

## Re: Body Temperature

**Source:** <http://sci.tech-archive.net/Archive/sci.med/2004-07/0002.html>

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*bae\_at\_cs.toronto.no-uce.edu.yyz*

**Date:** 06/30/04

Date: 30 Jun 2004 15:12:10 GMT

In article <7e74e0p51188j1vg02lmvb15oemd4teiol@4ax.com>,

Carey Gregory <tiredofspam123@comcast.net> wrote:

>*bae@cs.toronto.no-uce.edu.yyz* wrote:

>

>>*The question of why normal human body temperature is significantly  
>>lower than that of other mammals is an interesting one. Perhaps it has  
>>something to do with our remarkable longevity, several times longer than  
>>most other large mammals.*

>

>*Thought #1- During the vast majority of human evolution, life spans weren't  
>several times longer.*

I wasn't suggesting that our relatively low body temperature derives from selection for longevity. I was wondering (not even speculating) whether the two phenomena might be related.

Most animals have very short life expectancies in the wild, mainly due to predation, especially on the young and the sick, weak and aging.

I should have qualified "lifespan". I mean maximum lifespan under ideal conditions. That would be humans with good nutrition and good medical care, no predation or injuries, animals in well-run zoos or well cared for pets. Under these conditions, most people will live to 80 or so, and the record seems to be 122. House cats are now living into their early twenties, and although I don't know the maximum, IIRC cattle and horses can often survive to thirty or more under good conditions.

Still, we seem to routinely live several times longer than other mammals of comparable size under comparably good conditions.

>*Thought #2 - Okay, interesting thought, so what's the normal temp of  
>elephants and other long-lived mammals?*

>

>*I'm too lazy to look it up myself. And besides, it's your hypothesis, not  
>mine.... ;-)*

Okay, I did some Actual Research, and it appears that while humans (and some of their primate relatives) are near the lower end of the range for

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placental mammals, down there with bats and the whales, I was deceived by my limited knowledge — ruminants (cows, goats, sheep) and house cats appear to be nearer the upper end of the range. Sorry, I've never taken the temperature of any other mammals, AFAICR.

Placental mammals have normal body temps between about 36–40C, and this is unrelated to body size. Exceptions are animals that are hibernating, bats which conserve energy in the daytime by letting their body temps drop to the ambient, and the eland, a large antelope that survives high temps while conserving moisture by letting its body temp rise as high as 42C, cooling only its brain by a special heat exchange network of blood vessels in its mouth and nose.

Elephants have a body temp of about 36.9. Their ears have a heat exchange network of blood vessels and the temp difference between blood entering and leaving the ear may be as much as 1C. They flap their ears or orient them relative to wind to cool down. Elephants have a lot of weird anatomical features – worth reading about.

So I guess I'll have to abort this potentially active usenet discussion, harpooned by facts. I retract my hypothesis and cease to speculate, lest I turn into an AP clone.