

The Surprising Science Behind What Music Does to Our Brains | Cleverism

by Anastasia Belyh July 29, 2020

Everyone listens to music. It helps us feel relaxed and relieves our stress. Some people even use music while working, claiming it calms down their nerves and enables them to concentrate on the job at hand.

Have you ever wondered how music influences our mind and bodies? In fact, we react to music in many different ways without even realizing what is going on.

Won't it be exciting and interesting to learn how exactly music impacts our brains and how we respond to it?

“Music is meaningless noise unless it touches receiving mind.” – Paul Hindemith

The Duke University Professors conduct an experiment on a musician to find out what music does to our brain in the following video.

It is also interesting to learn that different musical beats can induce different brain frequencies which can affect your mood in various ways.

For example, drumming can induce a deeply relaxed state. You can significantly improve your social-emotional behavior by participating in group drumming. There are in fact, numerous benefits of learning how to play a musical instrument, including better cognitive movements, improved vision, and social life.

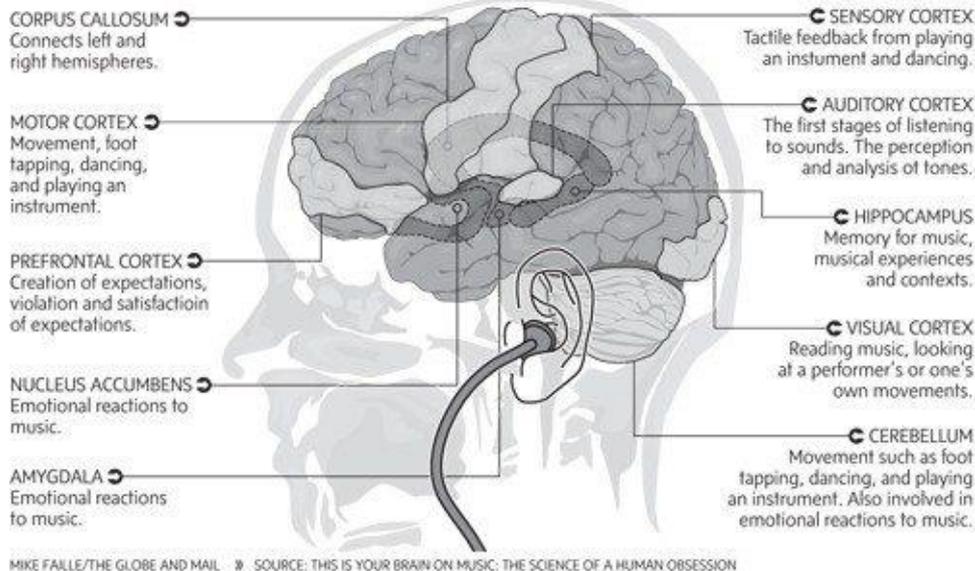
Similarly, listening to and playing music relieves stress, gives a sense of achievement and builds your confidence.

It also improves patience, memory, and time management skills in addition to making you more creative as well.

The following image shows how music affects different parts of our brain.

Music on the mind

When we listen to music, it's processed in many different areas of our brain. The extent of the brain's involvement was scarcely imagined until the early nineties, when functional brain imaging became possible. The major computational centres include:



MIKE FAILLE/THE GLOBE AND MAIL | SOURCE: THIS IS YOUR BRAIN ON MUSIC: THE SCIENCE OF A HUMAN OBSESSION

As you can see from the above image, music affects our brains in countless ways. We cannot possibly cover all of them in this post.

But, we can always try.

So carry on reading and find out the surprising science behind what music does to our brain.

WE PERCEIVE NEUTRAL FACES DIFFERENTLY AFTER LISTENING TO MUSIC

Everyone can find whether a piece of music is happy or sad within a second. How we feel after listening to a particular song or tune does not determine whether it is happy or sad.

In fact, our brain responds differently to sad and happy music. Our brain gets affected even by a very short piece of music, both happy and sad.

A study reveals people tried to match neutral expressions to the type of music they were listening to.

For example, they considered the expressions as happy even after listening to happy music just for a minute.

Quite understandably, they consider the expressions as sad when they heard sad music. But, the phenomenon was most pronounced for neutral expressions.

There is another very interesting thing associated with how music affects our emotions and feelings.

You may be surprised to learn that music gives rise to two different kinds of emotions, commonly referred to as felt emotions and perceived emotions.

Let us explain both these types of emotions. Experts opine that every piece of music has its own emotions.

Sometimes, we do not feel these emotions yet we can fully understand them. That is why some of you don't find it depressing to listen to sad music.

In fact, some of us even enjoy sad music more than happy music.

You may be thinking about how it is possible to perceive the emotions without actually feeling them. This is because listening to music does not make us feel threatened or endangered.

Therefore, it is possible to perceive an emotion without feeling it, just like in the case of vicarious emotions.

AMBIENT NOISE IMPROVES CREATIVITY

Every one of us likes to increase the volume when we are quickly completing our to-do lists.

However, loud music can actually kill our creativity rather than improving our productivity and performance.

It turns out the best option for enhanced creativity and performance is the moderate noise level.

More importantly, you can get your creative juice flowing by keeping the music at the ambient noise level.

Ambient noise is even better than the low noise when you are trying to do something creative and unique.

On the other hand, loud music or high noise level will simply be distractive and it will put you off.

Ambient or moderate noise promotes abstract processing by improving our ability to process things, which results in higher creativity.

In simple words, we adopt more creative methods and approaches when we cannot process things as we normally do.

The higher noise level makes it extremely difficult and overwhelming to process the information efficiently, impairing our creative thinking as well.

Music affects our productivity the same way lightning and temperature do.

Illogically but interestingly enough, you can be more creative in a slightly more crowded place.

THE TYPE OF MUSIC WE LIKE DEFINES OUR PERSONALITY

You would definitely take this statement with a grain of salt.

Currently, this theory has only been tested on younger, more energetic people. Nonetheless, it is one exciting theory to know more about.

Watch the video to learn what your favorite music has to say about your personality

In a recent study, couples spent a lot of time together to truly know each other.

Each participant was able to accurately predict some of the personality traits of his or her partner after discovering his or her top 10 favorite songs.

The test includes only five personality traits that are extraversion, openness to experience, agreeableness, emotional stability, and conscientiousness.

Interestingly enough, participants predicted some of these traits more accurately as compared to others after they found their partner's listening habits.

For example, they guessed emotional stability, extraversion, and openness more easily than other traits.

The most difficult to guess, based on the musical taste, was conscientiousness. The study conducted by Heriot-Watt University found the following connections between different music genres and the personality traits.

- **Blues fans:** these people are outgoing, gentle, very creative, and at ease. They have high self-esteem as well.
- **Jazz fans:** just like blue fans, these people also are outgoing, creative, and at ease and have high self-esteem as well.
- **Rap fans:** they are outgoing and have high self-esteem.
- **Classical music fans:** these people are introvert, creative, and at ease and have high self-esteem.
- **Opera fans:** they are creative and gentle and have high self-esteem.

- **Country and western music fans:** people who like country and western music are outgoing and hardworking.
- **Dance fans:** people who love to dance are outgoing and creative, but not gentle at all.
- **Reggae fans:** these people are creative, gentle, outgoing, and at ease. They have high self-esteem, but they are not hardworking.
- **Indie fans:** these people are not gentle, not hardworking, and they have low self-esteem. They are very creative, however.
- **Rock/heavy metal fans:** people who like rock/heavy metal are creative, gentle, and at ease. However, they are not outgoing, not gentle, and have low self-esteem.
- **Bollywood music fans:** People who like Bollywood music are outgoing and creative.
- **Soul fans:** these people have high self-esteem and they are very outgoing, creative, gentle, and at ease.
- **Chart pop fans:** these people are outgoing, gentle, and hardworking. They have high self-esteem, but they are not creative and not at ease.

Of course, it is very hard to generalize people solely based on this study. However, what kind of music a person likes clearly predicts his personality.

This has also been proved by the science of introverts and extroverts.

WE CAN CONSIDERABLY IMPROVE OUR REASONING AND MOTOR SKILLS BY TAKING MUSIC TRAINING

It is a well-known fact that children can benefit a lot by learning to play some kind of musical instrument or taking music training in general.

But, you may be oblivious of the fact that music can offer more than one benefit to you.

A study conducted by Marie Forgeard and Ellen Winner suggests children can considerably improve their motor and reasoning skills by taking music training.

They tested different children with varying levels of music training.

According to them, children with three or more years of musical instrument training had better nonverbal reasoning skills and vocabulary than those who did not have advanced music training.

They could also understand and analyze visual information, such as difference and similarities between patterns and shapes, far more easily than the latter group of children.

Such children also had finer motor skills and better auto discrimination abilities.

The general perception is that music cannot improve these two essential life skills.

Well, it is high time you change your mind and start thinking about arranging musical training for your kids.

You may be astonished to find how learning to play a musical instrument has helped your children develop such a myriad of extremely important skills within a short span of time.

Rick Beato, in his video, pinpoints the most important musical skill every person should have.

ONE-SIDED PHONE CALLS ARE MORE DISTRACTIVE THAN NORMAL CONVERSATION

Conversations of other people can be really distracting for you.

One-sided phone calls where you can hear the voice of one person only are much more distracting and troublesome than a normal conversation.

As a matter of fact, more than 80% of people believe they get annoyed when they overhear cellphone conversations.

But, have you ever imagined why they are so disturbing for most of the people, including yourself?

Veronica Galván, a cognitive psychologist at the University of San Diego, conducted a study to find out the reasons why phone calls in which only one person speaks are so infuriating. Miss Galván asked the participants to complete a puzzle.

Half these participants hear an entire phone conversation taking place between the two people in the background while the remaining people only heard one side of the conversation.

Participants who heard the entire conversation found it to be less distracting than those who only heard one side of it. The one-sided conversation was more distracting for people.

That is why they were more attentive to the conversation which is evident from the fact that they remembered most parts of it as well.

On the other hand, people listening to the entire conversation were less attentive and as a result, could not remember much of the chat.

So, why does the one-sided discussion grab our attention more than the complete conversation?

It is the unpredictability of the one-sided conversation which does not give us as much context as hearing both sides of the discussion. Having more context of the chat helps us tune out the distraction.

However, it is not at all a bad thing to get distracted from time to time. In fact, it can offer us a lot of benefits.

MUSIC CAN BE QUITE DISTRACTING WHILE DRIVING

According to another study, drivers can lose focus if they listen to music while driving.

The researchers required the drivers to drive while listening to their favorite music or safe music. The drivers also had to drive in silence for sometimes.

It is worth mentioning that the so-called safe music was provided by the researchers.

Most of the teenagers, as well as young adults, preferred their favorite music. But, it also turned out to be more distracting for them.

The outcome of the research was that drivers drove more carelessly and made more mistakes when they were listening to their favorite songs or music.

Another interesting point to note here is that driving in total silence did not have the same effect as the so-called safe music.

In fact, the silence made no difference to the driving habits of youngsters.

They concluded that listening to unknown and unexciting music results in better and safe driving as compared to your favorite music or silence.

LISTEN TO CLASSICAL MUSIC, IMPROVE VISUAL ATTENTION

Not only children, but people of all ages can benefit a lot from musical exposure or training.

For example, listening to classical music can help stroke patients considerably improve their visual attention skills according to yet another study.

Just like the driving test, researchers also tried to compare the results using total silence and white noise.

Believe it or not, the patients performed worse when they were being tested in pin-drop silence.

You need to further explore the finding of this study for validation because it has a very narrow scope.

But, it is really interesting to know how our abilities and senses, such as vision, respond to different kinds of music.

MUSIC HELPS US EXERCISE

How come music helps us exercise? We have already established that silence is of no help when it comes to being more creative or becoming better drivers.

Well, it turns out that it is of no help when it comes to exercising either.

Researchers have been doing research on the effects of music on exercise and workout for decades. Leonard Ayres, an American researcher, discovered that listening to music made cyclist paddle faster way back in 1911.

Why would they do that?

A cyclist would pedal faster while listening to music because it can suppress his brain's signal for fatigue.

Our body, whenever it realizes we are tired and needs to take rest, sends signals to the brain to stop and take a break.

Listening to the music and pedaling at the same time divides the brain's attention. As a result, it overrules our body's signals of fatigue.

However, it is only applicable to low to moderate intensity workout or exercise. Music fails to compete for the brain's attention and make it ignore the fatigue caused by exercise in the case of high-intensity workout.

Listening to music enables us to use our energy more efficiently in addition to enduring pain for a long time period to do harder and longer exercise.

A study conducted in 2012 states that cyclists who pedal in silence require 7% more oxygen than those who pedal while listening to the music.

In simple words, the latter set of cyclists requires less energy to do the same amount of work than the earlier team of cyclists.

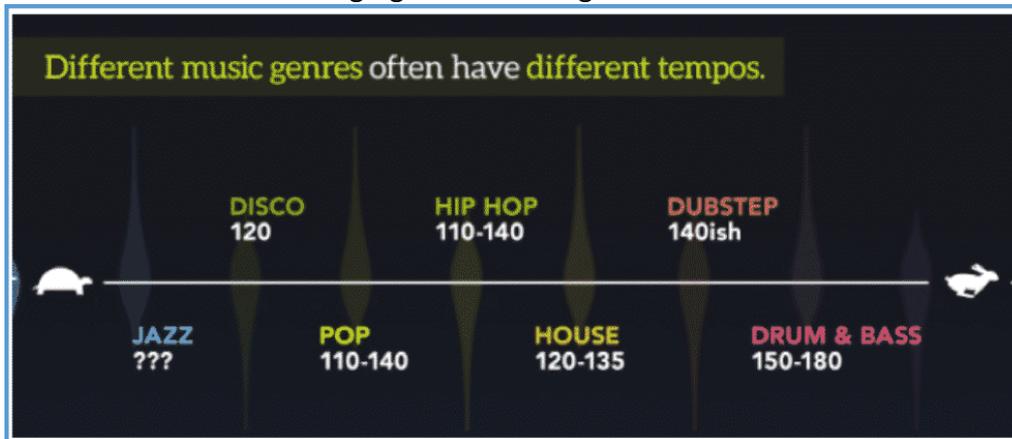
The ceiling effect is also much more common among people who listen to music at roundabout 145 bpm. Music fails to motivate them when it goes above 145 beats per minute (bpm).

Therefore, you may want to keep this fact around while choosing a playlist for running or workout routine.

Please note that different music genres have different tempos.

For example, disco has a bpm of 120 only whereas the Hip Hop has a bpm range of 110-140.

Take a look at the following figure for more genres.



Source: fastcompany.com

You can actually find the right kind of beat for your workout if you use different beats in conjunction with the actual exercise you are doing. It is very easy to get into some kind of rhythm if you match the above graphic with the table below. However, you also have to take your body's requirements into account as well because every human being is different.

COMMON WORKOUT TEMPOS

Match your **workout type** to your **intensity** to find a pace range.

	 Running	 Walking
Slower	140-150 BPM	100-110 BPM
Moderate	150-160 BPM	110-125 BPM
Faster	160-175 BPM	125-135 BPM

But hey - everybody is different. **Listen to your body!**

Source: fastcompany.com

In case you are wondering, here are the best workout songs or workout music playlist.

Finally, it can be rightly said that music, regardless of its type, can contribute heavily to the success of our workout routine.

CONCLUSION

Above mentioned are some of the infinite ways music affects our brain.

From helping us live a better life to defining our personality, music can do much more than we realize.

It is a powerful source of relieving tension, seeking solace and improving our mood in general.

So, do you know any other way music can have an impact on human life?

Similarly, does listening to music ever make you change your perception of others or live a better and happier life?

We would be very interested in listening to what you have to say.