

# The **Mozart** Effect



**Harnessing the Power  
of Baroque**

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## Who Was Mozart?

Wolfgang Amadeus Mozart was born on January 27, 1756 in Salzburg, Austria, and died a premature death on December 5, 1791 as a 35-year old. His musical brilliance was seen very early in his life when, as a four or five year old he wrote his first composition Andante in C.

During his short lifespan Mozart managed to compose 600 composition works. Many believe his music to have been the pinnacle of concertante, symphonic, chamber, operatic, choral and piano music.

Love him or hate him, but Mozart has left a legacy that is still appreciated by music lovers and students of music to-date. There is no doubt, even among his critics that Mozart composed his best work shortly before his untimely death. The Requiem is one of these pieces.

Joseph Haydn, another classical composer well known and appreciated for his musical talents wrote about Mozart: *"posterity will not see such a talent again in 100 years."*

What is interesting to note is that Mozart showed manic depressive tendencies throughout his adult years. Perhaps it is this close encounter with madness that enabled his extraordinary talents? Fact is, he was talented beyond his age and time.

## Inside The Mozart Effect

The Mozart Effect came about thanks to Dr. Alfred Tomatis' research. He analyzed the effects of Mozart's music on children who suffer from communication and speech disorders.

Thanks to Dr. Tomatis' findings the term Mozart Effect was coined; in its basic description it signifies the transformational power of music in education, well-being and health.

Since the Mozart Effect became known as a special method to deal with cognitive education for small children and those who suffer from disorders such as dyslexia, autism, ADD, mental disorders, listening disorders, injuries and physical disorders much has been said and written about the term.

To-date the academic world is torn between results of the research that has gone into the Mozart Effect since its inception. While some researchers found it to be based on truth, others dismissed it as hearsay after doing extensive testing themselves. You'll learn more about either side of the argument within the scope of this eBook to help you understand both sides.

Mozart's distinctive Baroque music is used to soothe the mind, induce sleep and relaxation, reduce depression, anxiety and stress, improve awareness and memory and awaken the body.

### ***The history of The Mozart Effect?***

Research into the music of Wolfgang Amadeus Mozart first took place during the late 1950s. Dr. Tomatis had the idea to experiment with auditory stimulation in order to help children with communication and speech problems.

What started out as a simple experiment soon became so successful that by 1990 hundreds of centers had been established. All of them aim to help children with Mozart's Baroque music.

Thanks to the high frequencies of the symphonies and violin concertos in the Maestro's music it was possible to aid kids with problems related to autism, speech disorders and dyslexia.

Shortly before the turn of the century the University of California took up new studies to experiment with Mozart's music in order to further spacial intelligence.

### **Why Mozart – wouldn't any other classical music do the same job?**

It is clear to all of Mozart's fans that he was a master of his art. During his short life Mozart wrote over six hundred major compositions. He started out at the early age of five. When Dr. Tomatis researched high-frequency music and its effect on our well-being he soon singled out Mozart's works for further studies, hence the Mozart Effect was coined.

It is also widely believed and understood that Mozart's music is the most researched and popular in the classical genre.

### **Can I use other classical music for learning?**

You certainly can. As far as classical music goes you can experiment with different composers to find the music that speaks to your heart. Depending on the intensity of the music some compositions are better suited for relaxation while others are ideal to raise your heartbeat.

Try the following Baroque composers for a change; Handel, Bach and Correlli.

### **What is the best way to use Baroque music to improve productivity, creativity and study?**

Everybody responds different to the stimuli of music. While some people become hyper-responsive, others fall asleep while listening to a concerto. People usually struggle to concentrate when they are over-stimulated or extremely worn out and tired.

You'd be surprised how classical Baroque music can activate your concentration levels while helping you to soothe your brain and nerves. The easiest way to get into a study mood is by switching off all distractions from your environment.

To do this, invest into a good set of headphones and listen to Mozart or other classical music while you study and learn.

### ***The Mozart Effect and Sound Healing***

One of the reasons the Mozart Effect has become so successful is because of the healing attributes of sound. As you might or might not know, sound is a vibrational field transformed into music, languages and tone.

Organized sound expresses itself in the form of words, expressions, ideas and feelings, whereas in a disorganized form sound becomes simple noise.

Most of us have trouble to tolerate noise but since we all perceive sound to be different it is also experienced with different emotions by us all.

This is especially transparent in music; what might be the favorite song of your teenage son could sound like a disorganized noise to you.

Due to its soothing capabilities the Mozart Effect achieves healing in the sense that our mind, body and spirit become one. Mozart's music is perceived by many as harmonious, gentle, powerful and sad. It helps us to evoke feelings, puts us in touch with our roots and connects us to our brain.

We feel more energized, alive and inspired to deal with just about any situation. The Baroque music of Mozart can also help to alleviate pain thanks to its healing properties.

However, one should never see music to be the all-in-one solution to healing because it is not.



A lot of factors play into the equation when an attempt to heal with music is made; the environment, your state of mind, your health are just a few to mention.

### Can music raise my I.Q. Levels?

Our intelligence is measured in different ways. A lot of studies have been made about the intelligence of humans and whether music can actually raise our I.Q. or not.

Studies have uncovered that if children are exposed to classical music from an early age it can help build their neural pathways. Those pathways are directly responsible for spatial, memory and language development. Other studies have shown students exposed to Mozart's music prior to testing were able to score better marks than those who weren't.

### Who is Don Campbell?

If you've been researching the Mozart Effect for some time you've probably heard of Don Campbell before. Born in Texas, Mr. Campbell studied classical music in Europe during his high school years. As a student of legendary Jean Casadesus and Nadia Boulanger at the Fountainebleau Conservatory in France Campbell began his career as a music critic and teacher.

His passion for music soon led Campbell to travels around the world to further his interest in sound and healing. During his travels he researched and documented the role music plays in our lives in regards to psychology, therapy, imagery applications and more. Eventually he founded the Institute of Music, Health and Education.

Don Campbell also became a widely accepted and respected author of 23 books of which *The Mozart Effect®* and the *Mozart Effect® for Children* became his most popular.

He also recorded a top-selling *16 Music for the Mozart Effect®* CD which dominated the classical charts for several years.



## Sound Bites - How Sounds Influence People

Music is a powerful tool, so much so that it is worth exploring further to show you its true powers. The first thing you need to understand about music is how any type of music can influence your behavior.

While classical music is soothing for most of us, rock music has been found to make us eat faster and eat more by researchers at the John Hopkins University. Classical music on the other hand makes us eat less and with more awareness.

### *Music and The Brain*

Mozart's music is found to assist both the left and right hand side of our brain, helping us to overcome the typical left brain dominance in our Western society.

Scientists believe that when we listen to Mozart we enjoy an increased sense of intuition and concentration. This is achieved by the music's ability to organize neuron firing patterns in our cerebral cortex.

### *Music and Learning*

Georgi Lozanov, a Bulgarian psychotherapist has proven the fact that listening to slow Baroque music will aid learning. His *Suggestopedia* teaching method has been found to improve language studies by up to five times faster than using conventional learning methods.

However, the teachings of Lozanov are not limited to the study of languages. He has also seen great results in other fields of studies.

Other music such as the soothing Gregorian Chant music has also be found to improve concentration for students while learning.

### **Baroque Power**

Researchers have long known that Baroque music with around 60 beats per minute can accelerate learning. For decades scholars of all creed and age have taken advantage of these findings and implemented Baroque music into their teaching programs.

Baroque music is said to enhance our memory – both short and long term, and there is experimental evidence it helps to stimulate the growth of plants while other types of music such as acid rock kills them.

#### **What are the psychological effects of Baroque music?**

When we listen to Baroque music our heartbeat slows down, our blood pressure decreases, beta (fast) brain waves slow down by about six percent while alpha brain waves (the slow kind) increase as much.

This allows the synchronization of both brain hemispheres. The resulting effect is also called *alert relaxation*. In this state of conscience our body is more efficient and able to function on less output of energy.

### **Music and Neurons/Intelligence**

Some people say the type of music you listen to will either make you smart or dumb. I would have to disagree with this narrow-minded view. It's just as misleading as saying smart people wear Hugo Boss while dumb people wear high street fashion.

While much data has been analyzed about the power of music there is no definite proof to say music makes you dumb. What we can safely say though is that music certainly influences our reactions to the environment.

A person who listens to Rap music consistently is more aggressive than a person who favors classical music. To say they are therefore dumber is simply a cheap argument.

### **Music and Babies**

The *Journal of the American Medical Association* took out a study during which expectant mothers were exposed to classical music in labor. They found that those who did listen to this type of music didn't require anaesthetics thanks to the release of endorphins. The study also found that many mothers-to-be were distracted from their pain which also helped to release anxiety.

Other studies uncovered that babies in the early stages of pregnancy actually preferred the music of Vivaldi and Mozart to those of other composers.

On the contrary, if pregnant women listened to rock their foetuses were found to be more aggravated with plenty of kicking and increases in their heart rates.

### **Perception of Sound**

Since we are all affected by sounds measures had to be put in place to study our perception to sound. To measure psychosomatic changes, psychological changes, emotional experience and the psychoacoustical characteristic of music researchers had to develop different tests.

As you probably realize by now, there is no universal defined knowledge that states music triggers certain reactions in humans. Due to conflicting tests and the complexity of music it is simply impossible to determine our reactions to it as academically sound at this point in time.

One such study was made to measure our heart rate and blood pressure while listening to music. As you can probably guess, the results were varied.

Some tests indicated it is indeed possible to stimulate our heart with stimulating music while decreasing it with sedative tunes. On the contrary

some studies found it didn't matter whether we listened to upbeat or relaxing music; the heart beat was increased on both counts.

Gerra, another researcher found that exposure to techno music was responsible for systolic blood pressure, stress and increased heart rate. On the other hand he documented that classical music didn't change these parameters significantly.

Another aspect many test groups seem to oversee is the fact that we are all governed by our preferences and age. While an older gentleman might prefer classical music to loud rock, a teenager might think the world of loud rock and feels empowered by it. Some people even deem music to be emotionally arousing.

## How to Harness the Power of Mozart

An easy way to harness the power of Mozart's Baroque music is through sleep learning. By now you have read a lot about conscious learning with the help of classical music, but you can take this one step further and use Mozart's works to program your brain while you sleep.

Sleep learning has enabled thousands of students from around the world to learn faster through the subconscious power of our brain during their sleep.

It has been scientifically proven that we are capable to absorb complex information while we sleep. Learning material is played to us during the sleep cycle, allowing us to learn with the help of our subconscious.

This is a very powerful way to harness our own power. It can enable you to learn a foreign language, improve your mental attitude and even undertake professional studies for a degree.

Many professionals involved in the studies of learning believe this to be a stress-free way to learn.

On average a human uses around five percent of the brain's capacity leaving 95 percent unused and wasted.

As a matter of fact, sleep learning is so powerful that one Hungarian student managed to win a BBC contest in the UK by memorizing one thousand and twenty-six English words in as little as six weeks thanks to sleep learning.

The Mozart Effect could be tied in with sleep learning by combining the music of Mozart with learning materials that are being played to the student at night.

A secondary way to harness Mozart's music is to wind down one hour before bedtime by listening to it and then use sleep learning techniques to study during sleep.

### Autistic Help

Parents with autistic children know too well of the frustrations experienced by the general misconception about autistic children in our society. Many parents have seen tremendous results by using the Mozart Effect on their autistic child, even so there isn't an exact scientific explanation to prove the results without a doubt.

Perhaps it is the lack of proof that sees some people oppose the whole scenario as pokey.

Despite the opposition of the Mozart Effect theory a lot of parents of autistic children have seen tremendous results with their kids after exposing them to Mozart's music for a lengthy period of time each day; the kids became more responsive to their direct environment and even made eye contact with others – an amazing accomplishment for autistic people.

### Mozart for Better Vines

Others use the Mozart Effect to improve the state of their harvest such as Tuscan winemaker Carlo Cagnozzi who swears by the power of Mozart's music. He has believed into the power of music ever since playing the accordion to his grapes some ten years ago. When he learned about the Mozart Effect he started playing the composer's music to his vines and never looked back. He says: *"It ripens them faster,"* adding that it also keeps away parasites and birds.

### Can Mozart help with aggressive kids?

The American Psychological Society has published a report that stated research proved the link between youth violence and violent media, including music.

I think it safe to say that children model aggression from exposure to movies, TV, music and games. Having said this, adults do too.

If someone is exposed to aggression for a lengthy period of time it becomes second nature to them because they lose touch with reality.

If you are dealing with an overly aggressive child it might be best to try and establish some form of mutual respect. The first step in doing this is to try and minimize their exposure to violence. You can do this by reducing their TV watching time while increasing your family quality time.

It is a sad state of our society to stick children in front of the TV to gain a few moments of solitude. Those few moments soon become a few hours before becoming a habit that will be hard to break.

Unless you treat your child with respect it will be hard to demand the same in return. The best way to lead your children is by giving them:

- Fair discipline
- A harmonious family environment
- Love
- Acceptance
- Your time
- Encouragement
- Respect

If all of the above doesn't seem to turn your child from aggressive to loving, then you should seek professional counseling.

It is pointless to try and turn an aggravated child around with Mozart if the child can't stand classical music to start with.

You are much better off trying to talk with your child and meet it on its own emotional level without getting carried away emotionally. Since you are the adult, you need to demonstrate control.



## ***Mozart and Animals***

Much like humans respond to sounds so do animals, especially pets. While I'm not a scholar, much less a psychologist I did experiment a little with my pet birds to see how they reacted to Mozart's music or classical music in general, opposed to listening to rap or rock.

What I found was encouraging. My birds were found to be more calm and relaxed, even to the extent of happily whistling a tune of sorts while listening to classical music in general. On the contrary they showed some levels of aggression while being exposed to rap or some rock music. Despite my own little experiment I'm aware that those results are not conclusive. To be as such more detailed studies would have to be made, recording in detail the progress of a wide range of pets to see whether there is a common behavior in regards to the type of music they listen to.

## Mozart Effect Studies

The earliest records about the effects of music on the human brain were made in 1988. Gordon Shaw, neurobiologist and a graduate student by the name of Xiaodan Leng tried to model human brain activity on a computer at Irvine's University of California.

During their tests they found a connection between our nerve cells and other predisposed cell groups. They then tested the output of our nerves with the input of music to see whether there was a noticeable change. What they found was both revolutionary and surprising; the rhythmic patterns sounded much like the normal imprint they had recorded pre-music testing with strong characteristics of new age, Baroque and Eastern music.

As a result of their findings Shaw then hypothesized that it might be possible to understand the brain's neural activity by trying to work it in reverse; observing how it responded to the stimuli of music. He believed it might be possible the brain would respond to patterns in music by activating a cluster of similar firing patterns in the nerves.

On October 14, 1993 Shaw in conjunction with Katherine Ky and Frances Rauscher published in *Nature* a short summary of their experimental findings what they coined the “*Mozart Effect*.”

During their experiment 36 Irvine students were separated into three groups:

- Group A listened to a selection of Mozart's music (Sonata in D major for Two Pianos, K488).
- Group B listened to a "*relaxation tape*,"
- and group C was to experience ten minutes of silence.

After the conclusion of this first part of the test all of the 36 students were exposed to a spatial I.Q. test. The test involved the correct guessing of paper shapes after they had been folded and cut.

The result was astounding; the students who had listened to Mozart's music (group A) were averaging a 8-9 point increase in their intelligence quotient compared to the other two groups.

Despite the success the actual I.Q. increase was short-lived, lasting only around ten minutes.

This first test into the Mozart Effect stirred up enough interest in the academic world to prompt further testing to be done.

When a test was concluded at the University of Auckland in 1994 by Kerkin, Stough, Mangan and Bates no conclusive results could be found to prove the Mozart Effect.

It is to be noted that the I.Q. test used in the Auckland experiment was from the *Advanced Progressive Matrices of Raven* while Rauscher had used the *Stanford -Binet Intelligence Scale*.

A third test was done in 1994 by Monseth and Kenealy during which the test subjects were exposed to the *Stanford-Binet* I.Q. test parameters. However, none of them showed any notable differences after having been exposed to disco music, silence and Mozart (by equal thirds.)

In 1995 the original Mozart Effect testing crew were once again exposing 79 test students to the same I.Q. test.

The only difference to the original separation of the three groups was to expose the previous “silence” group to composer Philip Glass' music. Again the “Mozart” group showed increased I.Q. ratings.

Further testing also uncovered that people who listened to dance music didn't improve their I.Q.

Many consequential I.Q. tests were done in the years after and several of them didn't see any spatial I.Q. increase after test results were established.

Then in 1996 and 1997 two separate studies were performed at Ursinus College in Collegeville, Pennsylvania. Lead by Taylor and Rideout further evidence to the effectiveness of the Mozart Effect was established.

Taylor and Rideout also recorded measured changes in the brain wave activity of the test students, indicating there was a direct connection between Mozart's music and a person's I.Q. score. Once again, the increase in the test subjects intelligence was only temporary.

## What The Skeptics Say

Despite all the advocates of the Mozart Effect there always has been and will be those that oppose the effect. In 1998 Christopher Chabris, a then graduate student at Harvard University questioned the Mozart Effect studies of the previous five years. He conducted his own research during which he examined sixteen of the Mozart Effect studies.

His conclusion showed that listening to Mozart wasn't making people smarter.

Sceptics like Eric Seigel and Lois Hetland had to admit that there was some kernel of truth to the Mozart Effect after having done some extensive testing to prove it all wrong.

In 1999 Kenneth Steele of Appalachian State University took out the most recent Mozart Effect studies with Melissa Crook and Karen Bass.

After extensive testing the Rauscher et al. original test with the Philip Glass switch in the third group they found that group C showed the biggest number of correct answers out of the lot, which failed to support the original Mozart Effect experiment.

## Is It Really Just Hype – The Science Behind It All

As scientists gain more and more knowledge about our neurological capabilities we can learn to appreciate the immense, undiscovered powers that lie in the human brain.

Many begin to understand that we have barely touched the “*nerve*” (pun intended) of the subject matter and many theories are being put forth in regards to how music effects the brain in various ways.

### **Neurological Effects**

It is known to us that our ability to percept music takes place in the right hemisphere of the brain. It is the same hemisphere able to perform long term sequencing operations and spatial cogitation.

Roederer even went as far as saying: *"Musical perception does involve the analysis of spatial excitation patterns along the auditory receptor organ."*

A neurologist at the University of Illinois, John Hughes evaluated hundreds of music compositions and found that sequences with repeat triggers after every 20-30 seconds, such as Mozart's music, showed the strongest brain responses in test subjects.

This is partially due to the brain's natural cycles.

Hughes tested his theory on a group of severely epileptic patients, many of them experiencing seizures close to the comatose point. Out of 36 test subjects 29 showed measurable success after listening to the music of Mozart; with less severe and fewer seizures.

Interestingly the same group was also exposed to Glass' compositions among others, showing no improvement.

Similar improvements were found by Julene Johnson at the University of California while testing Alzheimer's disease patients. Many showed drastic

improvement after a 10-minute Mozart session with parts of the *Stanford-Binet Intelligence Scale*.

In a combined study to measure the impact of the Mozart Effect with MRI (magnetic resonance imaging) both Mark Bodner and fellow neurologist Gordon Shaw (co-researcher of the Mozart Effect) found that all styles used in the test (Mozart, 30s pop music and Beethoven) activated the auditory cortex. The auditory cortex is the place where your brain processes sounds.

They also found that Mozart's music was the only one to stimulate other areas of the brain to activate fine motor coordination processes. This could explain improved spatial reasoning.

### ***Psychological Effects***

The University of Fribourg in Switzerland conducted an interesting test to prove that the Mozart Effect also had the capabilities to improve the psychological effect in humans.

A study was conducted to test a group of children by giving them increased music education while decreasing their studies of mathematics and language.

It is interesting to note that this subject group performed no worse at math tests than those who had been exposed to increased math studies.

While these tests measure the impact of music on our perception, intelligence and ability to absorb new information there is no concluding proof that states music effects are thoroughly understood at this point in time.



## **Sensory Stimulation**

Tests with early babies and fetuses during pregnancy have shown that we perceive music (especially classical music) as a sensory experience.

Therefore the brain gets excited, triggering “*happy feelings.*”

What we do know about sensory stimulation is that if the brain is deprived of it for long periods of time our neural pathways shrink and eventually disappear.

Studies on the subject of sensory deprivation have shown that we can experience a loss of I.Q., a loss of memory and even changes to our personality.

## In Conclusion

There is no doubt that the Mozart Effect has created a stir in the academic world as well as in the eyes of the general public. Whether you have been exposed to the Mozart Effect through academic studies or by reading Don Campbell's Mozart books it is safe to say that a lot of people lucky enough to have been exposed to the subject, because of personal illness, disease or ailments had the chance to better their circumstances.

If this was made possible by sheer coincidence or through the help of Mozart's music will never be known for certain until we learn more about the human brain and its hard wiring.

Much can be said for all the claims that support the theory and just as much can be said against them. In the end your beliefs are or will be founded on your experience with the music of Wolfgang Amadeus Mozart.

To be fair I think it is safe to say that classical music has its merits in regards to calming the listener. I have yet to hear of a person who demonstrated aggressive behavior after listening to classical music.

For most of us it is a soothing, relaxing experience allowing us to daydream, learn and relax all at once. Having said this, there are plenty of people who can't stand listening to classical music. To say it would be relaxing for them would be a lie.

A lot of non-academic people perceive Mozart's music as a quality experience during which we can chill out, forget about our everyday worries and simply relax.

Here are some ideas how you can enjoy the Mozart Effect (or any classical music) to help soothe your busy mind. Whether you do this daily or a couple of times a week doesn't matter.

What does matter is the experience of the sensory sensations while listening to classical music:

- Play it softly during your sleep.
- Soak in a hot bath while listening to one of Mozart's compositions.
- Buy an mp3 player and take Mozart to the beach, while you walk, while you work out at the gym or even during your lunch break at work.
- Listen to classical music before you go to sleep each night.
- Meditate with classical music.
- Indulge in a massage with Mozart played softly in the background.
- Turn up the volume while laying on the couch, totally immersing yourself into the melodies of Mozart's works.

For all it's worth, the Mozart Effect needs to be explored further, even if you are simply going to increase your exposure to classical music to calm the mind. I think unless you are an academic looking to further your studies into the subject you should enjoy Mozart for what Mozart is – a true genius at his craft and one of the best composers to ever have lived on this planet.

With that said, it's time for Mozart's Sonata for Two Pianos in D Major, K. 448 to wrap up this eBook. I hope you enjoyed learning more about the Mozart Effect and if you are new to Mozart's music, I encourage you to explore it some more.