

## WIDEX ZEN THERAPY EDUCATIONAL SERIES SPRING 2017

### WHY IS ZEN UNIQUE

Understanding the theory and power of ZEN

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## WHAT IS TINNITUS?

- Defined as “a ringing or similar sensation in the ear(s)”.
- May occur in only **one ear**, **both ears**, or **centralized** “in the head”.
- Hundreds of “causes”- including hearing loss
- **No cure** – but therapy has been proven to offer significant relief



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## FACTS ABOUT TINNITUS

- Experienced by over 50 million Americans.
- 15-20% of the general population affected
- Majority (75%) report tinnitus is more of an “irritation”.
- 2 million are seriously disabled by it.
- Approximately 16 million seek treatment.
- 70-85% of hearing impaired individuals



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## AUDITORY DEPRIVATION

- Hearing loss deprives the brain of expected sound stimulation.
- When the brain is deprived of sound stimulation the auditory regions become more active...



**TINNITUS** may be a result !



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## TINNITUS AND STRESS

- People with tinnitus have a **higher level of stress**.
- Reducing stress helps **minimize** the negative impact of tinnitus.



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## TINNITUS AND STRESS

- Tinnitus and stress are highly correlated:

1. Stress increases
2. Perception of tinnitus increases
3. Tinnitus increases
4. Stress increases



Vicious Cycle



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# TINNITUS TREATMENT

- Sound Therapy
  - Environmental Sounds
  - Noise
  - Music



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# GOAL OF SOUND THERAPY

## HABITUATION



Do you feel your watch?



Do you hear the train?



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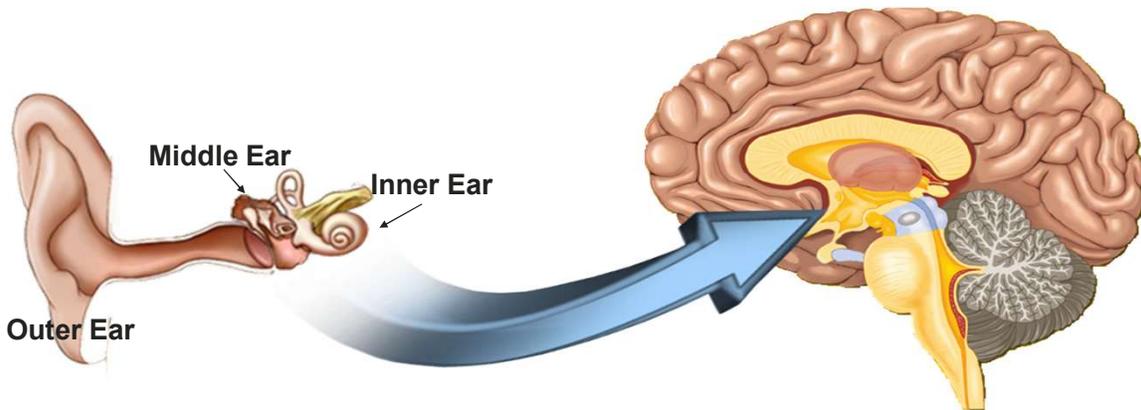
# BREAKING THE CYCLE



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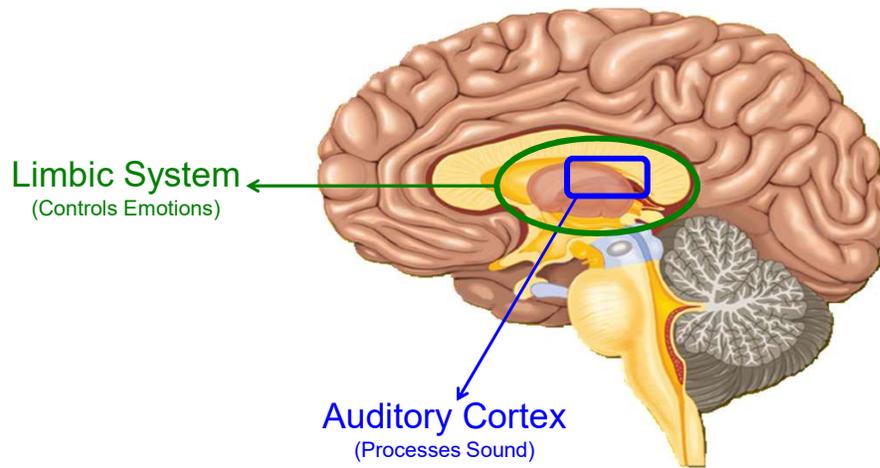
# THE AUDITORY SYSTEM AND PATHWAY...



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## THE AUDITORY SYSTEM AND PATHWAY...

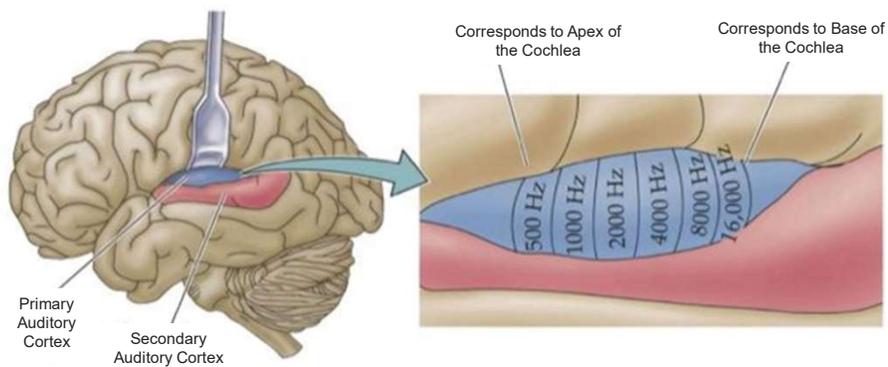


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## MUSIC AND THE BRAIN

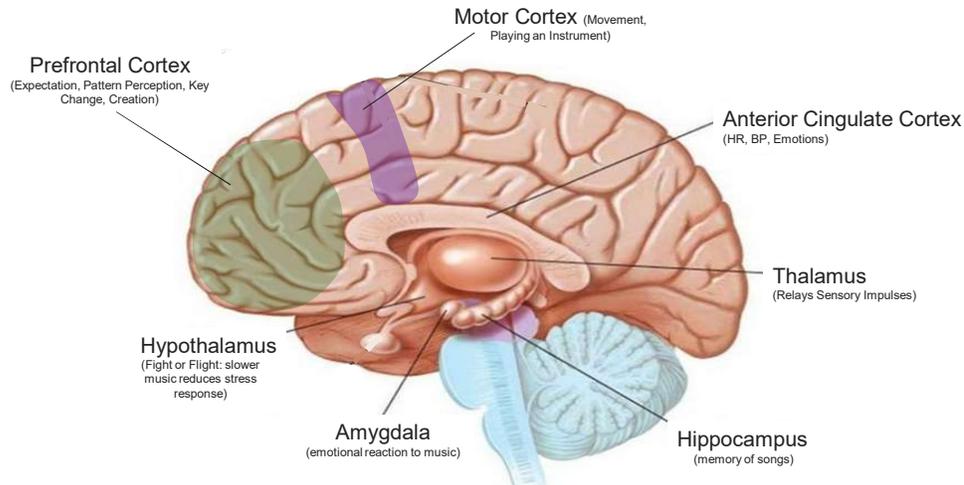
### AUDITORY CORTEX



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## MUSIC AND THE BRAIN



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## MUSIC FOR STRESS MANAGEMENT

- Music is **universal!**
- We all have a **sensitivity to music** even without training!
- As humans we live in an **ocean of vibrations!**
- “Music is **organized sound**” (pebble dropped in water vs. slapping your hand against water).
- “**Music** Listening, performance, and composition **engage nearly every area of the brain** that we have so far identified, and involve nearly every neural subsystem” (Levitin 2006)



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## USING MUSIC FOR SOUND THERAPY:

- Music can affect physiological responses:

- heart rate
- blood pressure
- respiration rate
- muscle tension
- skin temperature
- skin conductance
- tears
- chills
- release of hormones



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## APPLICATIONS OF MUSIC IN THERAPEUTIC CONTEXTS

- Focus attention and arousal
- Relaxation/meditation
- Stress reduction
- Pain management
- Sleep facilitation
- Enriched learning environment
- Enhance memory and creativity
- Children with developmental disorders (and ADHD)
- Alcoholic/depression



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## WHAT ABOUT MUSIC FOR TINNITUS?



Music offers greater benefit compared to noise generators.

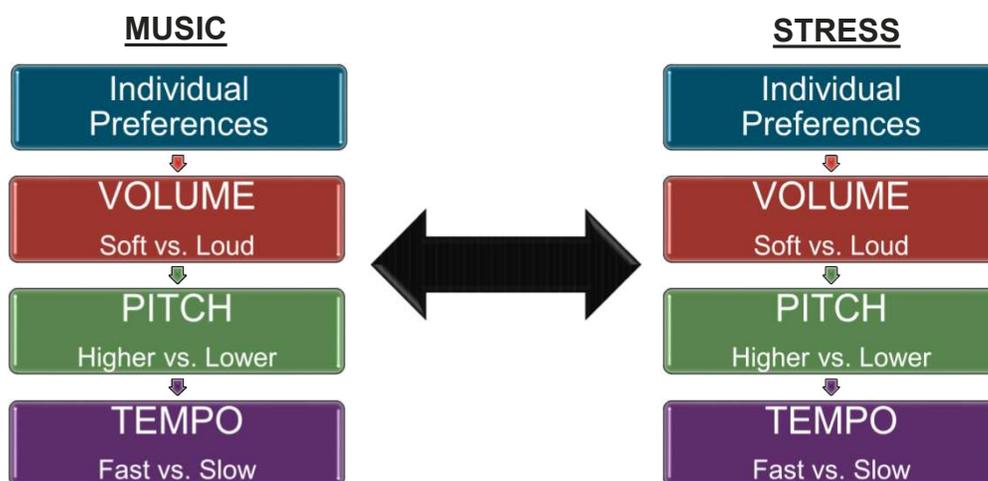
- Kochkin, Tyler, and Brown (2011) concluded that amongst various treatment methods, the two that revealed substantial tinnitus amelioration were hearing aids (34%) and music (30%).



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## MUSICAL ELEMENTS FOR STRESS REDUCTION



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## IS TRADITIONAL MUSIC THE ANSWER?

- Active listening
  - Tendency to arouse
- Passive listening preferable
  - Capitalize on brains natural ability to habituate
- Previously recorded music may:
  - Evoke memories
  - Create unwanted distraction

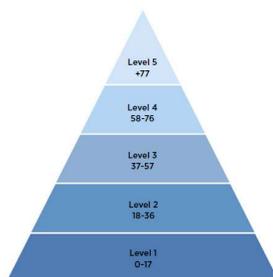


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## TINNITUS TREATMENT

- Combination Devices
  - Provide sound stimulation
  - Hearing amplification as needed



Tinnitus Pyramid  
Negative impact on quality of life



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## INTRODUCING... ZEN



- Introduced in 2008 (MIND)
- Available in **all current Widex products** (levels & styles)\*
- **Clinically proven** tool for tinnitus management
- Continuous “chime-like” musical tones
- **Passive** listening
- **FRACTAL TONES** = **Patented** by Widex
- Based upon:
  - Musical characteristics optimized for relaxation
  - **FRACTAL technology to ensure predictability without repetition**



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\* Exception = Micro-CIC

## BENEFITS OF FRACTAL TONES

- Randomized tones based on the relaxing properties of music
- Activate many neural structures
- Promote passive listening
- Facilitate habituation
- Have a calming rather than alerting effect



**BOTH AUDITORY STIMULATION AND STRESS  
MANAGEMENT  
CAN BE ADDRESSED**



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## EVIDENCE TO SUPPORT FRACTALS AS SOUND THERAPY



- Kuk (2008) demonstrated that fractal tones enhanced relaxation.
- Sweetow (2010) determined that fractal music can provide relief for many tinnitus sufferers
- Sekiya (2013) recommended the use of fractal music in combination with amplification, broadband noise, and TRT.



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## HOLISTIC APPROACH



- Amplification
- Sound Therapy
- Counseling – Instructional
- Counseling - Adaptive
- Cognitive Behavioral Therapy
- Relaxation Exercises
- Mindfulness
- Sleep Improvement Strategies
- General Wellness



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## DICHOTIC LISTENING



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## WIDEX ZEN TONES

- Provides a relaxing sound background:
  - Reduce the annoyance of tinnitus
  - Increase ease of relaxation
  - Improve concentration
  - Provide distraction
  - Reduce stress
- Can be used with or without amplification.
- Various adjustments and options available.



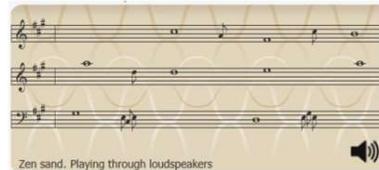
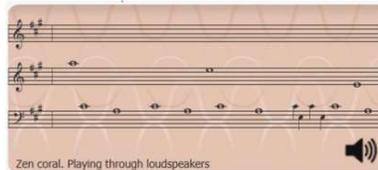
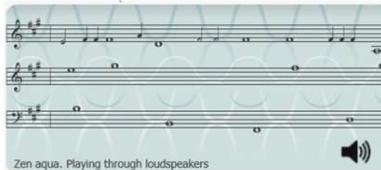
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## WIDEX ZEN TONES

### WHAT DO THEY SOUND LIKE?

- Customized to each patient's audiogram
- Enhance relaxation response
- Provide a contrast with silence



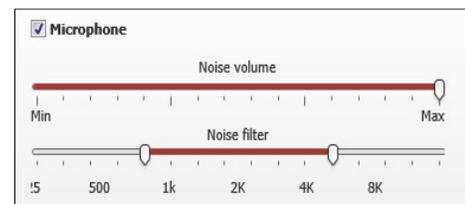
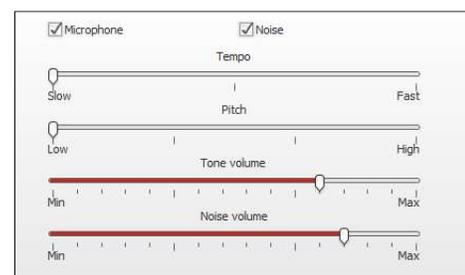
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## WIDEX ZEN TONES

### FLEXIBILITY IN PROGRAMMING

- 2 ZEN Programs - available
  - Mics on/off
  - Noise on/off
- Modification Options
  - Tempo: Slower = Calmer, Faster = Active
  - Pitch: Low = Soothing, High = Alerting
  - Volume: Softer to Louder
- ZEN+ = 3 additional ZEN Programs
  - Timer
  - Frequency Shaped Noise
  - Independent Volume Adjustment of ZEN



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## WIDEX ZEN TONES

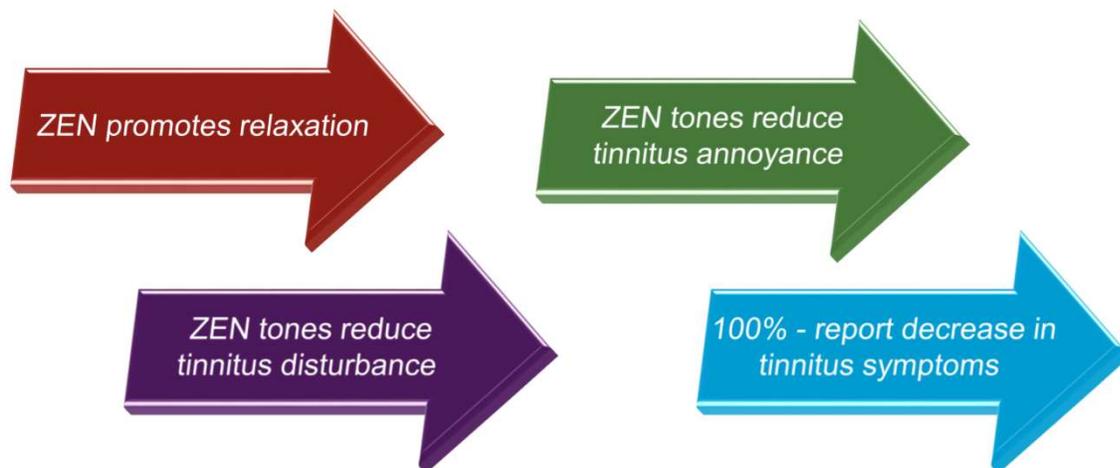
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## WIDEX ZEN TONES...PROVEN PERFORMANCE



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## WIDEX ZEN THERAPY

- Integrated tinnitus treatment program
- Encompassing all components of tinnitus treatment
- Designed to:
  - Minimize the negative impact
  - Assist in habituation



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