

4 Common Myths About the Human Brain

We know that the human brain is special, how could it not be? But in what ways is it truly special?

Neuroscience is here to debunk some popular myths about the human brain and what makes it so unique when compared to the brains of other animals.

Here are four myths about the human brain and the truth behind them:

The human brain contains 100 billion neurons

100 billion neurons might sound like a lot to you or it might sound like not so much. Either way, this number gets tossed around quite often when it comes to trying to measure the power of the human brain.

Neurons are at the core of the nervous system. They are cells that have tendrils extending out of them every which way, sort of like tree branches. They are what the brain uses to process information, coordinate actions, and control our bodily functions that operate subconsciously.

Throughout different textbooks and scientific articles, journals, and magazines, the number of neurons in the human brain often gets cited as being 100 billion.

In actuality, the human brain contains close to 86 billion neurons. And while a difference of 14 billion neurons might not seem like a lot, it is the same number of neurons that a baboon brain has, or about half of what a gorilla has, so it's actually quite significant.

Bigger is better

The size of a brain in any animal is not particularly useful for trying to determine the actual power of the brain.

Related species might have correlations between brain size and functional cognitive capacity, but when comparing different species, this argument doesn't stand on its own.

For example, a cow's brain is much larger than any type of monkey's brain, but they show much less cognitive capability than practically any sort of primate.

When it comes to humans, the best way to compare brain size to brain power is by looking at the brains of larger mammalian species, like the whale or the elephant. On average, a human brain weighs about three pounds, while a sperm whale's brain can weigh up to 17 pounds. Which begs the question, if size determines brain power, then why are whales not cognitively superior to us?

The human brain is the largest brain relative to body size

This myth has been around for quite some time, as Aristotle wrote in 335 BC: "Of all the animals, man has the brain largest in proportion to his size." While this might seem to make sense because of our perceived brain power compared to other species, the human brain-to-body ratio is actually quite similar to other species.

At 1/40, our ratio is much larger than the elephant's, which comes in at 1/560. But when compared to a mouse, it's about the same, and when compared to most birds, it's even less, as they sit around 1/12.

Bigger brains contain more neurons than smaller brains

While it's quite obvious that brain size changes from species to species, density of neurons was thought to be constant across different orders of mammals. This notion is actually quite far from the truth; it was found that the brains of different mammals scale differently when it comes to size and neuronal density.

Primate brains increase in size at the same rate as they gain neurons. Rodent brains increase in size faster than they gain neurons. And when it comes to insectivores, their cerebral cortex and cerebellum grow faster than they gain neurons.

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