



ANTHROPOLOGY

Scientists discover when humans and dogs became friends

The relationship spans thousands of years, but experts might have pinpointed the first connection

Dogs have been close four-legged friends of people as far back as we can remember, but exactly how long has this partnership been going? Scientists might finally know the answer, thanks to a new study on archaeological remains from Alaska. The research suggests

the close relationship between humans and the ancestors of today's dogs began 12,000 years ago.

"We now have evidence that canines and people had close relationships earlier than we knew they did in the Americas," said the study's lead author François Lanoë, an assistant research professor at

the University of Arizona School of Anthropology.

"People who are interested in the origins of the Americas want to know if those first Americans came with dogs. Until you find those animals in archaeological sites, we can speculate about it, but it's hard to prove one way or another. So, this is a significant contribution."

In a 2018 archaeological study, the same scientists discovered the lower leg bone of an adult canine at a site in Alaska. Radiocarbon dating showed that the canine was alive 12,000 years ago, near the end of the Ice Age.

More recently, another excavation by the same team in June 2023 unearthed an 8,100-year-old canine jawbone at a nearby site.

For the new study, the scientists ran chemical analysis on these bones. They identified salmon proteins, suggesting the canines had regularly eaten fish. This wasn't typical of canines at the time as they hunted land animals exclusively, hinting at human interference.

While the team is confident that this is the earliest known relationship between humans and dogs, it's too early to know for sure. This is due to a key sticking point: "The existential question: what is a dog?" said Dr Ben Potter, a co-author of the study and archaeologist with the University of Alaska Fairbanks.

Though the creatures acted and looked like dogs, they may be too old to be genetically related to the dog populations that we know and love today.

DIET

Intermittent fasting may reduce hair growth

The eating plan brings potential benefits, but luscious locks may not be one of them

While intermittent fasting may help you lose weight, the eating plan – in which you restrict your eating to certain hours – could also slow your hair growth. That's the conclusion drawn from a recent experiment performed on mice by a team of researchers from Westlake University in China.

The mice on the time-restricted eating regime did show improved metabolic health, but also slower hair regeneration – an effect that might also occur in humans. Humans have a slower metabolic rate and different hair growth patterns, though, so the effect may not be as severe.

"We don't want to scare people away from practising intermittent fasting because it's associated with

NEUROSCIENCE

Secret behind your brain's huge size revealed

Your gut may help your body keep up with the brain's energy demands

A new study has finally provided a reason for why human brains evolved to be so large: the microbes in our guts. The researchers behind the study think these may have helped our bodies to produce enough energy over time to encourage the growth of our most complex and important organ.

There are more than 100 trillion microbes in our guts, which is at least double the number of cells in our bodies. In total, the human gut microbiome weighs approximately 2kg (4.4lbs), about the same as a large pineapple.

The research found that organisms with larger brains compared to body size can – thanks to their digestive microbes – consume more food and generate more energy than those with smaller brains.

Humans may not have the biggest brains – that coveted title goes to another mammal: the sperm whale, which has a brain that's five times bigger than ours. But humans have a much larger brain-to-body ratio – sperm whales are around 450 times heavier than an average US male adult.

The new research involved implanting gut microbes from one of three animals – two large-brained primates (humans and squirrel monkeys) and a smaller-brained primate (the macaque, an African monkey) – into mice.

Researchers observed that mice with gut microbes from the larger-

brained species produced more energy to power their brain activity. They also ate more and created higher levels of glucose, which the body uses to fuel energy production.

The mice with gut microbiota from the smaller-brained primate, on the other hand, stored more energy as fat.



"In total, your gut microbiome weighs approximately 2kg, about the same as a large pineapple"

a lot of beneficial effects. It's just important to be aware that it might have some unintended effects," said Dr Bing Zhang, one of the researchers involved in the study.

For the study, mice were shaved and then subjected to different intermittent-fasting regimes. While some kept a normal diet, the other mice were given access to food for eight hours, followed by 16 hours of

fasting. While the mice that followed normal eating routines grew their hair back after 30 days, the fasting group showed only partial hair growth after 96 days.

The researchers think that stress on hair follicle stem cells could be behind the effect. Hair follicles switch between active and dormant phases, and hair grows when the follicles are active. In the control

group, the follicles became active around day 20 and stayed active. But in the intermittent-fasting mice, the follicles died off entirely.

The team also conducted a small trial on 49 people. Those on an intermittent-fasting regime saw hair growth reduced by an average of 18 per cent, but the researchers caution that results would vary hugely between people.