

# Chapter 5

## **T**HE POWER OF MUSIC

*Music cleanses the understanding, inspires it, and lifts it into a realm which it would not reach if it were left to itself.*

*- Henry Ward Beecher*

**M**usic is found in every known culture. People enjoy the rhythm of music and thrive on it. People hear music and the rhythm can calm them, excite them, or inspire them. Music has the power to create a mood. How?

Is it the instrument that creates the music and mood, is it the tempo, is it the organization of patterns repeated and expanded upon? Most scientists would lean towards the simplicity of order that a song has. The music the brain enjoys most has order that is new, then repeated, then varied with rhythm or volume. Music that is simple and organized, yet with enough complexity to be interesting.

*At night when you turn off all the lights  
There's no place that you can hide  
Oh no, the rhythm is gonna getcha*

*In bed, throw the covers on your head  
You pretend like you are dead  
But I know it  
The rhythm is gonna getcha*

*--Gloria Estefan*

Research is still trying to decipher precisely how music benefits the brain. The “Mozart Effect” is an interesting theory indicating that listening to Mozart will improve your math and reasoning skills and has even increased IQ scores up nine points. The skills improved in human studies as well as laboratory rats. Unfortunately, the jury is still out

on this one because other studies have not had the same results. The question is often “Was it the specific music of Mozart or was it simply music itself that enhanced the learning?” One issue that is agreed upon is the ability of music to help the brain function optimally. Music just makes you feel better.

You are relaxed but invigorated. In this state, the brain is able to work at its peak without the distractions of stress.

**S**o take that a step further. It is known that music is pleasant and beneficial to the brain. Exercise is excellent for the brain. What happens when exercise is combined with music? Charles Emery from Ohio State University asked just that question and had exciting results from his study.

Patients with coronary artery disease often have compromised cognitive ability due perhaps to the restricted blood flow to the brain. Emery thought this would be a particularly interesting group to study because the research could offer specific benefits and improvements in the quality of life for these patients.

The participants had undergone bypass surgery, angioplasty, or cardiac catheterization and were currently involved in their final weeks of a cardiac rehabilitation program. The participants were given verbal fluency tests before their treadmill workout. During their workout, a portion of the participants listened to Vivaldi’s “The Four Seasons.”

This particular piece of music was chosen because it has a moderate tempo and had shown positive effects on medical

patients in earlier studies. Emery noted that personal preferences in music should also be evaluated to see how other types of music might influence cognitive outcomes. Remember, “The Mozart Effect,” is not being replicated in all studies. It is still not conclusive if it is only Mozart or possibly any type music that can produce positive results for the brain.

After each exercise session, the participants completed a thirty-item checklist to evaluate anxiety and depression, and then another verbal fluency test.

The participants reported feeling better emotionally and mentally after working out whether they listened to music or not. The verbal fluency tests told another story. The group that listened to music had doubled their verbal improvement over the group who exercised without music. Emery concluded that listening to music while exercising may positively influence cognitive function. The combination of music and exercise can stimulate and increase thought arousal as well as organize thinking patterns.

**W**hen you hear music, the brain has to process it. Study after study shows how the brain is stimulated, relaxed, and organized by styles of music. Mozart is the most studied music, with Baroque (lively music that combines beauty and an organized style) showing interesting responses by the body. When listening to Baroque music, the body is calmed as well as enthused. The brain is then in perfect balance to perform; relaxed yet alert to learning.

Researchers continue to study the distinctive patterns of Mozart, Baroque, and other styles of music. Study participants who listen to music have the information stimulating the left brain as it organizes and analyzes the composition. The artistic style of the music activates the right brain into its creative comfort zone. Music offers a useful tool for enhancing intellectual performance.

When simultaneously engaging the left and right brain during learning, the brain is able to more easily manage new information. The left brain wants to take the data and process it into extreme order. The right brain takes that same information and resourcefully explores its content as a whole. It is a popular notion that people are either left brain or right brain thinkers. That is an enormous oversimplification. You might have a strong orientation to one side or the other, but solving any problem requires the integration of order and creativity.

Additional studies have used other specific pieces of music for their research. Handel's Water Music (Morning Has Broken) was used by the University of Texas as they studied student's memorization skills with and without music. Their results showed music can possibly improve recall, but recall was even better when the same music was played during learning and testing.

All the music used in the various studies shared a common denominator and that would be the simplicity of order throughout the piece. This order involved repetition, a change with variances in the "feel" or rhythm of the music, and then a return to a variation of the repetition. Yet through it all, organization was the foundation.

Rhythm can also help organize the brain which allows you to think clearer and more creatively. Your brain first hears the music and then the body responds with the rhythm it feels. You will notice a musician rarely is perfectly still while performing. Whether their music is through song or an instrument, their bodies feel the music and naturally sway and move as they display and project their music through sound as well as movement. You probably respond to music the same way. Can you actually listen to music you love and stay perfectly still? Your body will find the rhythm and move with it. Your foot might start tapping, or your head may nod, or your shoulders will sway, or your body may rock side to side. Your body “feels” the music and is projecting those thoughts through rhythmic movement.

By encouraging this same response to music in yourself, you can promote the order that the brain thrives on. The brain blossoms with intricate rhythms and patterns of precise order, the same way the heart thrives on a perfect rhythm of beating. This supplies strength, power, and calmness in the reassurance of order.

**U**sing this knowledge, you might want to take some music lessons to improve your brain fitness. When you play music, you must think about the notes, the tempo, the intensity, the emotion; then combine that with rhythmic and defined motions.

Choreographed dance classes provide another opportunity to improve brain fitness. Not only are you learning new dance steps (creating new brain cells) but these steps are based on previous known moves so your brain is connecting with memories (brain cells communicating with

each other). While the music plays you are moving your entire body in rhythm; this of course is a fancy way of saying – you are exercising.

The New England Journal of Medicine published a clinical report that showed people who danced regularly decreased their risk of dementia by seventy percent. Not bad for a little cha cha and samba!

Here is something you can do to use music to your brain's advantage. Think of a song you have always loved; do you know all the words? Write down the lyrics either by finding them online or by listening to the song a few times. Then begin to sing along until you are proficient and comfortable with your memorization.

This type of simple yet focused learning has many benefits.

- You are acquiring new information which equals new brain cells.
- You are taking something familiar and then adding the challenge of something new.
- The brain must take that new information and create pathways for the new cells to connect with the old information.
- This creates orderly patterns in the brain.
- Your intense focus on learning new information naturally releases the neurotransmitter acetylcholine. (Acetylcholine is extremely low or absent in patients with Alzheimer's disease.)
- By involving yourself in activities that require your full attention you are teaching your brain to age well with **simplicity** and powerful **complexity**.

## **S**ome interesting facts about music:

Thomas Jefferson regarded music as "a delightful recreation through life" and "this favorite passion of my soul." He was devoted to the violin and practiced three hours a day. As he was writing the Declaration of Independence, he took mental breaks to play the violin. This helped him organize his thoughts in order to produce the quality and perfection he desired for this historical document.

Albert Einstein was another lover of music. Even though he is known for his brilliance, he did quite poorly in grade school. His teachers suggested that rather than waste the school's time and money, his parents should take him out of school and find a non-academic career for Albert. His mother did not believe her son was a poor achiever. She instead bought him a violin that Albert played and played well. This is believed to have been the key that unlocked his great intelligence. In later years, Einstein often turned to his violin to help him sort out problems and equations he was creating and developing.