

Tinnitus Smart Phone Apps

Two researchers from Hofstra University investigated both free and paid phone apps to treat tinnitus. They found the Google platform offered the most options of both. It appeared the “how to manage tinnitus” apps were most useful. They discovered a “few” tinnitus “misinformation” apps. There was no difference between the paid and free apps in terms of treatment efficacy. In conclusion, they recommended audiological clinicians be aware of such apps and become aware of those which can be helpful.

Deshpante, A.K et al. (September 13, 2019).A Comprehensive Evaluation of Tinnitus Apps. ASHAWire. DOI: [10.1044/2019_AJA-18-0135](https://doi.org/10.1044/2019_AJA-18-0135).

Physical Therapy Tinnitus Treatments

- Physical therapist have a way of helping patients do physical exercises to relieve the symptoms of Temporal Mandibular Joint Syndrome (TMJ) and cervical spine problems that can cause tinnitus.
- German and Dutch scientist reviewed the literature regarding these treatments for these causes of tinnitus and found, “...it is noteworthy that all included studies showed positive treatment effects.”
- However, they also wrote the quality of the research needs to improve substantially to recommend such treatment.

Michiels, S. et al. (November 29, 2016). The Effect of Physical Therapy Treatment in Patients with Subjective Tinnitus: A Systematic Review. Frontiers of Neuroscience. DOI: [10.3389/fnins.2016.00545](https://doi.org/10.3389/fnins.2016.00545).

Places to Review Research Related to Complimentary, Alternative and Integrative Medicine

- **National Center for Complimentary and Integrative Health:** <https://www.nccih.nih.gov/>
- **Cochrane:** <https://www.cochrane.org/>
- **Quackwatch:** <https://quackwatch.org/>

Why There is No Cure For Tinnitus

- Very little money for good research
 - Tinnitus prevalence is unclear
 - Lack of a clear definition of tinnitus
 - Lack of knowledge about subtypes and their possible treatments
 - A lack of biomarkers
 - Lack of objective measures
 - No clear animal models of tinnitus
 - Poor control of placebo effect in research
 - No definition that defines a tinnitus “cure”
 - No way for Pharma to distribute medications to “non-prescribers”
- McFerran, D.J. et al. (August 6, 2019). Why Is There No Cure for Tinnitus? Frontiers in Science. DOI: [10.3389/fnins.2019.00802](https://doi.org/10.3389/fnins.2019.00802).

Tinnitus May Be a Heterogeneous Disorder

- This may explain why only subtypes of patients will respond to only one type of treatment.
- Recording the connections between what treatment responders improve with which treatment would be a start.
- Creating “if-then” decision trees of negative and positive treatment response would help in the overall treatment of the disorder.
- Subtyping tinnitus and learning what treatment to use with each subtype would be helpful.
- The researcher believed, “personalized treatment for tinnitus patients based on patients' personal, tinnitus, and treatment characteristics should be feasible.”

Simoes, J. et al. (June 25, 2019). Toward Personalized Tinnitus Treatment: An Exploratory Study Based on Internet Crowdsensing. Frontier in Public Health. DOI: [10.3389/fpubh.2019.00157](https://doi.org/10.3389/fpubh.2019.00157).

Mental Health Treatments



Cognitive Behavioral Therapy and Tinnitus (CBT)

In 2011 a group of Swedish research conducted a literature review of the use of CBT to treat tinnitus. They concluded that overall the use of CBT as a treatment was efficacious, but cautioned that this was based on the results of very few large, controlled studies.

Hesser, H. et al. (June, 2011). A systematic review and meta-analysis of randomized controlled trials of cognitive-behavioral therapy for tinnitus distress. Clinical Psychology Review. DOI: [10.1016/j.cpr.2010.12.006](https://doi.org/10.1016/j.cpr.2010.12.006).

Cognitive Behavioral Therapy and Tinnitus (CBT)

A similar review was conducted by Korean investigators that included a meta analysis. They reached the same conclusions regarding CBT and it's usefulness in treating tinnitus efficaciously.

Hyung, J.J. et al. (December, 2013). Cognitive Behavioral Therapy for Tinnitus: Evidence and Efficacy. Korean Journal of Audiology. DOI: [10.7874/kja.2013.17.3.101](https://doi.org/10.7874/kja.2013.17.3.101).

Cognitive Behavioral Therapy for Chronic Illness and Depression

- **Negative view of self: Dwell on past failings and blame self for illness.**
- **Negative view of personal world: Everyone is bad and no one cares.**
- **Negative view of the future: Your loss is permanent. Nothing you can do will change your outcome. Hopelessness.**

Cotterell, N. (May 1, 2017). Depression and Chronic Illness: CBT for Medical Conditions. From website: <https://beckinstitute.org/depression-chronic-illness/>.

Goals

- **People with chronic illness tend to take less care of themselves than the general population.**
- **They can become preoccupied with their illness and forget they have other aspects of themselves.**
 - **Have them focus on strengths, skills and competencies.**
 - **Ask them, “What would you do if things got better?”**
 - **Some may say, “reconnect with their friends’, or, “accept more help from my family”, etc.**
 - **Have them set a goal to do so. Goal setting can be a good first step to regain control of one’s life.**
 - **Focus on what they can do to reconnect with friends, recreation, entertainment, fitness and self-care.**

Cotterell, N. (May 1, 2017). Depression and Chronic Illness: CBT for Medical Conditions. From website: <https://beckinstitute.org/depression-chronic-illness/>.

Cost Benefit Analysis: Empowerment

- They can be thinking so negatively they have no motivation to change.
- Have them start out by listing all the negatives that could happen if they tried to change (that should be easy).
- Then encourage them to list the possible positives of working to change. Have them note the benefits of making change.
- Have them weigh the benefits of positive change against the negatives of no motivations.
- Actively have them think of how their lives have improved by taking action and change.
- Teach them how to know and when to get help (depression, etc.).

Cotterell, N. (May 1, 2017). Depression and Chronic Illness: CBT for Medical Conditions. From website: <https://beckinstitute.org/depression-chronic-illness/>.

Goals

- **People with chronic illness tend to take less care of themselves than the general population.**
- **They can become preoccupied with their illness and forget they have other aspects of themselves.**
 - **Have them focus on strengths, skills and competencies.**
 - **Ask them, “What would you do if things got better?”**
 - **Some may say, “reconnect with their friends’, or, “accept more help from my family”, etc.**
 - **Have them set a goal to do so. Goal setting can be a good first step to regain control of one’s life.**
 - **Focus on what they can do to reconnect with friends, recreation, entertainment, fitness and self-care.**

Cotterell, N. (May 1, 2017). Depression and Chronic Illness: CBT for Medical Conditions. From website: <https://beckinstitute.org/depression-chronic-illness/>.

Cost Benefit Analysis: Empowerment

- They can be thinking so negatively they have no motivation to change.
- Have them start out by listing all the negatives that could happen if they tried to change (that should be easy).
- Then encourage them to list the possible positives of working to change. Have them note the benefits of making change.
- Have them weigh the benefits of positive change against the negatives of no motivations.
- Actively have them think of how their lives have improved by taking action and change.
- Teach them how to know and when to get help (depression, etc.).

Cotterell, N. (May 1, 2017). Depression and Chronic Illness: CBT for Medical Conditions. From website: <https://beckinstitute.org/depression-chronic-illness/>.

Improving Self-Care and Advocacy

- **People with chronic illness tend to be isolated and have poor self-care. Just getting them to take a bath, and brush their teeth can help them feel better about themselves.**
- **They can join support groups for people with their chronic illness (investigate the group first).**
- **Teach them to advocate for themselves and others with the medical professionals.**
- **This will help the feel more in control of their lives, more competent and functional as a human being.**

Cotterell, N. (May 1, 2017). Depression and Chronic Illness: CBT for Medical Conditions. From website: <https://beckinstitute.org/depression-chronic-illness/>.

Self-Education

- **Become “educated” about your illness.**
 - **Write down questions you have for doctor.**
 - **Ask medical providers to explain it in lay peoples’ words. Record what they say. Have someone with you as a second set of ears.**
 - **Check “legitimate” internet sites (i.e., Mayo Clinic, Cleveland Clinic, National Institutes of Health, National Center for Complementary and Integrative Health, etc.).**
 - **Contact National Association related to your disorder and join a support group, if available.**
 - **Learn to speak the medical language related to your disorder.**

Author (March 9, 2021). Chronic Illness and Depression. Cleveland Clinic. From website: <https://my.clevelandclinic.org/health/articles/9288-chronic-illness-and-depression>.

Other Suggestions

- Eating a healthy diet.
- Getting as much physical activity as you can.
- Avoiding negative coping mechanisms like alcohol and substance abuse.
- Exploring stress-relief activities like meditation.
- Letting go of obligations that you don't really need to do or want to do.
- Asking for help when you need it.
- Staying in touch with family and friends.

Author (March 9, 2021). Chronic Illness and Depression. Cleveland Clinic. From website:
<https://my.clevelandclinic.org/health/articles/9288-chronic-illness-and-depression>.

Acceptance and Commitment Therapy (ACT)

ACT forms its bases on Relational Frame Therapy (RFT) which examines the context of relations and what rational behavioral change can be made with Behavioral Analysis. It also understands the power internalized speech has on people hence it has a component of Cognitive Behavioral Therapy (CBT). Clients learn to neutralize their negative self-talk, develop clarity for their values and what they want, and commit to the needed changes in behavior. There is also a component of mindfulness that instills the concept of being in the moment and not using avoidance behavior. Finally, the client is encouraged to change the things within their power and accept that they cannot change.

Dewane, C. (September/October 2008). The ABCs of ACT — Acceptance and Commitment Therapy. Social Work Today. From website: <https://www.socialworktoday.com/archive/090208p36.shtml> .

Acceptance and Commitment Therapy (ACT)

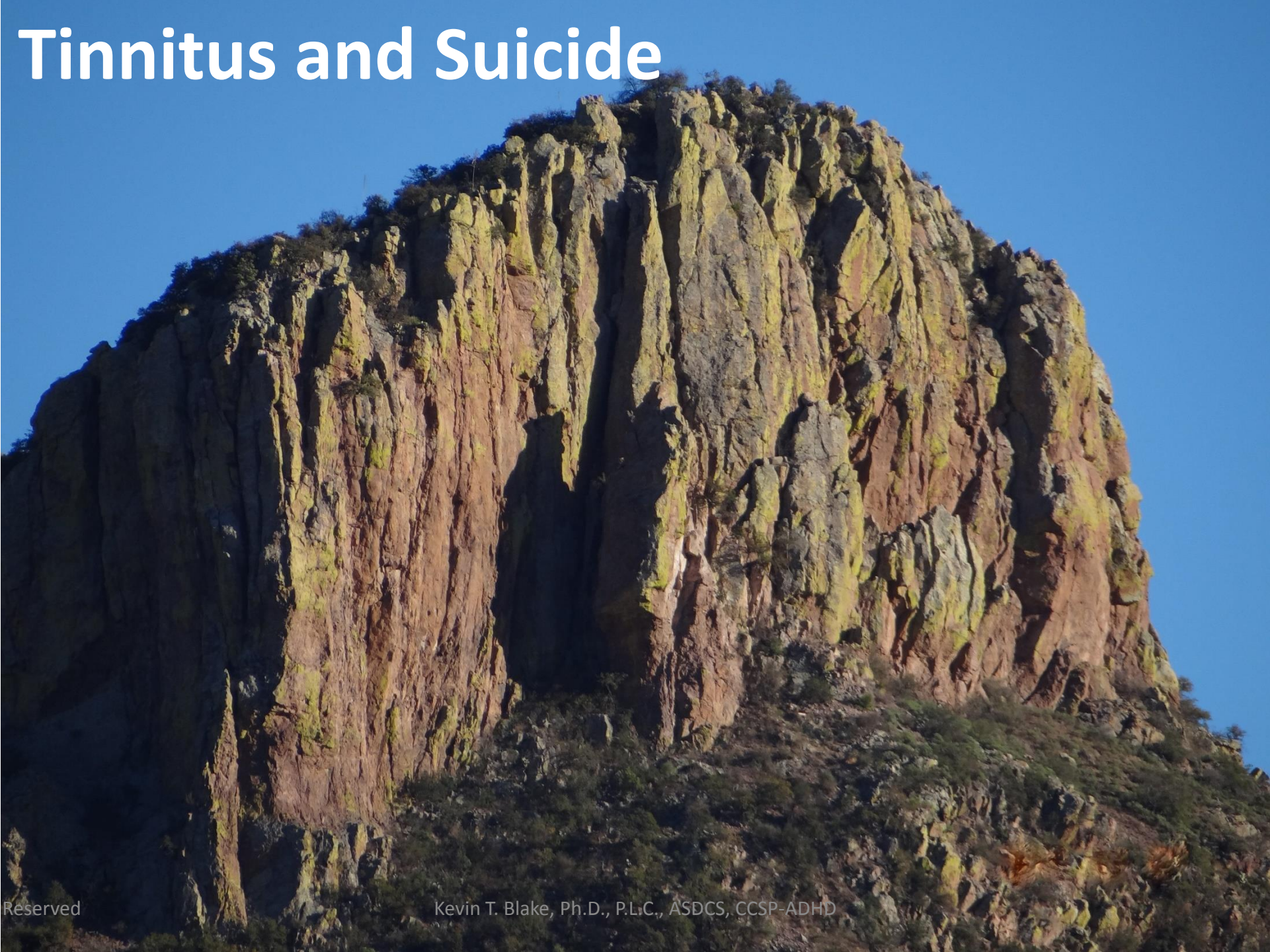
“Acceptance and commitment therapy has been associated with improved outcomes in patients with chronic pain (comparable to cognitive behaviour therapy) and several studies suggest that it may be useful in patients with mild to moderate depression. Preliminary evidence of benefit has also been shown in the setting of obsessive-compulsive disorder, psychosis, smoking, tinnitus, epilepsy and emotionally disordered eating after gastric band surgery.”

Smout, M. (September, 2012). Acceptance and commitment therapy: Pathways for general practitioners. Australian Family Physician. From website: <https://www.racgp.org.au/afp/2012/september/acceptance-and-commitment-therapy> .

How to Find a Tinnitus Support Group

- **American Tinnitus Association (ATA) offers support groups nationwide:**
[https://www.ata.org/managing-your-tinnitus/support-network/support-group-listing.](https://www.ata.org/managing-your-tinnitus/support-network/support-group-listing)

Tinnitus and Suicide



What Does the Research Say?

“It is not possible to arrive at any reasonable conclusion given the lack of quality studies, meaning the pooled prevalence should be interpreted very cautiously. Suicidal ideation may be more prevalent in tinnitus populations. Further large-scale epidemiological research investigating this relationship is needed, which may help psychiatric risk stratification.”

Taylor, B.V. et al. (October 25, 2021). Suicidal ideation in people with tinnitus: a systematic review and meta-analysis. The Journal of Laryngology and Otology. DOI: [10.1017/S0022215121003066](https://doi.org/10.1017/S0022215121003066).

What Does the Research Say?

- **A Swedish study indicated 3.4% of those with tinnitus attempt suicide.**
- **2.4% of men with tinnitus attempt suicide**
- **4.1% of women with tinnitus attempt suicide**
- **5.2% of people under the age of 35 attempt suicide**

Lugo, A. et al. (May 2, 2019). Sex-Specific Association of Tinnitus With Suicide Attempts. JAMA Otolaryngology-- Head & Neck Surgery. DOI: [10.1001/jamaoto.2019.0566](https://doi.org/10.1001/jamaoto.2019.0566).

What Does the Science Say?

“This study shows a sex-dependent association of tinnitus with suicide attempts, with severe tinnitus associated with suicide attempts in women but not in men. Since only a fifth of the participants with severe tinnitus were diagnosed by a specialist, there is a need for increasing resources toward the management of tinnitus in clinical practice. Furthermore, additional research is needed to understand the pathophysiological differences between men and women with tinnitus.”

Lugo, A. et al. (May 2, 2019). Sex-Specific Association of Tinnitus With Suicide Attempts. JAMA Otolaryngology-- Head & Neck Surgery. DOI: [10.1001/jamaoto.2019.0566](https://doi.org/10.1001/jamaoto.2019.0566).

Assessing Suicidality

- **Limitations to traditional Suicide Risk Assessment:**
 - **Suicide is extremely dynamic (lot's of ups and downs – need to get a “video assessment” not a “photograph assessment”, there is no continuum of risk)**
 - **Suicided risk changes suddenly and is not linier (“Out of the blue”- Assess risk over and over and over)**
 - **Suicidal thinking is heterogeneous – There is no specific thoughts a highly suicidal person has**

Bryan, C. (November 18, 2020). Innovations in Suicide Risk, Screening, and Assessment. American Psychological Association, Washington, DC. Video from website: <https://www.apa.org/career-development/suicide-prevention>.

Other Important Things to Know About Suicide

- **The higher the risk the higher and lower the amplitude of the “Ups and Downs.”**
- **The more frequency of ups and downs the more suicidal risk.**
- **50% of those who complete suicide deny suicidal ideation and do not mention suicidal thoughts.**
- **99% of those who report suicidal ideation do not die by suicide.**
- **50% of those who attempt suicide deny planning prior to their attempt.**
- **Those with Borderline Personality Disorder, Bipolar Disorder, Intermittent Explosive Disorder and Substance abuse are high risk and need constant assessment.**

Bryan, C. (November 18, 2020). Innovations in Suicide Risk, Screening, and Assessment. American Psychological Association, Washington, DC. Video from website: <https://www.apa.org/career-development/suicide-prevention>.

Three Question Assessment Used by Hospital Emergency Departments

- Author (No Date). Suicide Prevention. National Institute of Mental Health (NIMH). From website:
https://www.nimh.nih.gov/health/topics/suicide-prevention#part_2475.
- Broudreux, E.D. et al. (December 4, 2015). Improving Suicide Risk Screening and Detection in the Emergency Department. American Journal of Preventative Medicine. DOI:
10.1016/j.amepre.2015.09.029.
- Patient Safety Screener-3 (PSS-3):
<https://www.ajpmonline.org/cms/10.1016/j.amepre.2015.09.029/attachment/6a2fe536-8ae6-4dc0-8915-71635f4cc3f6/mmc1.pdf>.

Suicide Assessment

- **CAMS SUICIDE STATUS FORM–4 (SSF-4) INITIAL SESSION.** From website: <https://www.nevadacertboard.org/wp-content/uploads/2017/08/SSF-4.pdf>

Treating Suicidality

- **Empirically supported suicide prevention programs.**
 - **Each has as part of it cognitive behavioral therapy:**
 - **Brief Cognitive Behavioral Therapy for Suicide Prevention (BCBT)**
 - **Cognitive Therapy for Suicidal Patients (CT-SP)**
 - **Dialectical Behavior Therapy (DBT)**
 - **Collaborative Assessment and Management of Suicidality (CAMS)**

Harris, E.A. and Jobes, D.A. (2020). Providing Risk Management for Potentially Suicidal Patients in Outpatient Practice (CAMS-Care). The Trust: Washington, DC. Video from website: <https://thetrust.learnupon.com/store/1175456-providing-effective-risk-managed-treatment-for-potentially-suicidal-patients-in-outpatient-private-practice-cams-care>.

Treating Suicidality

- **What has been learned from research:**
 - **One needs to treat suicidality with a simple empirically based model with good theory behind it.**
 - **The treatment needs follow a reliable administration by clinicians**
 - **The therapist enlists client engagement and compliance**
 - **Skills training is the focus (Homework and Practice)**
 - **Create super easy access to crisis services (if all else fails)**
 - **Focus on Internal Support – Prioritization of self-management**

Bryan, C.J. (November 20, 2020). Brief Interventions to Prevent Suicide: An Introduction. American Psychological Association. Washington, D.C. Video from website: <https://www.apa.org/career-development/suicide-prevention>.

Goal Of BCBT

- **To treat suicidal thoughts and suicidal behaviors such that suicidal risk is significantly reduced. Treating depression does not reduce the risk of suicide. The full focus is to reduce suicidal risk. CBT has been empirically to be the best treatment with a reduction of suicidal ideation from 20% to 50%.**

Bryan, C.J. (November 20, 2020). Brief Interventions to Prevent Suicide: An Introduction. American Psychological Association. Washington, D.C. Video from website: <https://www.apa.org/career-development/suicide-prevention>.

- **I have a caveat to this...The full focus of the mental health professionals should be to reduce suicide risk. The ENT, audiologist, etc. can at the same time focus on reducing the bothersome symptoms of tinnitus.**

Structure of BCBT

➤ Step 1: Emotional Regulation

➤ Session 1:

- Skills training
- Suicide risk assessment
- Narrative risk intake
- Crisis Response Plan
- Means Safety Planning

➤ Sessions 2-5

- Treatment plan
- Mindfulness/Relaxation
- Reasons for living
- Survival Kit

➤ Step 2: Cognitive Flexibility

➤ Sessions 6-10?

- ABC Worksheets
- Patterns of thinking problems
- Planning activities
- Challenging questions
- Coping reminders with direct focus on suicide

Structure of BCBT

- **Phase 3: Relapse Prevention**
 - **Sessions 11-12?**
 - Imaginary Relapse Prevention Task
 - Stress inoculation.

**Bryan, C.J. (November 20, 2020).
Brief Interventions to Prevent
Suicide: An Introduction.
American Psychological
Association. Washington, D.C.
Video from website:
[https://www.apa.org/career-
development/suicide-prevention.](https://www.apa.org/career-development/suicide-prevention)**

Crises Response Plan (CRP)

1. Explain Rationale
2. Provide writing materials
3. ID self-management strategies
4. ID personal warning signs (Self-talk/behavior)
5. ID reasons for living (will increase speed of controlling suicidal thoughts)
6. ID Social Supports

7. Provide Crisis Steps
8. Verbally review and rate likelihood of strategy use

Bryan, C.J. (November 20, 2020). Brief Interventions to Prevent Suicide: An Introduction. American Psychological Association. Washington, D.C. Video from website: <https://www.apa.org/career-development/suicide-prevention>.

Americans With Disabilities ACT and Tinnitus



Tinnitus and The Veteran's Administration

- **The Veteran's Administration has considered hearing loss and tinnitus disabling conditions since 1968.**

Murry, C. (August 21, 2015). Citation Nr: 1531057 Decision Date: 07/21/15 Archive Date: 08/05/15 DOCKET NO. 13-28 958) DATE)) On appeal from the Department of Veterans Affairs Regional Office in Newark, New Jersey. THE ISSUE: Entitlement to an effective date earlier than May 5, 2010 for a 10 percent disability rating for tinnitus. From website: <https://www.va.gov/vetapp15/Files4/1531057.txt?fbclid=IwAR2NzEd6tpXE9h5-9y>.

Tinnitus and the ADAAA

It wasn't until Federal District Judge Matthew F. Kennelley ruling on February 2, 2017 that the Americans with Disabilities, Amendment Act of 2008 (ADAAA 2008) recognized tinnitus as a legitimate disability.

Kennelley, M.F. (February 2, 2017). McKay v. Vitas Healthcare Corp. of Illinois. UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS EASTERN DIVISION: Case No. 15 C 7970. 232 F. Supp. 3d 1038 (N.D. Ill. 2017). From website: <https://casetext.com/case/mckay-v-vitas-healthcare-corp/>.

Social Security Disability (SSD)/Social Security Supplemental Income (SSI) and Tinnitus

“Tinnitus can be a severe medical condition, therefore it should be listed if a person is filing for SSD or SSI disability benefits. This condition is most often classified as a hearing impairment. If it were listed in the SSA Blue Book impairment listings, it would be covered in the adult listings section 2.00, Special Senses and Speech - Adult.”

Moore, T. (No Date). Tinnitus and Filing for Disability. Social Security Disability Resource Center. From website: <https://www.ssdrcc.com/ssd-tinnitus.html>.

Working When One Has Tinnitus

- **38 Percent of those who have tinnitus report having difficulty at work because of it.**
 - **41 percent of those people indicate it negatively affects their concentration (concentration fatigue).**
 - **17.7% said they have not been able to advance in their career due to tinnitus.**
 - **55.3% said their tinnitus caused them not problem at work.**

Geodhart, H and Vesala, M. (January 8, 2020). Working with Tinnitus. Hearing Health Foundation. From Website: <https://hearinghealthfoundation.org/blogs/working-with-tinnitus>.

Work Accommodations for Tinnitus

Job Accommodations Network (JAN):

- **Recommends the following technology for those having difficulty with tinnitus in the workplace**
 - **Cubical doors, shields and shades; environmental sound machines, white noise machines, tinnitus maskers; hearing protection; noise abatement; noise canceling earbuds/headphones; real-time off-line captioning services; sound absorption and soundproof panels.**

Author (No Date). Ringling in the Ears. From website: <https://askjan.org/limitations/Ringing-in-the-Ears.cfm>.

Legal Help

- **National Disability Rights Network:** www.ndrn.org
- **Disabilities Rights Law Association:** <http://disabilityrights-law.org/>
- **National Association of Disability Representatives:** www.nadr.org
- **The National Organization of Social Security Claimants' Representatives:** <https://nosscr.org/>

Resources



Protecting Hearing

- Author (March 2, 2022). ASHA and HLAA Stress Need for Hearing Protection Across the Lifespan This World Hearing Day, With Millions at Risk for Preventable Damage. American Speech-Language Hearing Association (ASHA). From website: <https://www.asha.org/news/2022/asha-and-hlaa-stress-need-for-hearing-protection-across-the-lifespan-this-world-hearing-day-with-millions-at-risk-for-preventable-damage/>.
- Author (March 2, 2021). Hearing Protectors. National Institute Deafness and Other Communication Disorders. From website: <https://www.nidcd.nih.gov/health/hearing-protectors>.

Support Organizations

- **American Tinnitus Association:** <https://www.ata.org/>
 - **Support Groups, Etc.:** <https://www.ata.org/managing-your-tinnitus/support-network>
- **British Tinnitus Association:** <https://www.tinnitus.org.uk/>
- **Canadian Tinnitus Foundation:**
<https://www.facebook.com/CanadianTinnitusFoundation/>
- **American Speech-Language Hearing Association (ASHA):**
<https://www.asha.org/>
- **American Academy of Otolaryngology-Head and Neck Surgery:**
<https://www.entnet.org/>

Job Accommodations

- Job Accommodations Network: <https://askjan.org/>
- Occupational Health and Safety Administration (OSHA)
(Part of the Department of Labor):
 - <https://www.osha.gov/coronavirus/faqs#return-to-work>
- OSHA Employers' Emergency Temporary Standards for COVID-19:
 - <https://www.osha.gov/coronavirus/faqs#return-to-work>

Suicide Resources

- National Suicide Prevention Hotline (English & Spanish/ 24/7): 800-273-8255
- National Suicide Prevention Lifeline:
<https://suicidepreventionlifeline.org/>
 - After July 16, 2022 dial 988
- Veterans Crisis Line: <https://www.veteranscrisisline.net/>
 - Phone: 1-800-273-8255 Press: 1; Text 838255
- National Institute of Mental Health (NIMH) – Suicide Prevention: <https://www.nimh.nih.gov/health/topics/suicide-prevention>
- American Foundation for Suicide Prevention:
<https://afsp.org/find-a-local-chapter?radius=50&zip=85749>

Suicide Treatment and Prevention Resources

- Collaborative Assessment and Management of Suicidality (CAMS-Care):
<https://cams-care.com/about-cams/>
- Cognitive Behavioral Therapy for Suicidal Patients (CT-SP):
<https://deploymentpsych.org/treatments/Cognitive-Therapy-for-Suicidal-Patients-CT-SP>
- Brief Cognitive Therapy for Suicide Prevention: Bryan, C.J. and Rudd, M.D. (2018). Brief Cognitive-Behavioral Therapy for Suicide Prevention. New York, NY: Guilford.
- Rojas, M.S. et al. (February, 2021). Brief Cognitive-Behavioral Therapy for Suicide Prevention (BCBT-SP) via Video Telehealth: A Case Example During the COVID-19 Outbreak. Cognitive and Behavioral Practice. DOI: [10.1016/j.cbpra.2020.12.001](https://doi.org/10.1016/j.cbpra.2020.12.001).
- McCauley, E. et al. (August 2018). Efficacy of Dialectical Behavior Therapy for Adolescents at High Risk for Suicide: A Randomized Clinical Trial. Journal of the American Medical Association: Psychiatry. DOI: [10.1001/jamapsychiatry.2018.1109](https://doi.org/10.1001/jamapsychiatry.2018.1109).

Thank You!



- **Kevin T. Blake, Ph.D., P.L.C.**
- **Office: 520-327-7002**
- **E-mail:**
kblake@drkevintblake.com
- **Website: www.drkevintblake.com**
- **Mail: 5210 East Pima, Suite 200,
Tucson, AZ 85712**