

Modern Man's Shrinking Brain

By [Washington's Blog](#)

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We've repeatedly noted that [our brains are smaller than our ancestors](#).

This graphic summarizes some of the most interesting information:

MODERN MAN'S SHRINKING BRAIN

For millions of years the hominid brain has grown increasingly bigger. But for the last 10,000 years, the human brain has been shrinking at an alarming rate and no one really knows why.

BRAIN SIZE (cubic centimeters)

Average modern human brain size: ~1,350 cc

Timeline of hominid species: 4 Million, 3.5 Million, 3 Million, 2.5 Million, 2 Million, 1.5 Million, 1 Million, 500,000, 200,000, 100,000, 50,000, 10,000 years ago, Modern Humans.

BUT IN THE PAST 10,000 YEARS, BRAIN SIZE HAS DECREASED BY 150cc!
That's over 200,000 years of brain growth lost in just 10,000 years.

BODY MASS (kilograms)

Average modern human body mass: ~65 kg

Timeline of hominid species: 4 Million, 3.5 Million, 3 Million, 2.5 Million, 2 Million, 1.5 Million, 1 Million, 500,000, 200,000, 100,000, 50,000, 10,000 years ago, Modern Humans.

IN THE PAST 10,000 YEARS, BODY MASS HAS DECREASED BY 5 kg!
That's 30,000 years of growth lost in just 10,000 years.

THIS MEANS OUR BRAINS ARE SHRINKING FASTER THAN OUR BODIES.

If our brains shrank as close to our bodies we would have an average ball worth of brain matter.
If our bodies shrank as fast as our brains we would be about 45 lbs and weigh 64 lb.

DOES THAT MEAN WE ARE DUMBER?

Someone has tried to do a rough calculation between brain size and the encephalization quotient or EQ. EQ is the ratio between actual brain mass and predicted brain mass for an animal of a given size. The formula for EQ is $EQ = \frac{\text{Brain Mass}}{0.12 \times (\text{Body Mass})^{0.75}}$

THE UPS AND PLATEAUS OF EQ

Average modern human EQ: ~7.5

Timeline of hominid species: 4 Million, 3.5 Million, 3 Million, 2.5 Million, 2 Million, 1.5 Million, 1 Million, 500,000, 200,000, 100,000, 50,000, 10,000 years ago, Modern Humans.

Throughout hominid history, EQ has consistently risen.
BUT FOR THE PAST 20,000 YEARS, EQ HAS REMAINED THE SAME.

SO WHAT'S THE BIG IDEA?

No one really knows for sure why our brains are shrinking, but there are a few ideas:

EFFICIENCY

The smaller the brain, the fewer resources it needs to function. As primate-carnivore apes developed, forest primates and humans were able to support big brains and also the result: more efficient brains.

WARMER

In the past 100,000 years ago the earth started experiencing warmer winters which correlated with fast brain growth. Cold weather is thought to begeth bigger bodies and therefore bigger brains. Warming trends in the past 10,000 years have lowered modern bodies and therefore smaller brains.

DOMESTICATION

As a population became less aggressive, brain size decreased.

SOCIAL SUPPORT

As humans became dependent, those with smaller brains could survive with the help of others. Higher survival rate allowed smaller brains to populate the year past.

VISION

Our ancestors had bigger eyes and a larger visual cortex because great eyes are necessary for survival. But as social support increased, vision became less important. Those with smaller visual cortex had more resources available for social regions of the brain, but therefore "cheaper" of survival.

"The story written in our bones is that we look more and more peaceful over the last 50,000 years."
—Richard Wrangham, primatologist

"It's perfectly plausible that our modern brain is smarter in some ways, dumber in others, and more docile overall."
—Christopher Stringer, anthropologist

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