



Music as Medicine

Research Related to Music

The first hint of what now is called the Mozart Effect emerged from early efforts to model brain activities. In 1988, neurobiologist Gordon Shaw and his student Xiaodan Ling noted during a computer simulations that there were patterns of neurons that fire in sequences and rhythms. They decided to turn the output of the simulation into sound rather than the conventional printout. To their surprise, these patterns sounded like music.

Shaw then started reversing the process, thinking that music might somehow 'prime' the brain by activating similar firing patterns of nerve clusters. He started to experiment - and there was no turning back from there. Scientists from all over the world have found evidence that music does indeed influence the functioning of our brain.

"Undeniably, there is a biology of music. There is no question that there is specialisation within the human brain for the processing of music. Music is a biological part of life, just as art is an aesthetic part of human life".

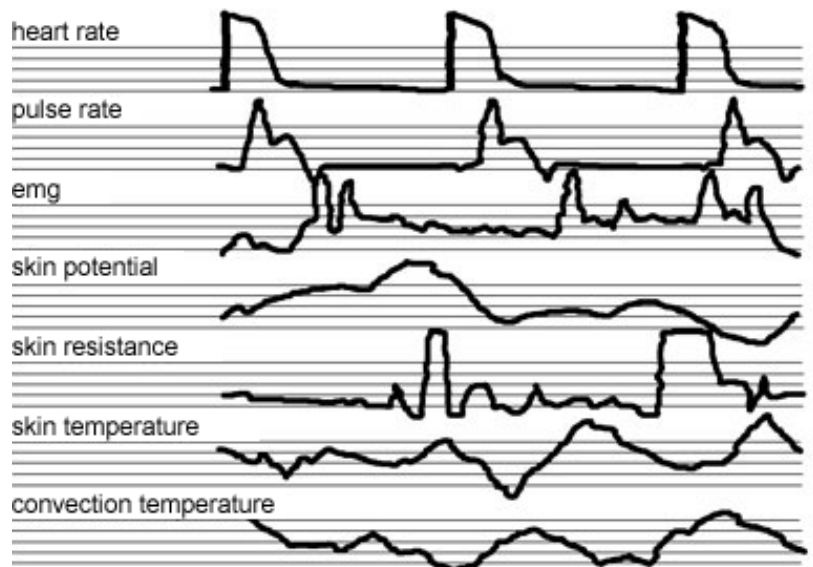
Neurobiologist Mark Jude Tramo, Harvard University Medical School

"You can activate different parts of the brain, depending on what music you listen to - so music can stimulate parts of the brain that are under active in neurological diseases or a variety of emotional disorders. Over time, we could re-train the brain in these disorders."

Neuroscientist Anne Blood, McGill University, Montreal Harvard University Medical School

Music is said to:

- Improve test scores and IQ
- Cut learning time
- Calm hyperactive children and adults
- Reduce errors
- Improve creativity and clarity
- Heal the body faster
- Integrate both sides of the brain for more efficient learning
- Tap into memories and emotions
- Structure time
- Be an effective memory aid
- Decrease epileptic fits
- Improve motor skills.



Tomatis' Contribution

From the work of Tomatis, we can conclude that:

1. There is direct relationship between our voice and our emotional wellbeing
2. The way we speak and sing mirrors the way we listen

3. Tiredness, problems with concentration and memorisation and a general lack of joy and zest for life can be related to an inability to perceive higher frequencies
 4. Motor skills and bodily rhythms are related to the functioning of our ears
 5. Our ears also mirror and have an influence upon the functioning of our vegetative nervous system
 6. By improving the way we listen, to others and to ourselves, we become better communicators
 7. As much as our eyes are 'the window' to the soul, our ears are a 'door' to the soul
 8. By improving the way we listen, we energise ourselves and become more open to the subtle beauty present in life.
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The Proof is in the Pudding

The Toronto Listening Centre recorded a study of 400 children and adolescents who had a history of learning problems, as well as a pattern of underachievement. Their parents saw improvement in various areas:

Communication: 89%
Attention Span: 86%
Frustration Level: 80%
Reading Comprehension: 85%
Quality of Speech: 74%
Memory: 73%

In the follow-up which took place half a year later, 83% had maintained the above improvements and/or gained even more positive effects. An additional 145 of the initial 400 testees had maintained some of the gains. Only 3% maintained none of the benefits.

A meta study published in 1999 by Tim Gilmore, based on 231 children with learning problems, showed significant improvement of:

- Linguistic skills
- Psychomotor skills
- Social skills
- Personal skills
- Cognitive skills
- Auditory skills

This study was based on the result in centres in Toronto's Tomatis Centre, a study done at University of Ontario where Dr. Byron Rourke studied 25 children with learning disabilities over a period of one year; a study done at the North Shore University Hospital by Dr. Barbara Wilson who followed 26 children with very poor language skills over a period of 9 months; a study done at the Ontario Institute for Studies in Education, who followed 32 children between eight and twelve who were clearly underachieving; and a study by Peter Mould, Chief remedial teacher of Brickwall House in East Sussex, who spent two years following a group of severely dyslexic boys between 10 and 15 years of age. For more details of this research visit www.tomatis.com.

Another Canadian research summed up the following benefits:

- A significant increase in IQ
- Better reading skills
- More perceptual processing
- Increased academic skills
- A general sense of adjustment
- More developed communication skills

In South Africa De Bruto conducted a study in the Witrand Care and Rehabilitation Centre. It was an interesting test where initially three random groups of children with some severe developmental delay were created. The first group received Tomatis-based auditory stimulation as well as sensory motor stimulation. The second group were given traditional music therapy and the same sensory stimulation, and the third group received none of the above.

Psychological tests included the Bailey Scales of Infant Development and a measure of responsiveness. The results indicated that both experimental groups showed an increase in mental age, but the group receiving Tomatis-based training scored significantly better. Whereas no significant differences were found in terms of general responsiveness, there was a statistical significant reduction of self-directed responses and an increase of more object-related responses in those children doing Tomatis. For more information on this and other studies visit www.tomatis.com.

Some French schools have begun to use the Tomatis Listening Programme with funds from the French Ministry of Education. No governmental body has ever done that in any other country (unfortunately). In England an experiment was done with some selected inmates which was quite successful, but did not get any further funding which again is a pity since it is a well known that

over half of the prison population - not just in England of course - are dyslexic.

Dyslexia is an umbrella term covering severe difficulties with reading, writing and organisational skills and poor short-term memory. Once dismissed as a middle-class excuse for underachievement, it is now recognised as a genuine disability. With an average of 10 - 15% of recognised dyslexia in the average population, it is relevant to question why this figure becomes an average of 52 - 60% in prisons. Other tests have shown that dyslexic people are generally brighter than average - so there is quite a disparity between the offenders' apparent intelligence and their ability to read, write and achieve in the school system. Would it not be wise to do something about that by making sure that these children with dyslexia get the help they need and prevent them from feeling isolated or stupid?