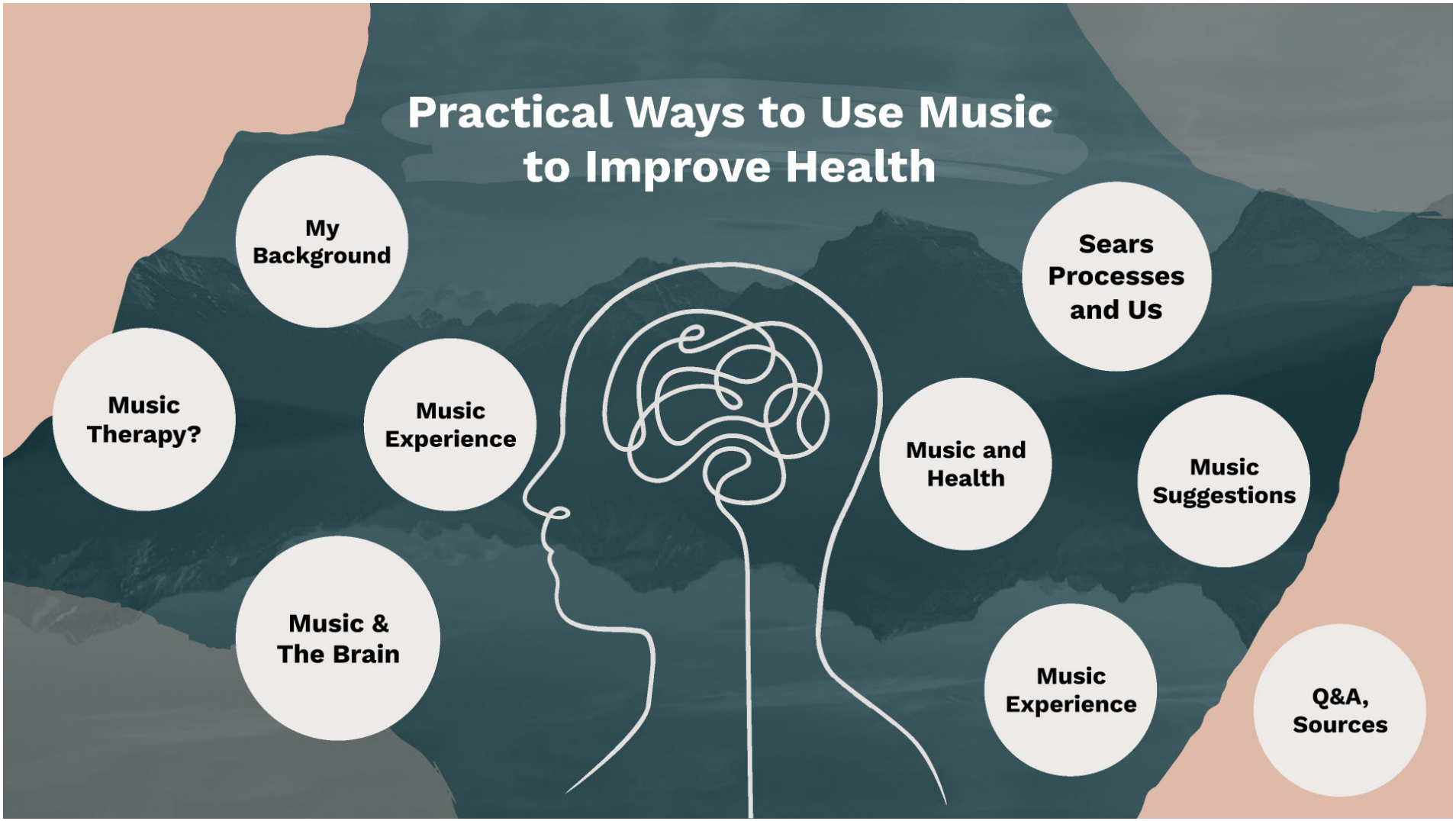
Practical Ways to Use Music to Improve Health
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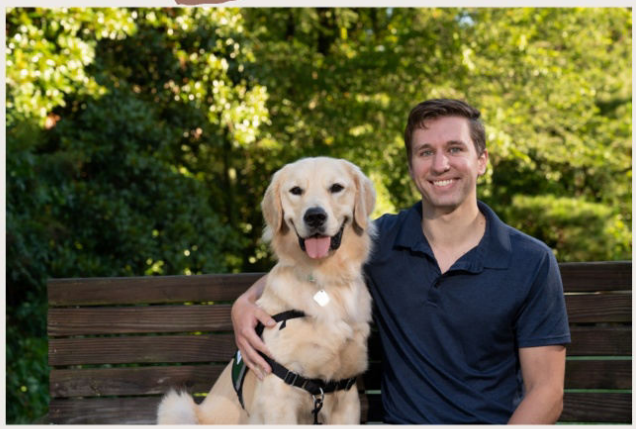
Ryan Woolwine, MT-BC



Eastern Michigan University

Florida State Hospital

Michigan Medicine

Undergraduate Experience

B.S. in Music Therapy

Minor in Psychology

EASTERN MICHIGAN UNIVERSITY

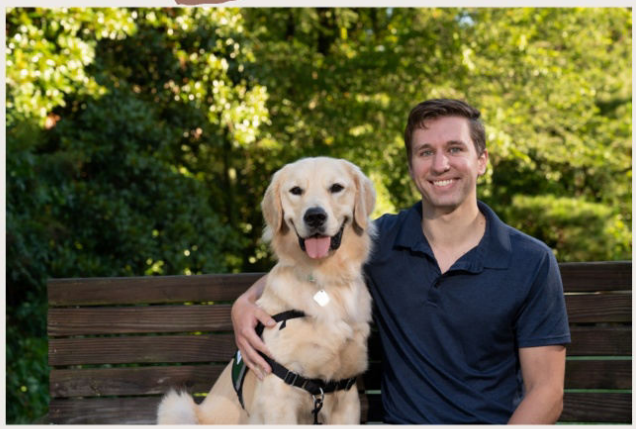
120+ Credits
1200 Clinical Hours
6 Month Internship (900 hrs)

Brehm Fellowship

Behavioral Approach
Music Improvisation
Voice, Piano, Percussion

Classical Guitar
Music Theory
Music Psychology

Ryan Woolwine, MT-BC



Eastern Michigan University

Florida State Hospital

Michigan Medicine

Florida State Hospital

Chattahoochee, FL

6-month Internship

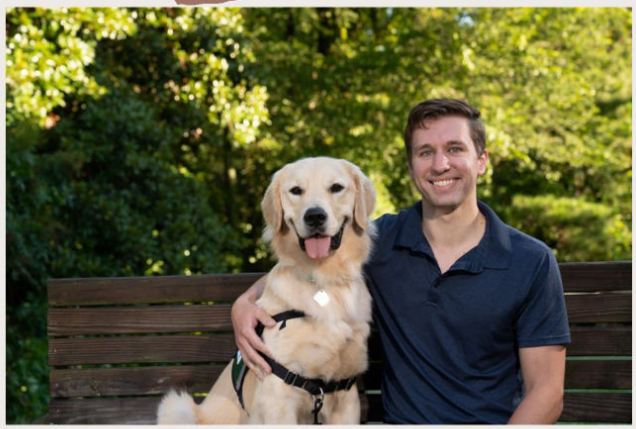
1000-bed Facility

- Civil & Forensic Psychiatry
- Rehabilitation Department
- Facilitation of Groups and 1:1 sessions

Experience

Music Improves quality of life

Ryan Woolwine, MT-BC



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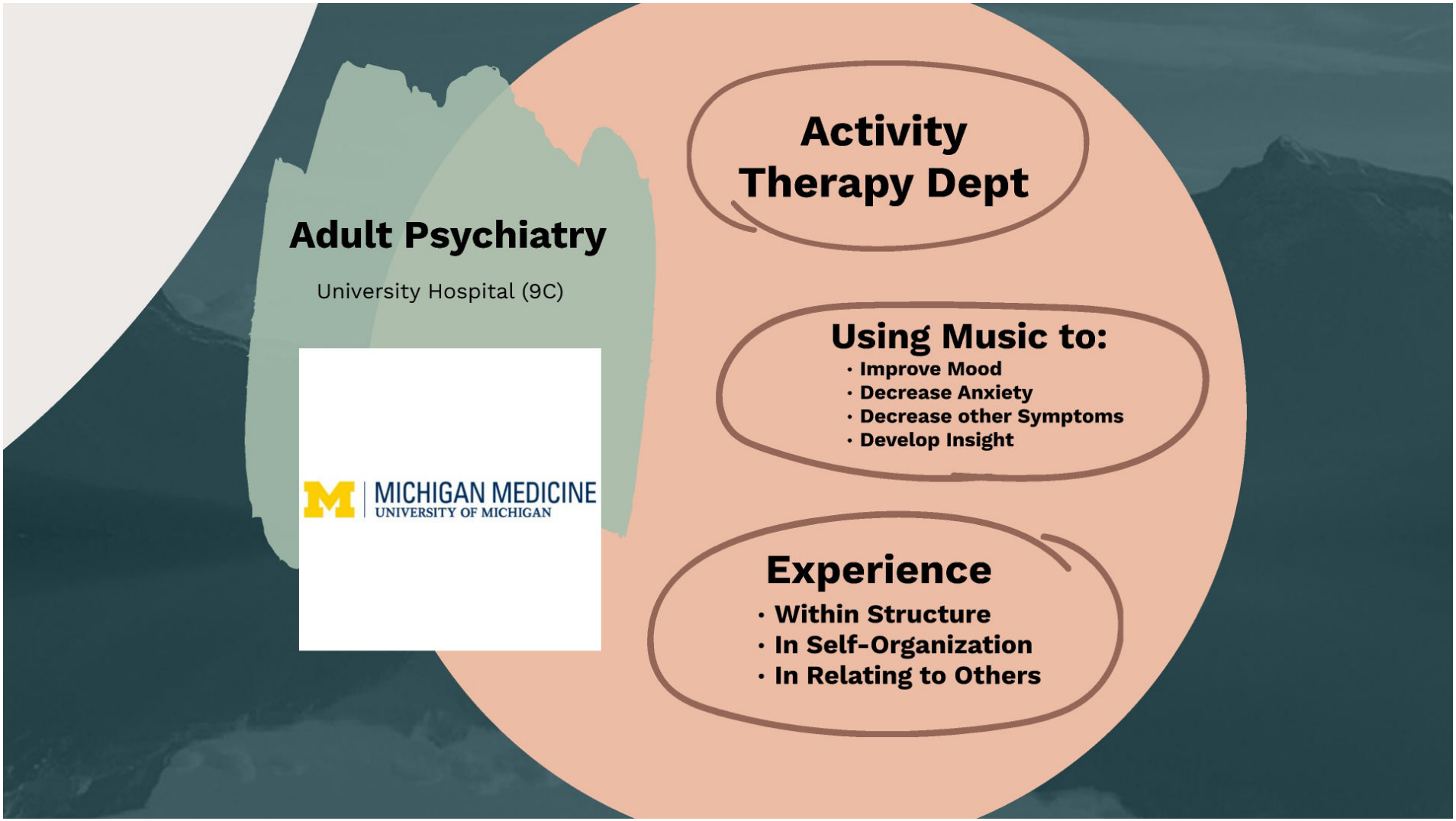
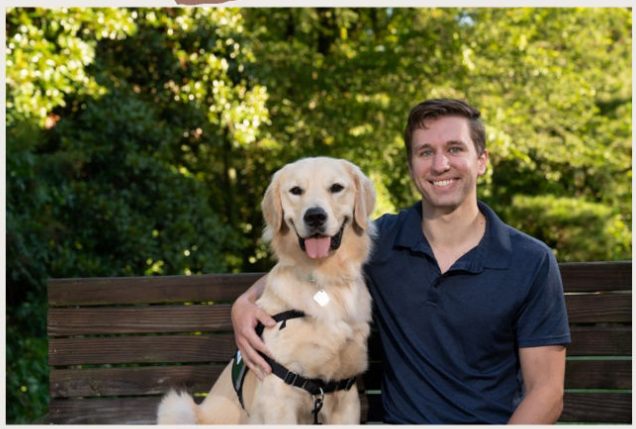
Florida State Hospital

Michigan Medicine


Adult Psychiatry
University Hospital (9C)
MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN
Activity Therapy Dept
Using Music to:
• Improve Mood
• Decrease Anxiety
• Decrease other Symptoms
• Develop Insight
Experience
• Within Structure
• In Self-Organization
• In Relating to Others

Ryan Woolwine, MT-BC



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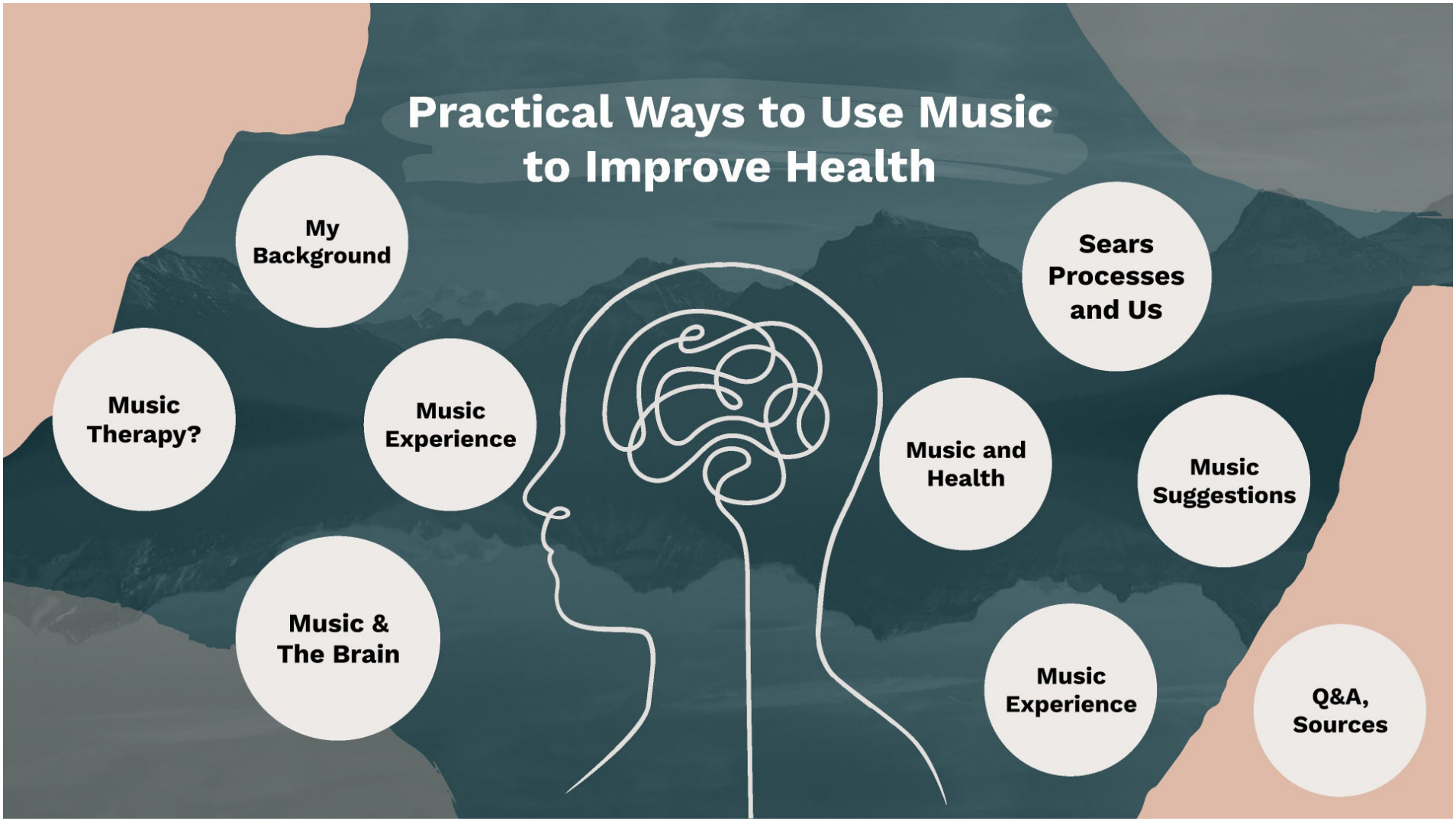
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What is Music Therapy?

"systematic process of intervention wherein the therapist helps the client to promote health, using musical experiences and the relationships that develop through them as dynamic forces of change" (Bruscia, 1998)

cbmt
certification board for music therapists

AMERICAN MUSIC THERAPY ASSOCIATION

Experience within Structure

Experience within Self-Organization

Experience in Relating to Others

Experience Within Structure

- Music Demands time-ordered behavior
- Music permits ability-ordered behavior
- Music evokes affectively-ordered behavior
- Music provokes sensory-elaborated behavior

(Sears, 1996)

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cbmt
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AMERICAN MUSIC THERAPY ASSOCIATION

Experience within Structure

Experience within Self-Organization

Experience in Relating to Others

Experience in Self-Organization

- Music provides for self-expression
- Music provides for socially acceptable reward
- Music provides for enhancement of pride in self

(Sears, 1996)

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AMERICAN MUSIC THERAPY ASSOCIATION

Experience within Structure

Experience within Self-Organization

Experience in Relating to Others

Experience in Relating to Others

- Music provides means by which self-expression is socially acceptable
- Music provides opportunity for individual choice of response
- Music provides opportunities for acceptance of responsibility to self and others
- Music enhances verbal and non-verbal social interaction and communication
- Music provides experience in cooperation and competition in socially acceptable forms
- Music provides entertainment and recreation

(Sears, 1996)

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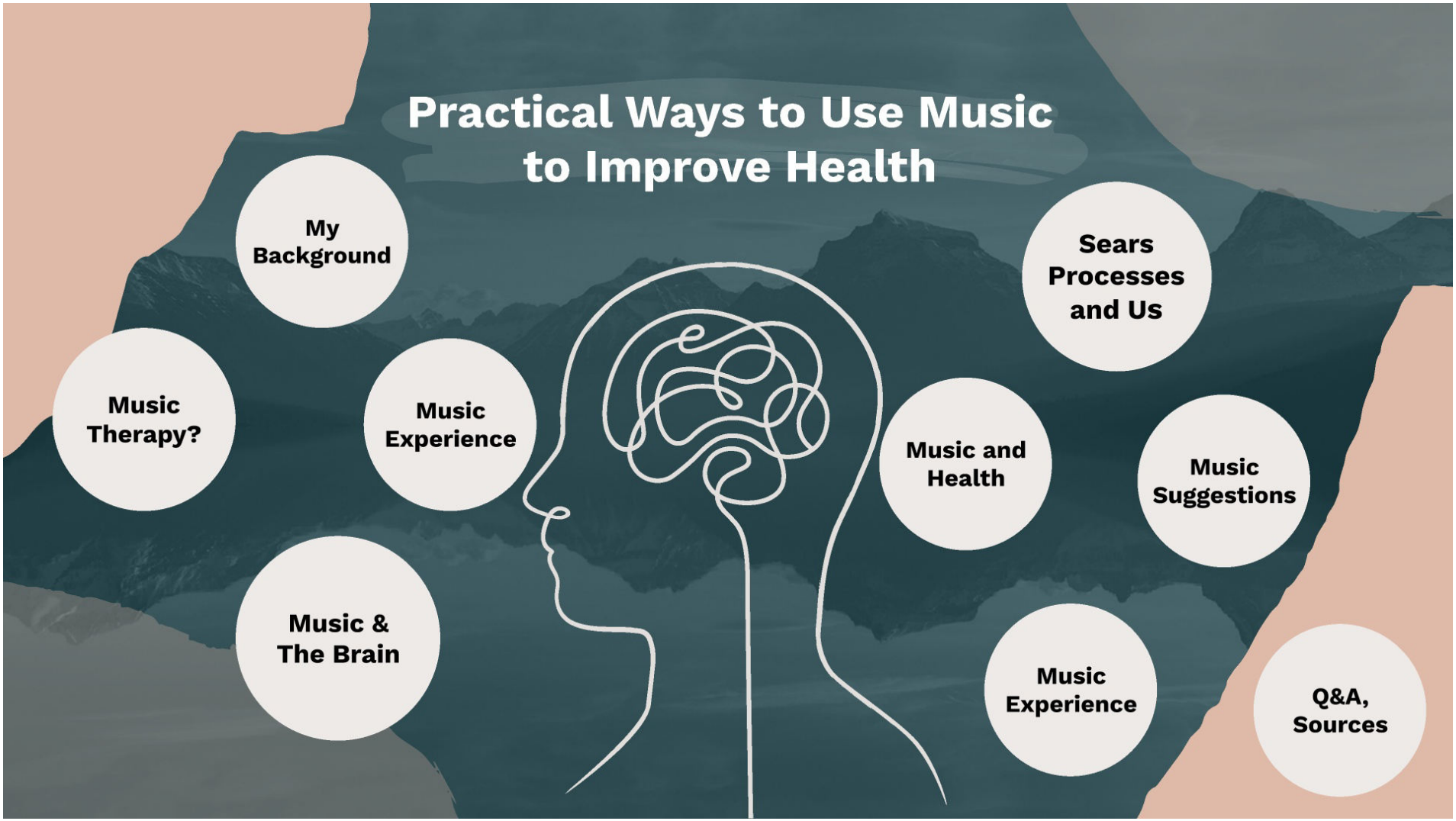
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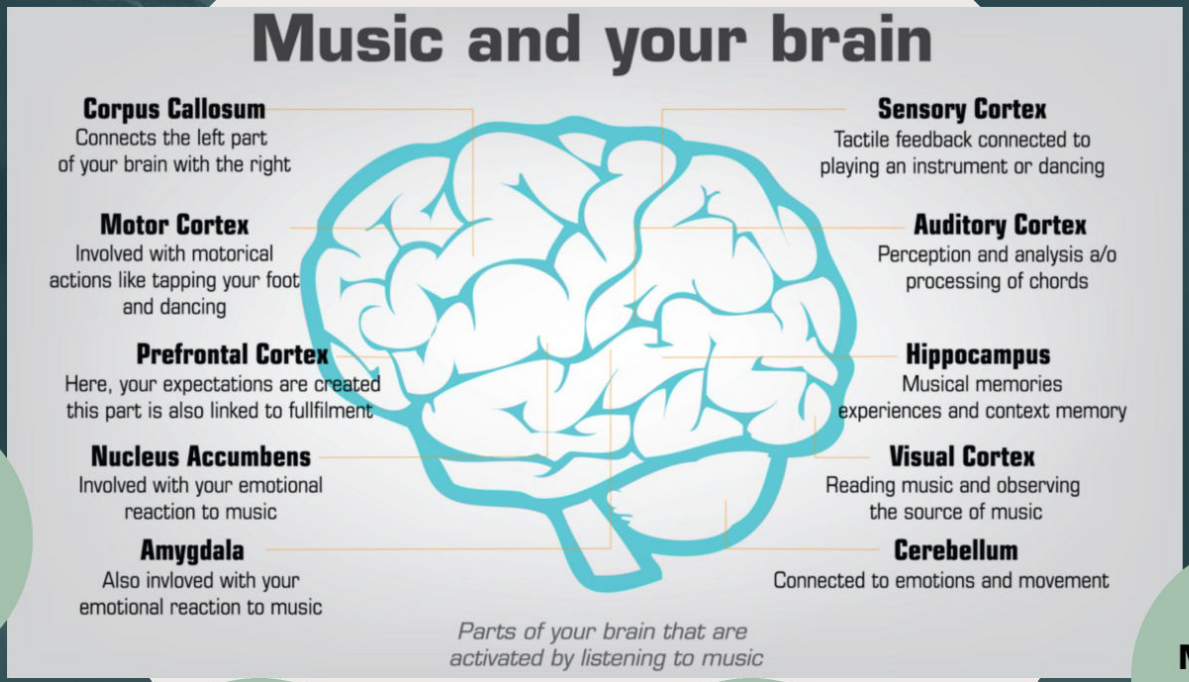
Perceptual Attributes

Movement

Emotions

Memory

Musicians Brain



Perceptual Attributes

the grammar for music

pitch, rhythm, timbre, tempo, meter, contour, loudness, and spatial location...

cerebellum, basal ganglia, motor cortex = Rhythm perception and production (**rhythm, tempo, meter**)

Frontal lobe and thalamic regions = judging tonality (**timbre, loudness**)

Pre-frontal and Frontal Cortex = Pitch Intervals & Tonal Relations, Anticipation (**pitch, contour**)

Auditory Cortex = Melody, Contour (**pitch, contour, spatial location**)

Levitin, Tirovolas (2009)

Perceptual Attributes

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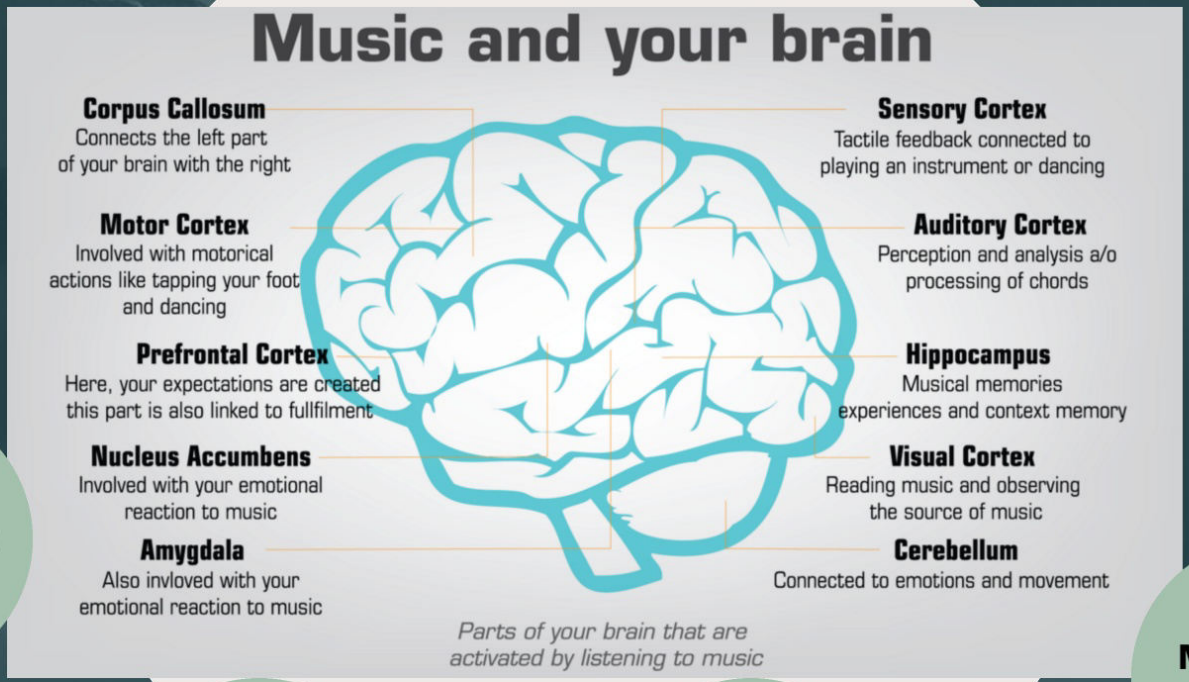

Movement

Music does not exist without movement

Dancing activates Parietal Lobe

"Even when lying perfectly still, listeners in fMRI studies show activation in those regions of the brain that would normally orchestrate motor movement to music, including the cerebellum, basal ganglia, and cortical motor areas—it is as though movement is impossible to suppress." (Levitin, 2009)

"Tapping in synchrony to the pulse of a musical sequence engages the presupplementary motor area, the supplemental motor area, the dorsal premotor cortex, the dorsolateral prefrontal cortex, the inferior parietal lobule, and lobule VI of the cerebellum, as measured by the BOLD response." (Chen et al., 2008)

Perceptual Attributes

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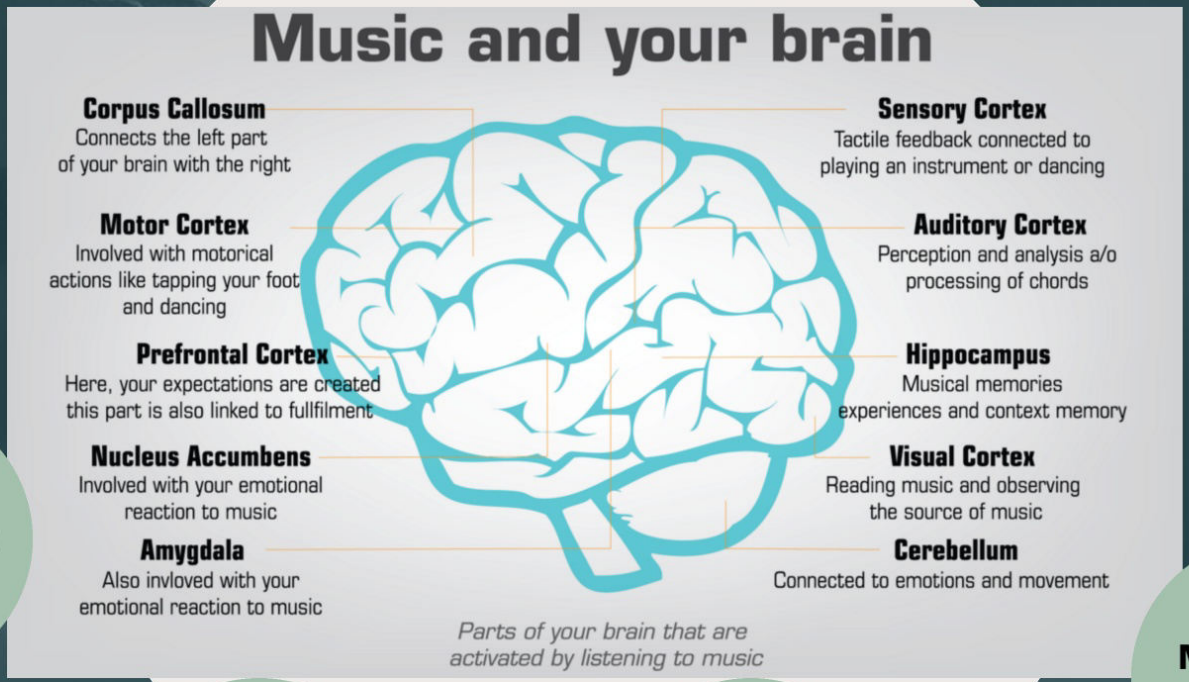

Emotions

Hippocampus responds to pleasant (consonant) music, found in PET studies to be active during "happy classical" music

When experiencing pleasure while listening to music, we may often experience "chills, thrills, shivers"

Amygdala and temporal lobes activated during emotional processing and dissonant music

Prolactin, "consoling hormone," produced by the pituitary gland and released during tears of sorrow (not found in tears of joy or lubrication for the eye) is experienced when we "trick" our brains with sad music. Sad music = consoling and mood regulating

(Levitin, Tirovolas, 2009)

Perceptual Attributes

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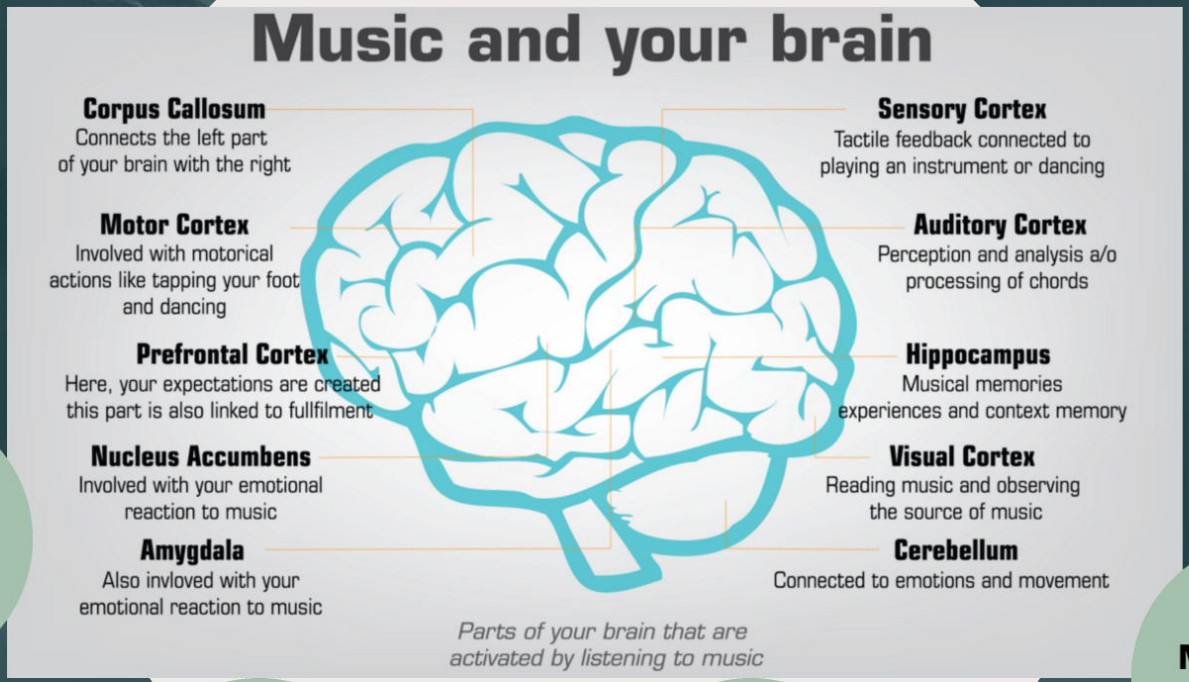

Memory: 3 Mechanisms

Music and dopaminergic pathways:

- Dopamine (reward and motivation) + acetylcholine = learning and memory consolidation of new information
- Enhancing motivation and reward circuits through music may therefore increase the incentive for learning new information

Music and the Autonomic Nervous System

- skin conductance, heart rate, blood pressure, and respiration
- the effect of music on cognitive processing may be mediated through arousal

Default Mode Network

- "DMN is an important brain network to target for music interventions; notably, it is suggested that music may engage and stimulate network connectivity, which may in turn enhance memory function"

(Peck, Girard, Russo, Fiocco, 2016)

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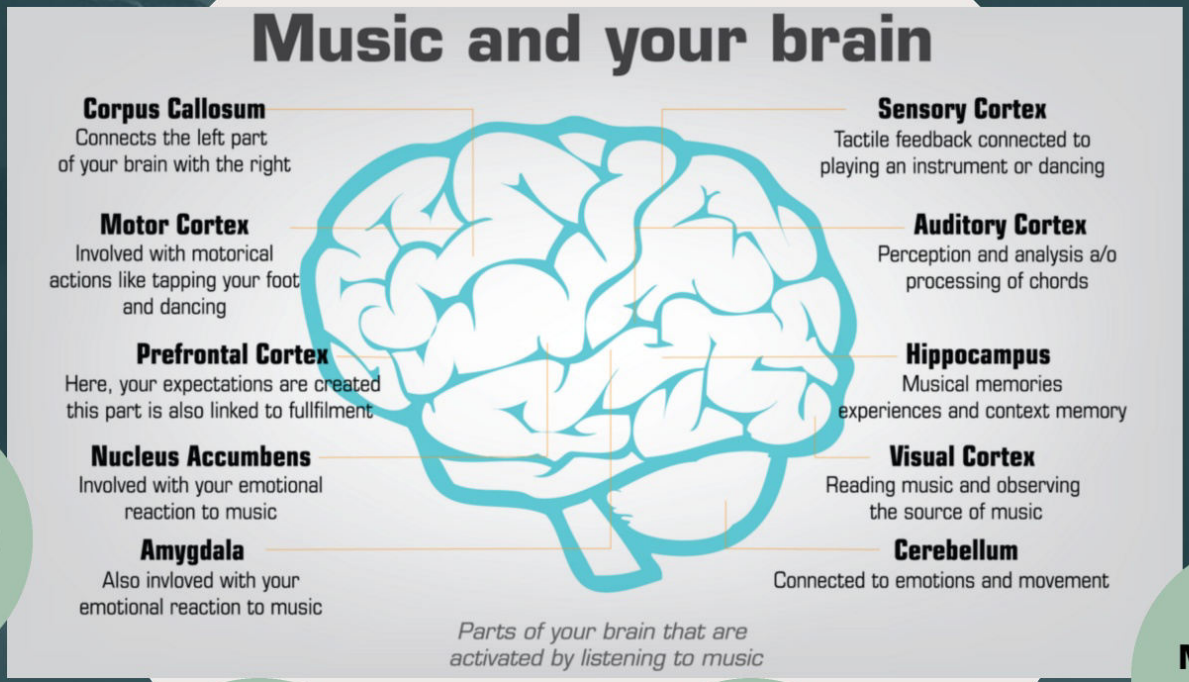
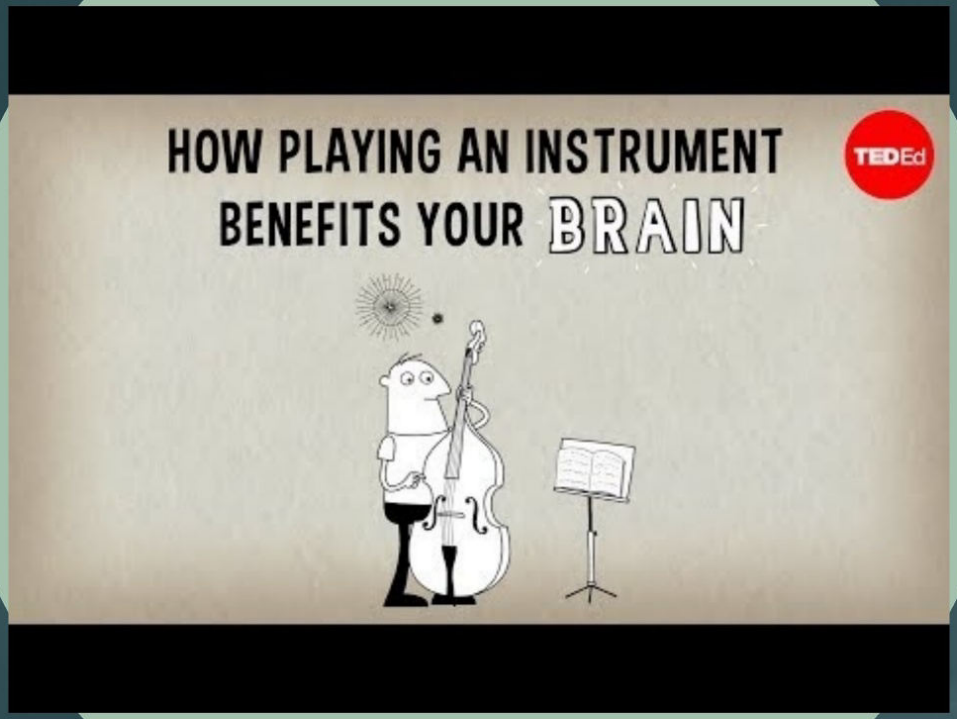
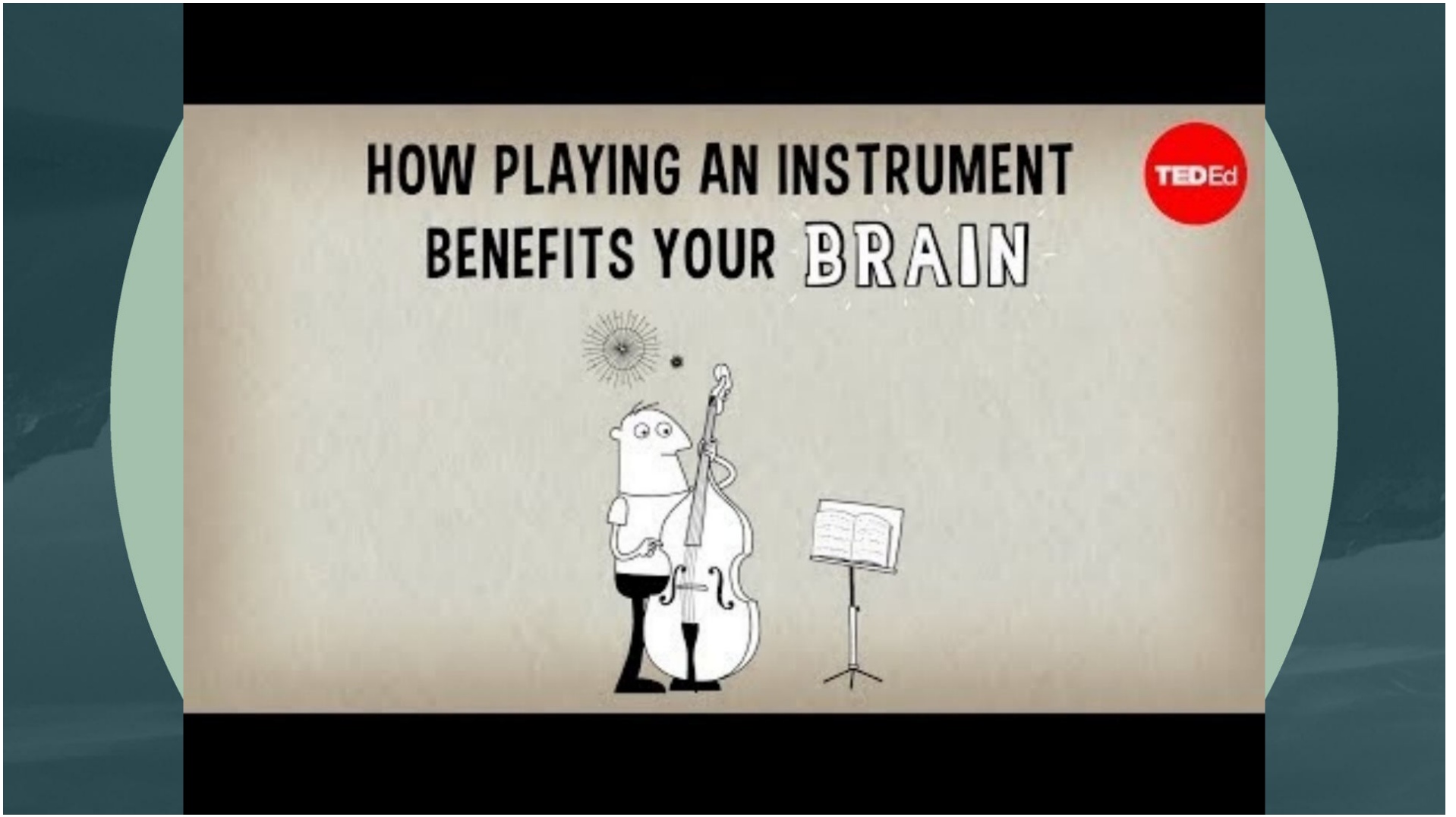



HOW PLAYING AN INSTRUMENT
BENEFITS YOUR BRAIN
TEDEd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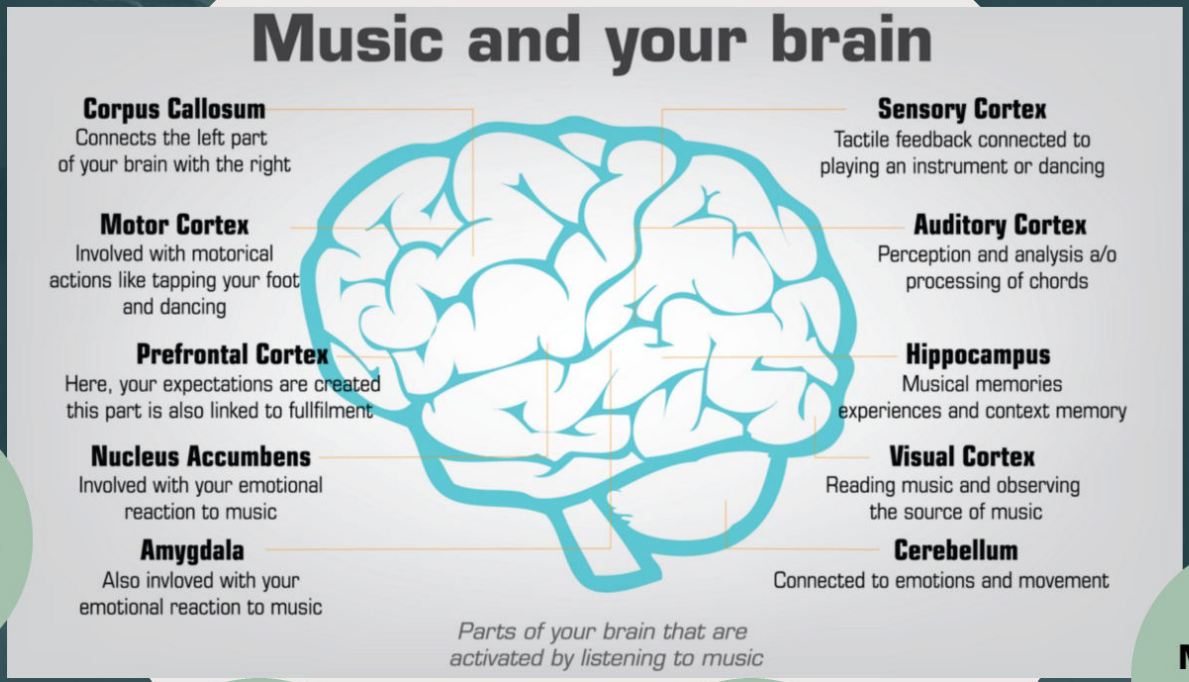

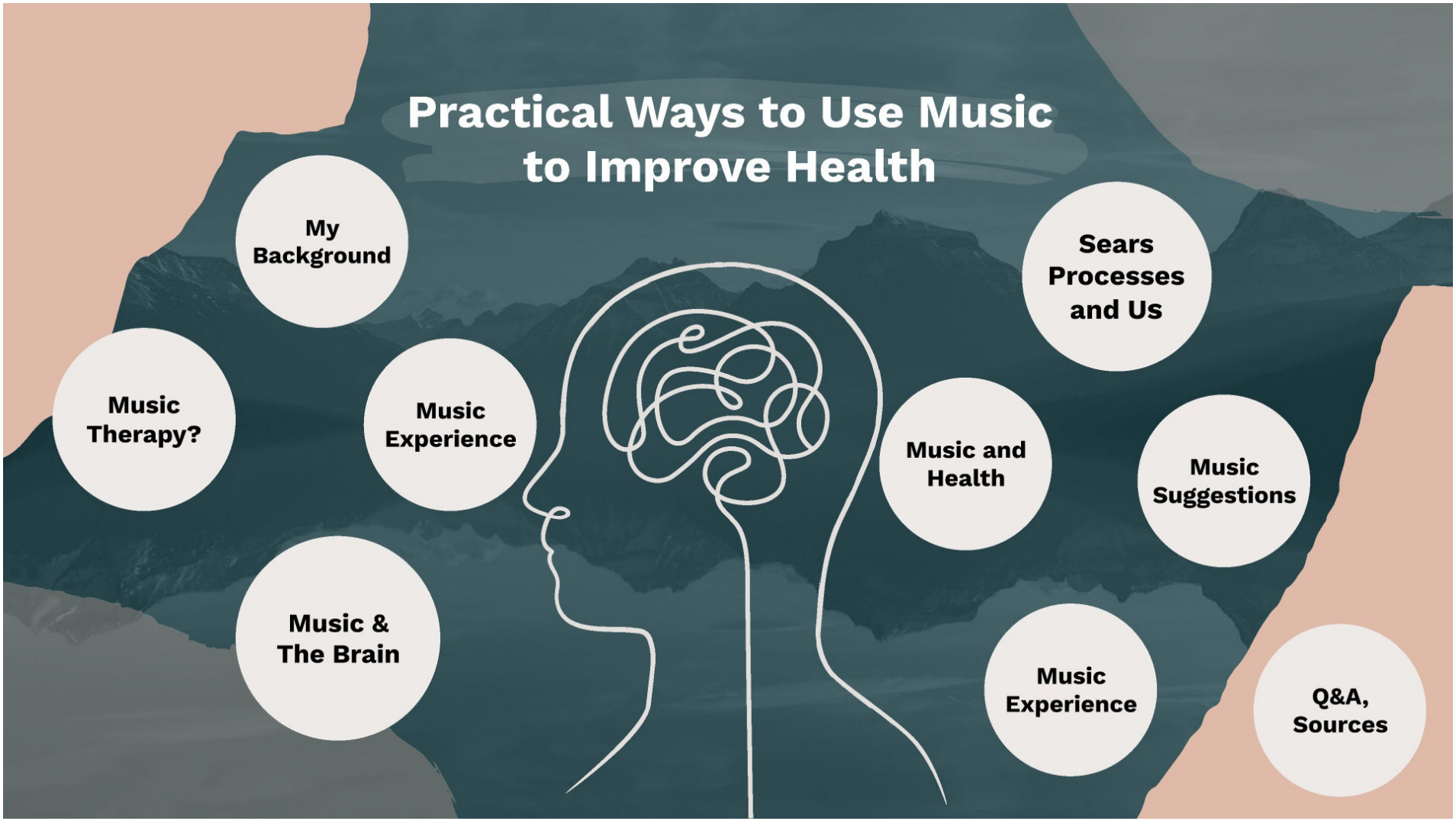
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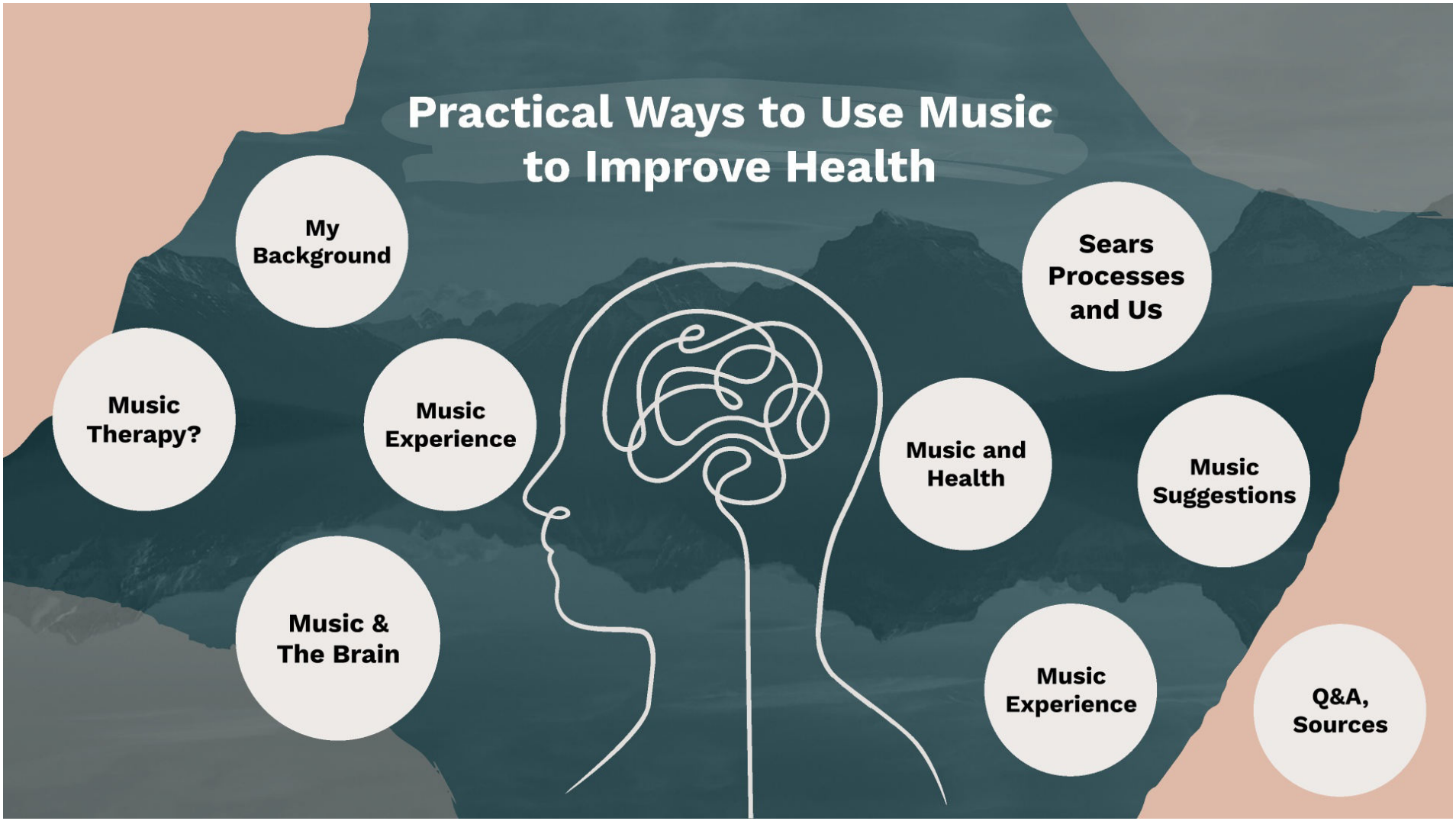
Mindfulness with Music

Experiencing music within structure and self-organization, activating the Default Mode Network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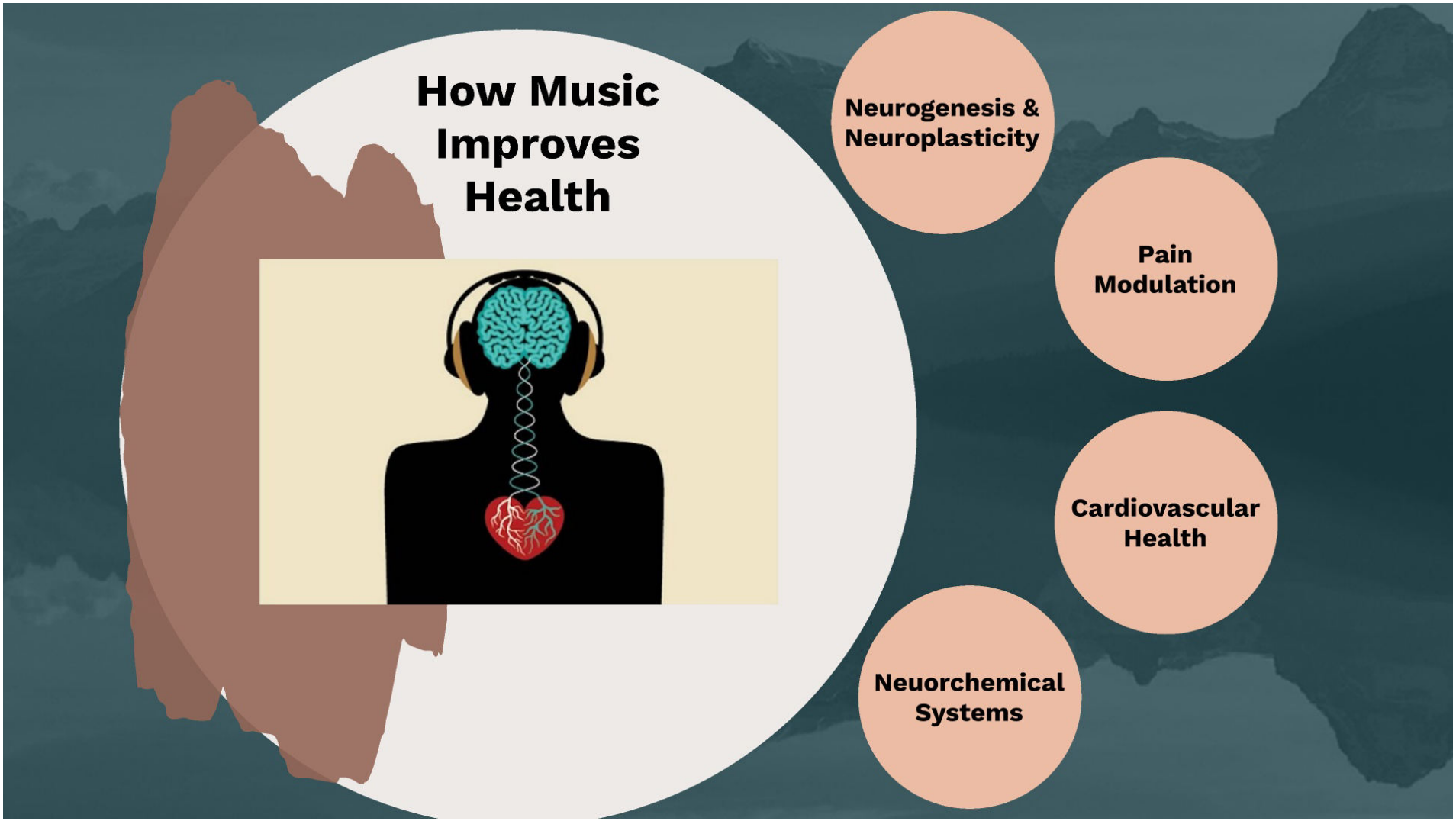

How Music Improves Health
Neurogenesis & Neuroplasticity
Pain Modulation
Cardiovascular Health
Neuorchemical Systems

Neurogenesis & Neuroplasticity

Neurogenesis

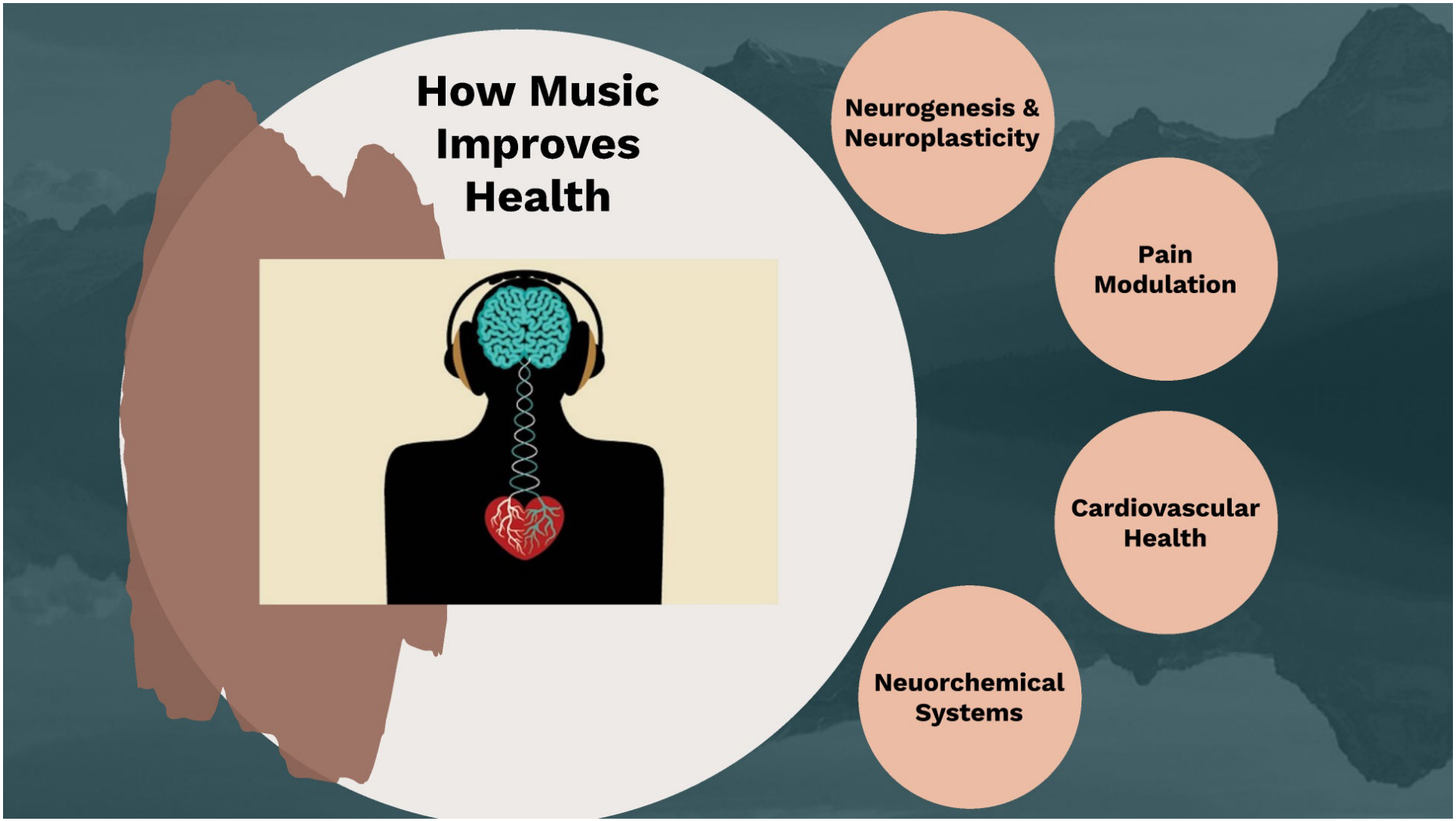
- Music listening and playing in steroid production via pathway from the auditory system to the emotion circuit in the limbic system
- Adjustment of steroid hormones facilitates neurogenesis

(Fukui, Toyoshima, 2008)

Neuroplasticity

- Music Listening stimulates Dopaminergic Regions (NAc, VTA), results in cortical remapping
- Hebbian Principle: Synchrony of Neural Firing
- Rhythm = entrainment
- Entrainment = 2 agents adapt together

(Stegemoller, 2014)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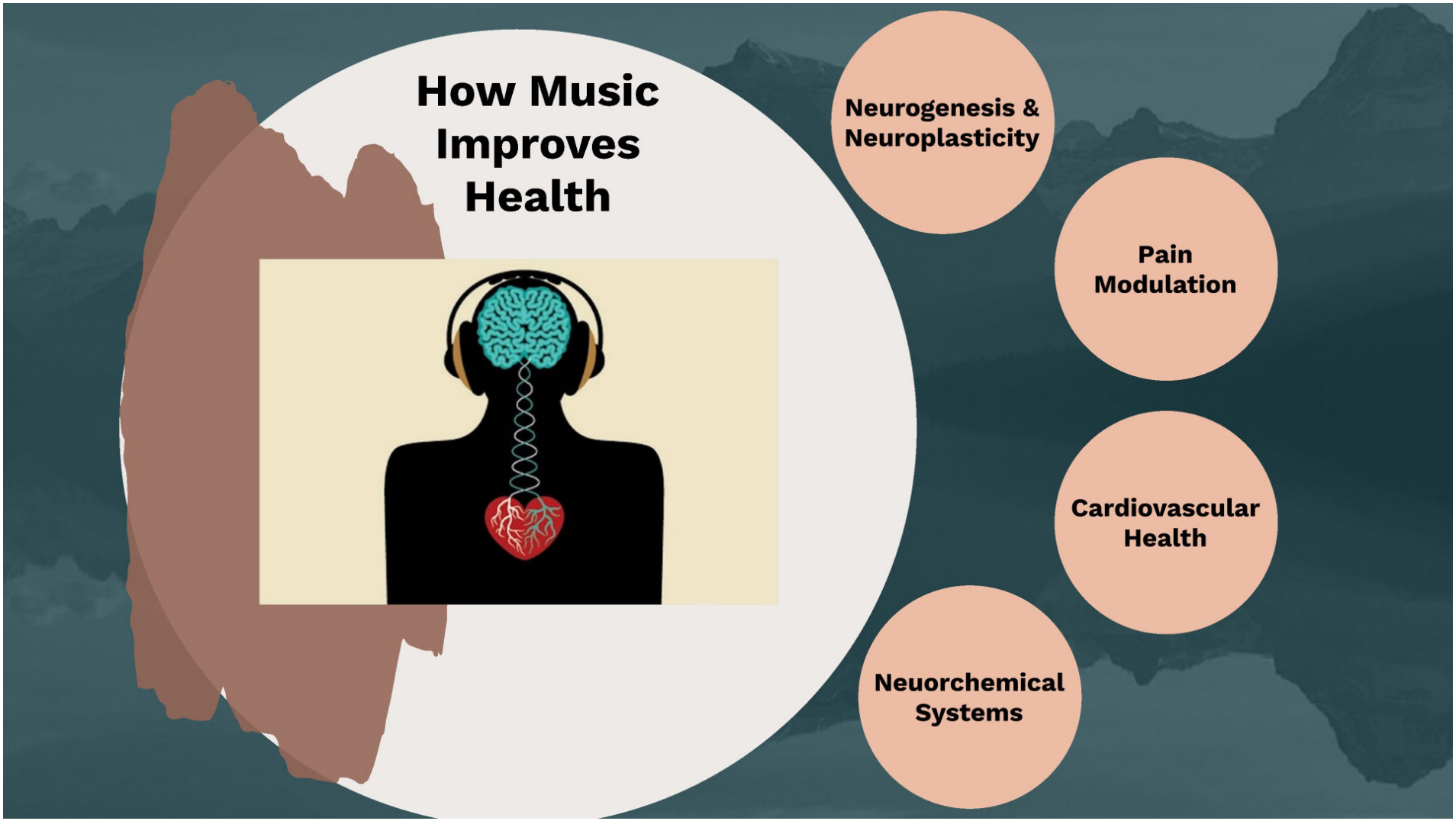
Pain Modulation

- Music listening during pain shows activation in the descending pain modulatory pathway
- Listening to preferred music results in music-induced analgesia through arousal of mood, feelings of pleasantness

(Lu, Thompson, Zhang, Hu, 2019)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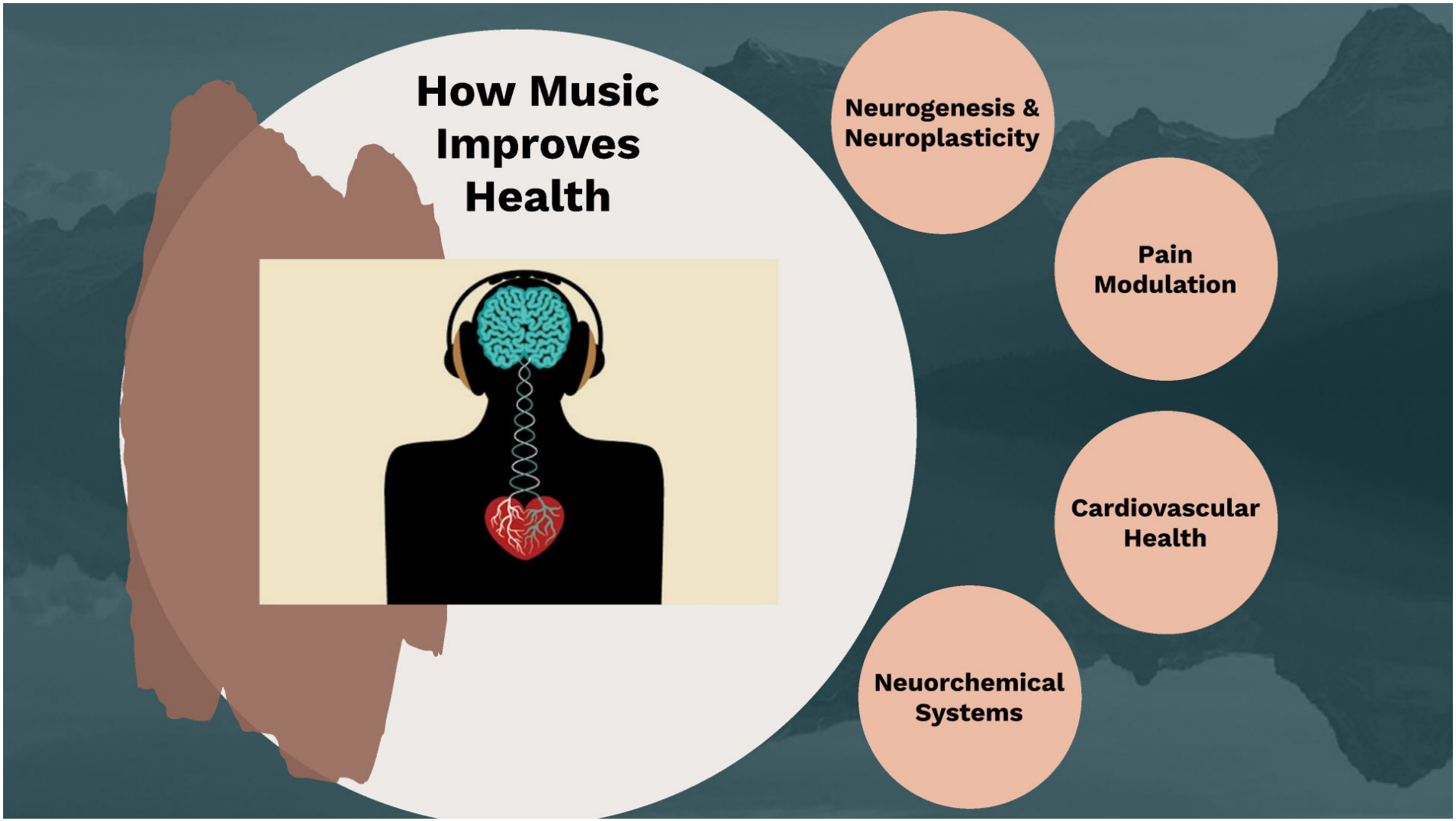
Cardiovascular Health

- The greatest benefit on cardiovascular health is visible with classical music and meditation music
- Crescendos placement and physiological response (vasomotion=BP reduction)
- Respiratory fluctuations mirror musical profile-this is stronger in musicians

(Trappe, 2010)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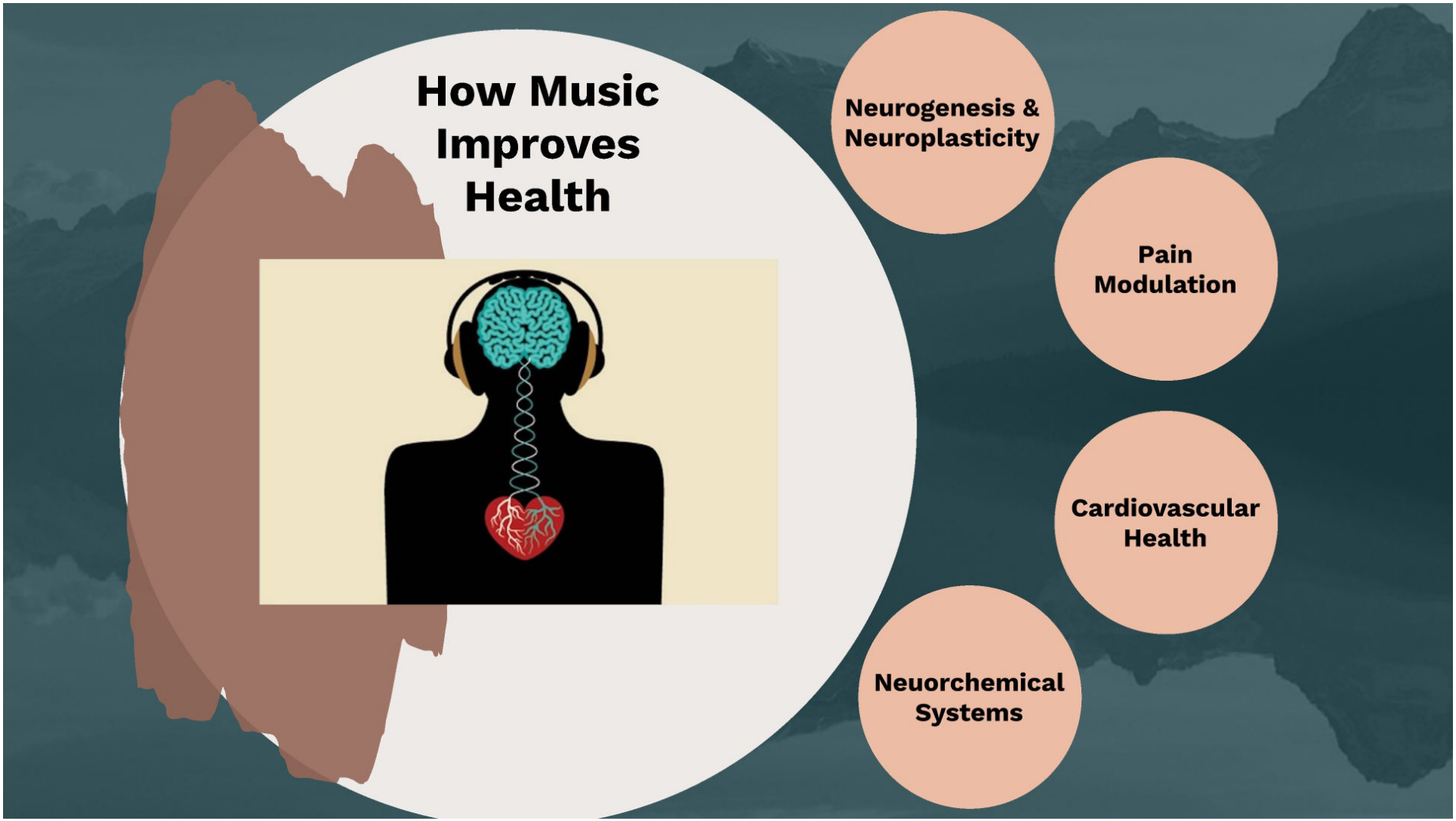
Neurochemical Systems

- Reward, Motivation, Pleasure: NAc release of dopamine. Music Listening shown to decrease need for opiate drugs in post-operative pain
- Stress/Arousal: ß-endorphins and cortisol decrease with relaxing music, increase with stimulating music
- Immunity: Group singing and group drumming shown to counteract immune modulation related to stress and aging
- Social Affiliation: Oxytocin, Rhythm, and social coordination

(Chanda, Levitin, 2013)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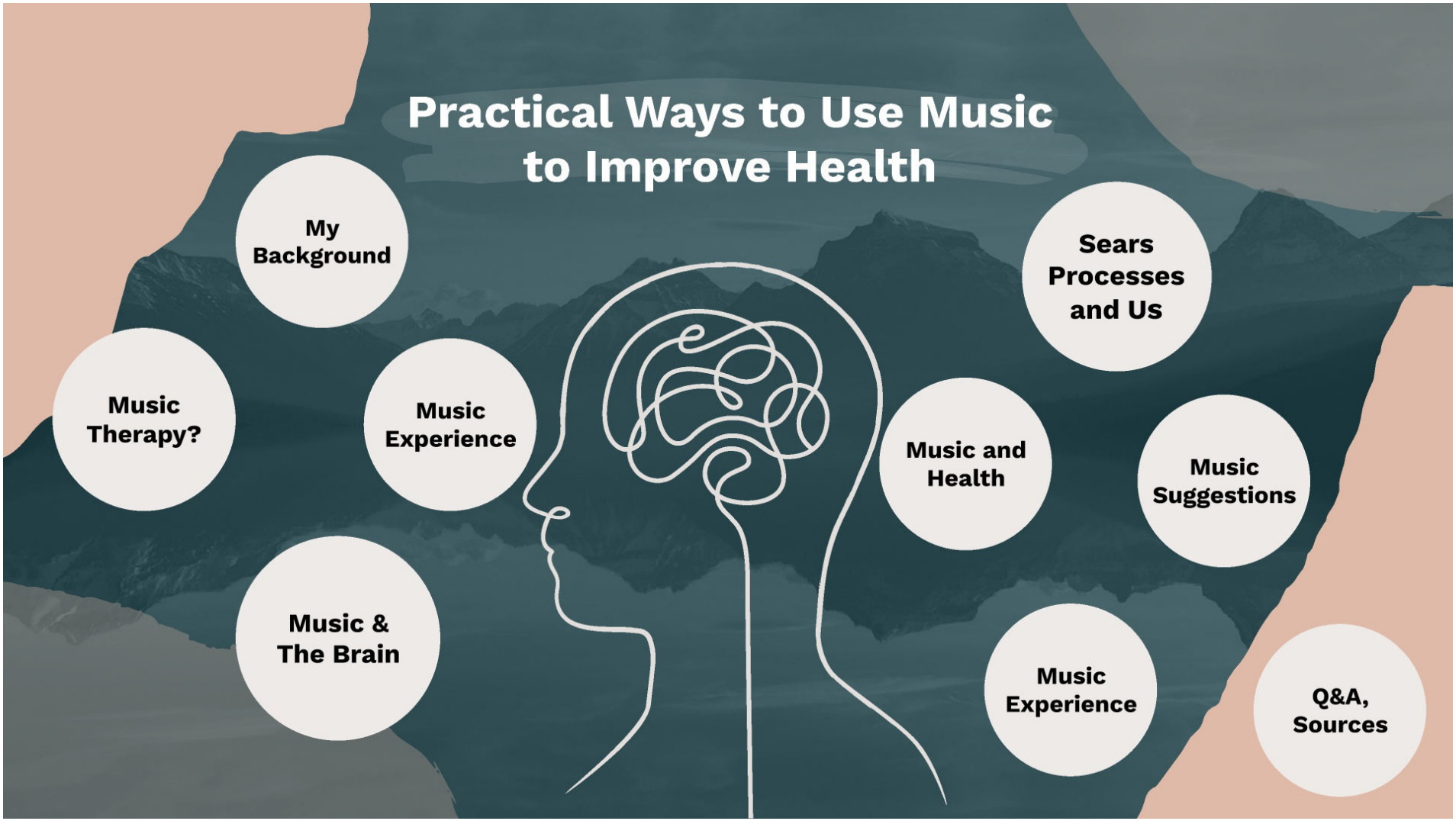
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We can use music to..

- Experience Structure
- Experience Self-Organization
- Relate with Others

Experience Structure

- Music is inherently structured
    - Rhythm, Harmony, Melody, Tempo, Form, etc.
- Scheduled times for music listening/instrument playing
- Music/Playlists to fit your mood or energy..

We can use music to..

- Experience Structure
- Experience Self-Organization
- Relate with Others

Experience Self-Organization

Self-Expression
through singing, playing, listening, or sharing

Provides Reward
through success-oriented experiences

Enhancement in
self-esteem and creativity

We can use music to..

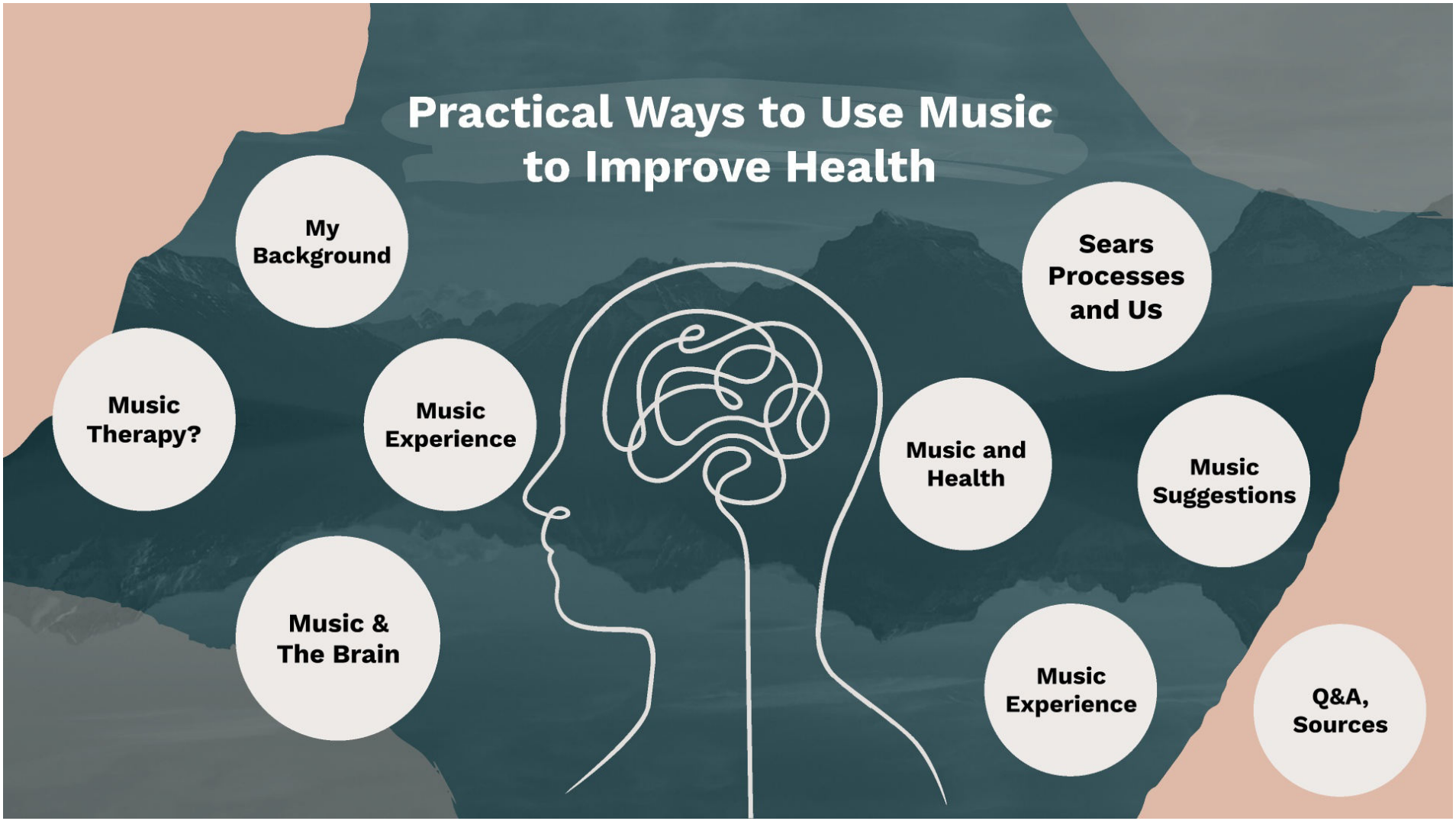
- Experience Structure
- Experience Self-Organization
- Relate with Others

Relating with Others

- Song-sharing
- Song-Discussion
- Singalongs
- Community/Church Choir
- Wedding's & Other Events

We can use music to..

- Experience Structure
- Experience Self-Organization
- Relate with Others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Music Suggestions

George Winston "Season Albums" for mindful music listening, relating the changes of seasons with seasons of life

"Cello Blue," "Wu Wei," and "Rainfall" by David Darling for relaxation

"Motivational Music for the Syncopated Soul" by Cory Wong for Motivation or Workout

Other Suggestions

Other Suggestions

Tips:

- New music
- community/church choir
- pick up an instrument
- share a song with a friend
- identify emotions in music
- listen more intentionally
- create playlists
- GOOD SPEAKERS

Literature:

- "This is Your Brain On Music" by Daniel Levitin
- "Musicophilia" by Oliver Sacks

Podcasts:

- "Cadence Podcast: What Music Tells us About the Mind"

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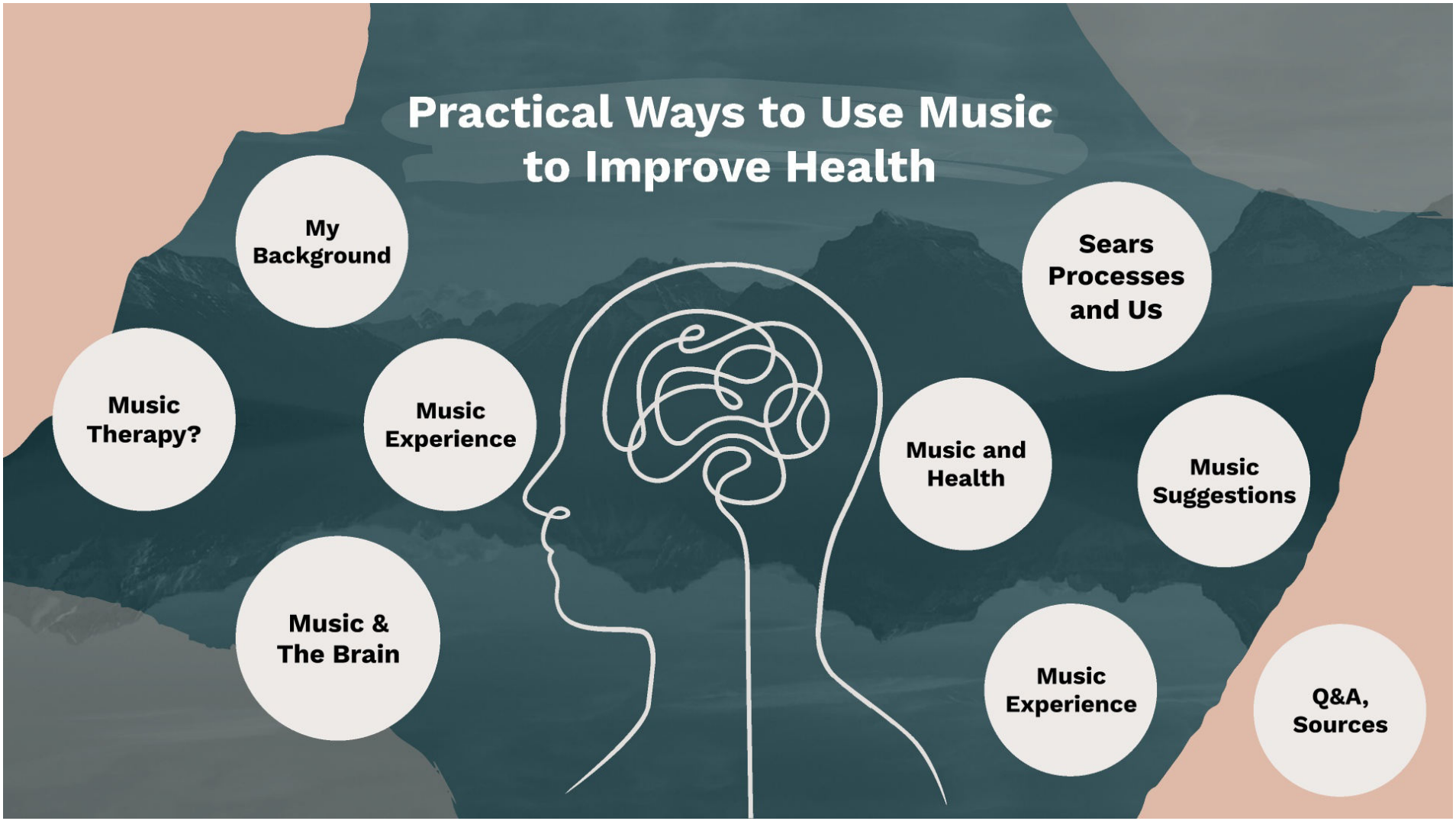
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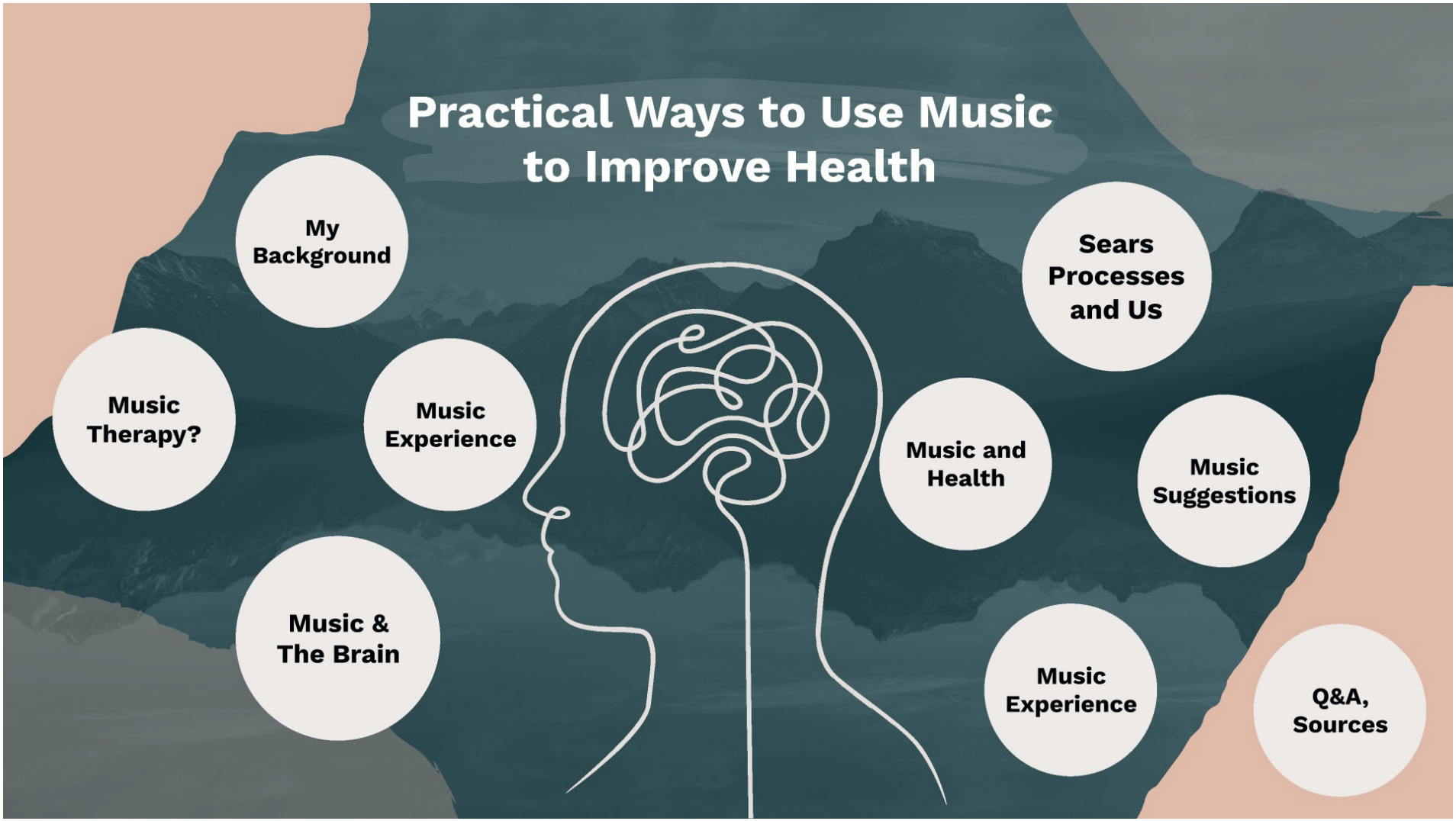
What a Wonderful World
Louis Armstrong
I see trees of green
Red roses too
I see them bloom
For me and you
And I think to myself
What a wonderful world
I see skies of blue
And clouds of white
The bright blessed day
The dark sacred night
And I think to myself
What a wonderful world
The colors of the rainbow
So pretty in the sky
Are also on the faces
Of people going by
I see friends shaking hands
Saying, "How do you do?"
They're really saying
"I love you"
I hear babies cry
I watch them grow
They'll learn much more
Than I'll never know
And I think to myself
What a wonderful world
Yes, I think to myself
What a wonderful world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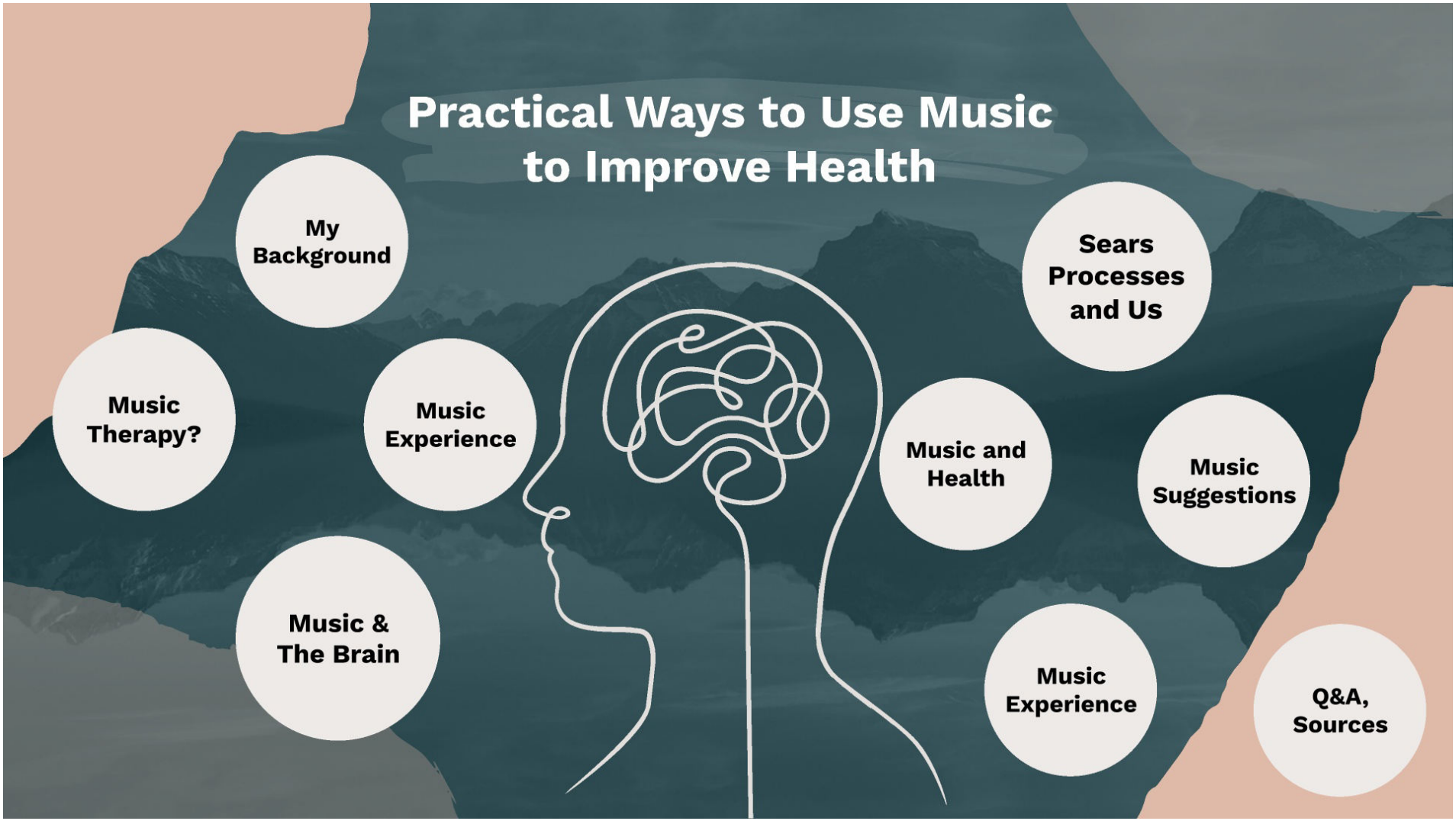
Thank You
Very Much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