

Genius brain

Gutnik Vanessa Vasilyevna, Gotkovich Danuta Anatolyevna

Belarusian State Medical University, Minsk

Tutor(s) – Kostiouchkina Oxana Mikhailovna, Belarusian State Medical University, Minsk

Nowadays the idea of being “genius” has held many people’s attention. A genius is a person who demonstrates exceptional intellectual and creative abilities. In other words, geniuses are not only intelligent but also able to make a break-through in some field of science or art. There are many examples of genius across the ages: Leonardo da Vinci, Wolfgang Amadeus Mozart, Albert Einstein. Scientists have always been interested if the brains of genius people are very different from "normal" people.

The objective of the study was to investigate scientific literature devoted to the differences between genius brains and non-genius brains.

Different medical and scientific sources including foreign literature and websites were explored. The analysis of scientific articles and Internet resources was performed to systematize the information on the problem.

A preliminary comparison of a “genius” brain and a normal brain reveals a remarkable contrast. In the brain of a genius, a clearly marked lean toward short or long neuronal processes was noted. Some researchers have shown that the cerebral cortex of some people can perform unique functions that are not available to other people. It means that there is a structural determination of brain functions expressed in the number of neurons that solve the same problems in the brain of different people. The thalamus acts as a filter of information in our brain, which lets more thoughts come through. The genius brain has been established to have a thicker and greater amount of gray matter; moreover, the gray matter is organized in folds that are more intricate. Researchers found more communication going on between the left and the right hemispheres of genius people, which one might expect in people who are highly creative. More flexibility in their thought processes and more contributions from different parts of the brain are noted. Neuroscientists have discovered that these neural connections are not only more active, but also more complex in genius brains.

Advances in genetic research now make it possible to examine human traits at the molecular level. Over the past several decades, scientists have been searching for genes that contribute to intelligence, behavior, and even unique qualities. Anatomical, neurobiological and genetic potentials do not predict actual accomplishment. Social and cultural environment is considered to influence the development of a genius brain. However, the inner mechanisms of the brain of a genius are still something that has scientists confounded.