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MOMENTUM

**2023 ANNUAL
MEETING & EXPO**

MARCH 7-8, 2023

Renaissance Schaumburg
Convention Center - Schaumburg, IL

Music, Movement, and Mindfulness for Dementia

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1

The power of the mind



The brain is the control center for our entire body and functions through electrical impulses



Neuro-transmission is a complex process which continues to be a mystery to medical science.



This seminar looks at the integration of music, movement, and mindfulness specifically to benefit persons with dementia

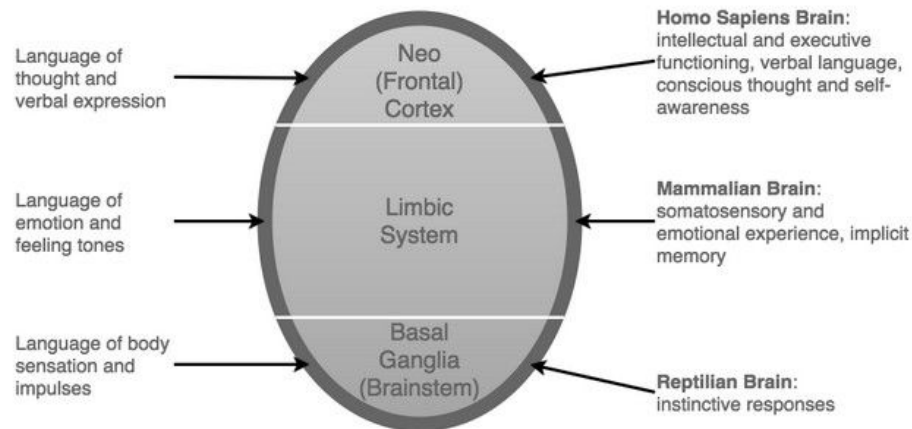
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2

The three brain levels

The Triune Brain One mind, three brains

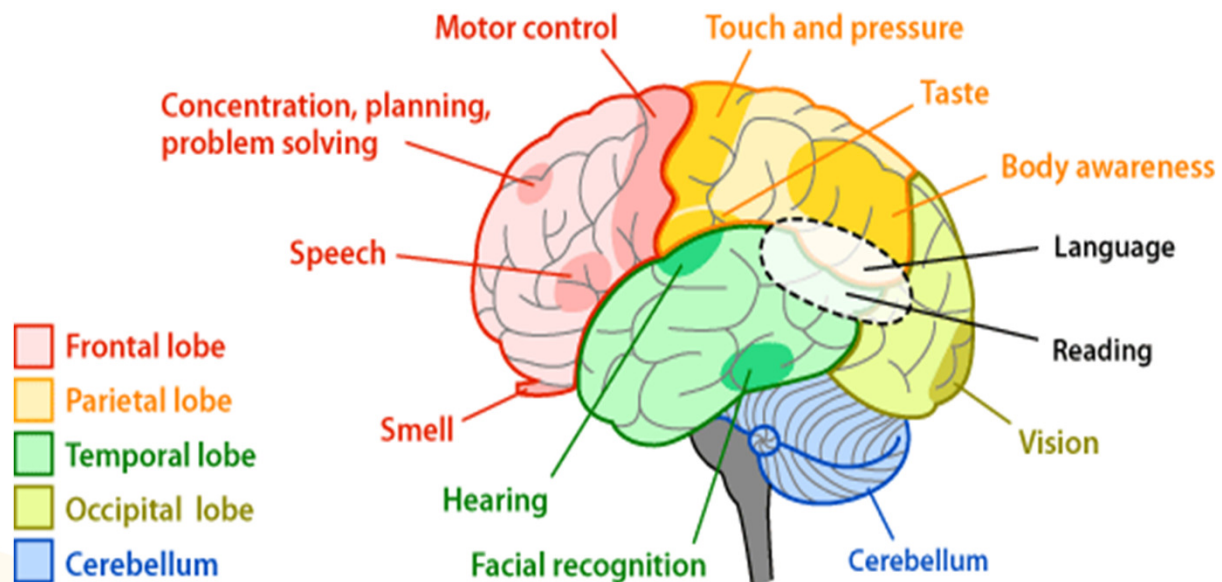


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3

Another view of the brain



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4

The functions of the two brain hemispheres

LEFT BRAIN

- Controls the right side
- Literal
- Linear
- Analytical
- Evaluative
- Objective
- Verbal
- Speech and language

RIGHT BRAIN

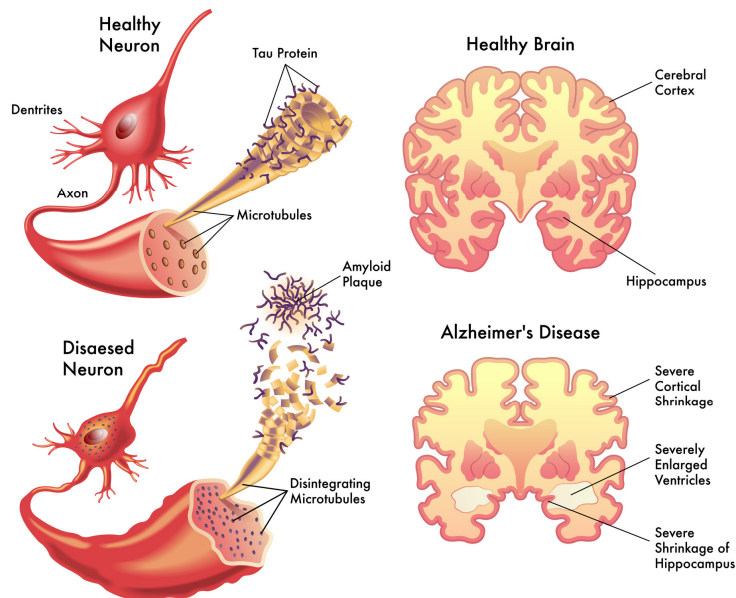
- Controls the left side
- Creative
- Imaginative
- Visual
- Artistic
- Subjective
- Non-verbal
- Spiritual and holistic

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Healthy vs. Alzheimer's brain



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Neuroplasticity and Neurogenesis

Neurogenesis is process of creating new brain cells which was long thought impossible but has since been found to be possible in some regions of the brain, particularly the hippocampus.

Neuroplasticity is the process of the brain's capacity to rewire and form new connections when damage has occurred and building strength of the signals being transmitted.

The process by which these two concepts work together is referred to as **BDNF**, or brain-derived neurotrophic factor which sets in motion development of any new cells and enhancing connections.

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Music and moves

Music Matters...

- How the brain and body process music remains a mystery however music appears to be processed on many levels simultaneously
- We process music with almost every part of our brain
- Music with personal or historical significance has a strong response stimulus
- Information from the Institute for Music and Neurological Function indicates improved movement, memory, and speech occurred in conjunction with the use of music
- Music triggers response in the limbic, or mid-brain, system of the brain, most specifically the hippocampus among memories and associations

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Theoretical framework

Individuals process music with almost every part of their brain

Music stimulates the limbic system, specifically the hippocampus

Active listening activates the part of the brain that controls movement and balance

Music connects past and present

Music crosses culture and has a healing quality

Music memory is preserved more than other experiences

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9

9

Music and Dementia

Benefits to music use are cumulative

Reductions in agitation and behavior often occur

Music contributes to more restful and restorative sleep

Healing antibodies are produced that improve immunity

Reduction in anxiety is common

Dopamine produced reduces depression

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10

10

Music matters according to NIH research

- Shifts mood and state of mind, contributing to neuroplasticity
- Leads to creative play and engagement
- Humming can calm the body
- Helps arouse and awaken memories
- Improves communication

A study in an AL community in NY observed cognitive improvement in residents who listened to music, using headphones, 3 hours per day

Music selection



Offer variety of styles
and options



Instrumental benefits



Time era music
and themes

Music styles

Age Range	Recommended Genres
80's-90's	Big Band, Marches, Broadway Showtunes, Swing, Jazz, Sinatra, Rat Pack, Patriotic, 40's hits, classics, ragtime
70's -80's	Pre-boomers, so above work well along with some 50's, soul sounds
60's- early 70's (Boomers)	50's, 60's, 70's. Disco, Beach hits, Elvis, Rock and Roll, Beatles, Michael Jackson, "jock jams"
Ageless	Island rhythms, steel drums, Latin, Country, Tribal, Celtic, relaxation sounds
Dementia	Instrumental or sing-along with generational identity

One size does not fit all

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Recognizing rhythm and beats

Rhythm develops in
infancy and childhood

Some individuals have a
strong internal sense of
rhythm

Recognizing musical
rhythm is important

Counting BPM is like
taking a heartrate

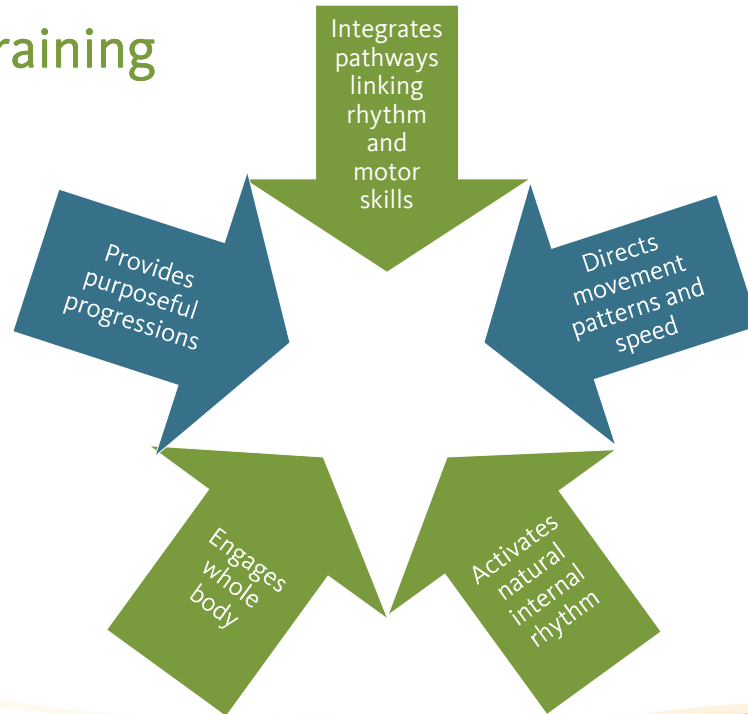
Some music will list the
"beats per minute"

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14

Cadence training



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15

Incorporating music into programming

Music can be utilized in both purposeful and indirect ways

Played in the background, music can provide distraction and relaxation

Purposeful music inclusion can restore, maintain, and improve all aspects of well-being

Music can impact someone emotionally, physically, physiologically, and spiritually

It can add rhythm and fun to a group experience

Music links the past to present and can provide a healing quality

Music is universal and helps to preserve short-term experiences

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Study: Music's role in reducing chronic stress

This study took place during pandemic by University of Vienna evaluating the use of a music app for individual use

Participants received daily prompts to listen to personalized music and self-reported their perceived stress levels

Music was associated with lower momentary stress and improved moods especially for those with chronic stress

Music increased their energetic arousal and self-reported happiness

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17

Singing rehab concepts

- Incorporating singing into group rehab supports communication and speech in those with Aphasia
- Similar improvements were also seen in persons with Dementia

Study from University of Helsinki, Finland

- 4 month singing intervention taught by trained music therapist and a trained choir director
- Music helped patients retrieve memories, improve communication, verbal responses, and was seen to offer some additional benefits over traditional treatment options

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18

The “power of sound”

According to an article in Today's Geriatric Medicine, Jan. 2023, meaningful and intentional music therapy has been deemed beneficial for persons who:

- Are in post-stroke rehabilitation
- Live with dementia and experience depression
- Have Parkinson's disease

The article suggests music reduces agitation, anxiety, and depression while promoting connections with family and friends. Additionally, in LTC, music therapy can potentially decrease the use of antipsychotic medications and sedatives

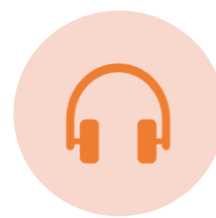
Limitations of music use



USE IN A
MULTIPURPOSE
SPACE



IMPACT OF
ACOUSTICS OR
ENVIRONMENT



PARTICIPANTS
WITH
HEARING
LOSSES

Benefits of exercise on the brain

Increased blood flow

Increased Oxygen

Endorphin Release

New brain cell growth

Boosts protein levels to nourish cells

Reduce stress hormones

Decreases depression

People who exercise 3 times per week or more have the lowest risk of Alzheimer's

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21

Link between exercise and memory

Several Hypotheses

Fewer stress hormones which have negative impact to brain health

Improved blood flow throughout body and to brain

Neurogenesis, or creation of new neurons

Development of a larger Hippocampus

Improved connections among brain cells

Reinforcement and retention of motor skills

Depression impairs frontal lobe function which impacts attention and concentration

Exercise releases endorphins

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Benefits of the mind-body chemicals during exercise



Increase In Endorphins - An exercise session of even 30 minutes can alleviate depression and increase a positive mood reaction.



Concentrations of Norepinephrine- A chemical that can moderate the brain's response to stress and boost the body's ability to deal with mental tension.



Dopamine- A rise in the feel-good chemical that results from doing something productive.



Serotonin - The chemical that gives us a "feel-good" sensation like pride when someone compliments us for our efforts.

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Exercise challenges in activity programming

3 Major challenges

- Declining health, behavioral changes, and care-giver engagement

During early stages

- Depression, consistency, and verbal encouragement

Middle stage

- Behavior, extreme agitation, supervision, care-giver support, short-lived actions, and it isn't personalized

Advanced and final stage

- Constant supervision and physical assistance needed
- Language skills and comprehension are extremely limited
- Range-of-motion and strength exercises should remain the major focus

Special considerations

- Sun downing
- 10 minutes, lower risk of injury from falls, and reinforcement

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Cognitive decline, exercise, and research

Research significantly links exercise associated with a reduced risk of cognitive impairment and dementia.

Appears to happen in two ways:

Aerobic exercise seems to reduce the risk of degeneration of brain processes and seems to protect the brain from biological and neurological decline.

Cardiovascular benefits of aerobic exercise reduce vascular risk improving cerebrovascular health, reducing plaque build-up, and maintaining better circulation to the brain.

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Results of a dementia and exercise clinical trial

At post –test

- Exercised more often, had fewer restricted days, better function and fewer depressive symptoms than people on Routine Medical Care (RMC)

Over 24 months of follow up

- Changes in physical activity were maintained and mobility improved
- Individuals with dementia entering the study with higher levels of depression showed considerable improvement in positive mood
- The program participants were less likely to have a behavioral disturbance

Overall findings:

- The randomized clinical trial supports the idea of individualized exercise to improve or maintain physical functioning and mood in Community –residing individuals with dementia.
- There is also evidence of the impact of improved physical function on the Quality of Life among individuals with dementia

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Exercises to benefit persons with cognitive decline

Dancing



Group Experiences



Tai Chi and Mindfulness



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What is mindfulness?

What comes to mind when you hear the word mindfulness?

According to Psychology Today: “mindfulness is a state of active, open attention to the present without judging thoughts and feelings”.

The goal is to become aware of one’s body, mind, and feelings in the present moment and work towards creating a feeling of calm.

Mindfulness maintains a moment-by-moment awareness of thoughts, feelings, bodily sensations, and surrounding environment, through a gentle, nurturing lens.

In contrast: Mind-*fulness* is having too much to think about leading to stress

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Mindfulness is associated with structural brain changes

Recent studies show the practice of mindfulness has measurable impact on the regions of the brain associated with memory, learning, and emotion.

Reduction in anxiety, depression, and chronic pain has been documented

Increases in the hippocampus involved in learning was noted in studies in as little as two weeks after starting mindfulness practices

Something so simple can make a big impact!

8 things to know about mindfulness

- It is not obscure or exotic
 - *We already know how to do it*
- It's not something special to do
 - *The practices are part of us*
- You don't need to change to do it
 - *It becomes part of who we each are*
- It can be transformational
 - *Imagine if everyone was present in the moment*

- Anyone can do it
 - *Easy to learn, transcends age-culture*
- It's a way of living
 - *It brings us to an awareness of our surroundings and lowers stress*
- It's evidence-based
 - *Science supports the benefits*
- It sparks innovation
 - *Helps us continue to be creative*

Happiness is connected to mindfulness



Happiness is only 50% genetic... change happiness by being mindful



Happiness and gratitude are often connected. We need to treat each other with compassion and patience



Our mental outlook impacts choices. The CDC says choices may be more important than pharmacology and exercise combined

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Our daily attitude can impact our physical aging

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Mindfulness promotes neurogenesis

Focuses attention
instead of emptying
the mind

Triggers relaxation

Promotes moment
to moment
response without
judgement

Improves attention

Promotes positivity,
gratitude, and
kindness

Guided imagery
helps promote
imagination

Not everyone
responds the same
way, so some
tailoring is needed

15 minutes of
mindfulness slows
progression of
dementia and MCI

Improves mental
clarity, digestion,
resilience, and
immunity

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32

Mindfulness for Dementia

Helps center the body and bring focus to the present

Shifts brain's momentum back to a healthier state focusing on what can be understood or controlled in the moment

Reduces stress, improves sleep and overall Quality of Life

Can be a self-soothing tool

Can also be used as a de-escalation strategy

May slow process of decline for those with MCI according to Mayo Clinic

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33

33

Mindfulness and dementia research from NIH

Improved psychological well-being

Reduced stress and depression while improved BP, mood, and sleep

Modest memory retrieval have been seen

Some studies observed verbalization improvement

Reductions seen in muscle tension, mood disturbances

Programs incorporating meditation with yoga and breathing showed improved communication

Provided cognitive stimulation and engaged imagination

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34

34

Mindfulness and Meditation

Both practices are used to increase a sense of calming and relaxation

Both are mind-body practices

Both are used to focus on the interactions between the brain, mind, body, and behaviors.

Both can be used as stress management practices

Both involve concentration and awareness.

Both practices can be compatible to personal prayer.

The biggest difference is that Mindfulness is the awareness of “some”-thing and Meditation is the awareness of “no”-thing

Mindfulness and pain reduction links

Studies show mindful people report less pain and lower activation of the “pain center” of their brain.

The innate ability to be mindful and paying attention to the present moment differs in people.

Those who are naturally mindful or adopt mindfulness practices have less pain.

Deep breathing

Most mind-body exercises have deep, slow and controlled breathing in common

The major function is to fuel the body and its cells with nutrient-rich oxygen. As a result, the heart rate slows, and the blood pressure lowers

It will keep the heart stronger longer

People should take 5 deep breaths 5 times a day during rest and incorporate the pattern during active exercise sessions.

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37

Tai Chi



Tai Chi originated in China as a martial art and is a mind-body practice in alternative medicine.



Tai Chi is referred to as “moving meditation.” The practitioners move their bodies slowly, and with awareness, while breathing deeply.



Scientific research on the health benefits of Tai Chi is ongoing. Many studies have focused on Tai Chi’s potential for preventing falls and improving cardio fitness and well-being in the senior population.

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38

Closing thoughts on mind-body engagement

Centuries ago, western culture lost its focus on the interconnectedness between the body and mind or spirit, and how each has the power to affect the other.



Cultivating a love of movement can help someone get beyond the concept of physical fitness as separate from mental fitness- and toward a lifelong program of total wellness and good health through mind and body focus.

Ready?
Let's put theory to practice

Resources for brain information

Dr. Linda Sasser: www.brainandmemoryhealth.com

- Brain SENSE workbook
- Brain Enrichment Courses and training

American Music Therapy Association

- Courses and training

Total Brain Health: Dr. Cynthia Green: www.tbhtoolkits.com

- Group-Based training “toolkits” backed by science-great for rehab

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41



Thank you for attending today

Sandy Stoub, Symbria Inc.

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42