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## **Bigger Brain Means Longer Life**

### *The case of humans confirms it*

It seems that a big brain does not mean only higher intelligence, but also a longer life, according to a new research published in the Journal of Human Evolution. The largest brain of a terrestrial animal is that of the elephant, weighing 10.5 pounds (4.78 kg). And the elephants are known to live up to 60 and more. Still, the brain of the elephant makes up for less than 0.1% of its body weight. Human brain has an average weight of 2.7 pounds (1.2 kg), making 2% of our weight, being the largest brain in the animal world, compared to body size. "There's got to be a benefit to this big brain, because big brains are really expensive to grow and maintain, energetically expensive," said lead researcher Nancy Barrickman, a graduate student at Duke University's Department of Biological Anthropology and Anatomy. Primates seem to compensate growing large brains with living a longer life, ensured by their more intelligent behavior. The team compared brain sizes and other developmental traits in 28 primate species, and the results were clear: primates with larger brains matured more slowly. The study was made on wild populations, on the basis that captive individuals mature more rapidly. For humans, the team looked at the Ache, a tropical forest culture in eastern Paraguay. "In order to pay off all that time you spent growing up, either you live a long time and have lots of kids over that life span, or you reproduce really fast," said Barrickman. The results revealed that a larger brain was connected to increased longevity rather than a faster breeding rate. More brain capacities may allow the primates to learn complex foraging methods and to increase predator avoidance and social skills. One example is aye-aye, the lemur with the relatively largest brain of all. This specialized animal detects insect larvae by tapping on tree trunks and listening with their huge ears for betraying sounds of a possible prey. Then, the animal uses a special extremely elongated and thin finger to extract the grub from the tree bark or trunk. "It takes a year-and-a-half to learn it, and the babies need to spend a lot of time watching the mom," said Barrickman. Humans followed the rule of big brain and longevity, but break the rule of slower breeding. In the hunter-gatherer groups, women give birth at average intervals of just 3 years. "In a hunter-gatherer [society], three years is short. You've got a three-year-old toddling around the African bush and another baby on your back. That's really difficult to juggle." Barrickman told LiveScience. However, the human longevity interferes here with the breeding age, since the mom has helpers, like grandmas, fathers, older siblings and other relatives. In fact, this is believed to be the reason why women live so long after menopause (most wild species females die soon after): in order to take care of grandchildren and to boost their own biological success.