

Neanderthal boy's skull grew like a human child's: study

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Skeleton of the Neanderthal boy recovered from the El Sidrón cave (Asturias, Spain). Credit: Paleoanthropology Group MNCN-CSIC

The first analysis of a Neanderthal boy's skull uncovered in Spain suggests that he grew much like a modern boy would, in another sign that our extinct ancestors were similar to us, researchers said Thursday.

The rare discovery of a child's partial skeleton was found among the remains of seven adults and five other youths at the 49,000-year-old archeological site of El Sidron.

The 7.7-year-old boy, known as El Sidron J1 according to the report in the journal *Science*, is the first juvenile Neanderthal to be studied from the area.

"What we see in this Neanderthal is that the general pattern of growth is very similar to modern humans," said co-author Luis Rios, member of the Paleoanthropology Group at Museo Nacional de Ciencias Naturales, during a conference call with reporters.

He was still growing when he died, and his [brain](#) was about 87.5 percent the size of an average adult Neanderthal brain, said the report.

A modern human boy would be expected to have a brain weight about 95 percent of an adult's by that age, it added.

An analysis of his vertebrae showed some had not yet fused. These same bones tend to fuse in contemporary people at a younger age, between four and six.

Longer growth period

Adam Van Arsdale, associate professor of anthropology at Wellesley College who was not involved in the study, described the differences between Neanderthals and humans in the paper as "subtle."

The study is "an important contribution to our understanding of human evolution," and "consistent with a now vast and growing body of research that demonstrates the similarities between Neandertals and living humans," he told AFP.

It also sheds new light on the history of human development. Neanderthals evolved separately—in western Eurasia—from humans who emerged from Africa, but they had plenty in common.

Neanderthals made art, practiced rituals, buried their dead and interbred with modern humans before they went extinct some 35,000 years ago.

Neanderthals are known to have had much larger skulls than people do today, and possibly larger brains, although this did necessarily make them smarter.

But little is known about how Neanderthals got this way. One theory is that they grew up faster—that Neanderthal kids reached adult size more quickly than we do.



(left to right) Antonio García-Tabernero, Antonio Rosas and Luis Ríos beside the Neanderthal child's skeleton. Credit: Andrés Díaz-CSIC Communications Department

Previous studies suggesting this path have relied mainly on dental clues.

The latest study is based on a more complete specimen. The Neanderthal child's skeleton included 36 percent of his left side, parts of his skull along with baby and adult teeth.

After studying his remains, researchers believe that instead of simply outpacing contemporary people in brain growth, Neanderthals may have grown up over a longer period of time.

"One mechanism of growing a larger brain would be expanding the period of growth," Rios told reporters.

Mysterious death

Just how the Neanderthal child died is a mystery.

Scientists have found no evidence of disease, and described him as "sturdy," weighing 57 pounds (26 kilograms) and standing 3.6 feet tall (1.11 meters).

But his bones also contained marks similar to other remains at the cave, where other studies have suggested cannibalism may have been rampant.

"The bones have some marks, but we do not know the cause of death," co-author Antonio Rosas, chairman of the Paleoanthropology Group at Museo Nacional de Ciencias Naturales, told AFP.

Researchers also admitted there are limits to what can be inferred about the social aspects of Neanderthal childhood and development from the study.

"We have to be very cautious because we have studied one skeleton," said Rios.

Milford Wolpoff, professor of anthropology at the University of Michigan, agreed "that Neandertals may have had extended period of brain growth."

But he questioned the authors attempt to age the child so precisely.

"Age determination for dead people is at best an estimate, and giving an age estimate to two decimal places (they say 7.69 years of age) really

overstates the accuracy that is possible," said Wolpoff, who was not involved in the study.

He also questioned the comparison to [modern humans](#), since different rates of brain growth are common across various people and time periods.

Furthermore, assessments of Neanderthal brain size could be skewed high, because most of the specimens paleoanthropologists have belong to males, who were physically larger than females. This may lead us to believe Neanderthals were bigger on average than they actually were, he added.

Therefore, trying to derive much meaning from small skull size differences might be a fruitless endeavor, when the bigger picture is clear.

"Neanderthal brain growth may or may not be like any human population, but surely seems to fit within the normal human range," Wolpoff said.

More information: A. Rosas et al., "The growth pattern of Neandertals, reconstructed from a juvenile skeleton from El Sidrón (Spain)," *Science* (2017). [science.sciencemag.org/cgi/doi ... 1126/science.aan6463](https://science.sciencemag.org/cgi/doi/10.1126/science.aan6463)

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