T. rex teeth indicate it ran as warm as an elephant

For most of the last century, *T. rex* was pictured as a sluggish, tail-dragging reptile that had to warm up in the sun before it could go anywhere. Then, further research changed that view, replacing it with the active, bird-like animal shown in the movie *Jurassic Park*. But whether *T. rex* used warm blood to power that activity remained a question. Now we might have gotten closer to an answer.

A team of researchers led by Randon J. Flores and Robert A. Eagle, geochemists at the University of California, Los Angeles, has measured the *T. rex* body temperature by analyzing its teeth. This dental thermometer read about 36° Celsius—roughly the body temperature of a modern elephant.

Dental thermometry

Paleontologists have long argued about dinosaur physiology based on indirect evidence like bone microstructure, growth rates, and where fossils turn up on the map. Some studies suggested many dinosaurs were endotherms, generating their own body heat like birds and mammals. Others argued that each lineage may have had its own thermal strategy.

Earlier attempts to measure *T. rex*'s temperature relied on oxygen isotopes in bones and teeth. The problem was that those ratios depend not only on temperature but also on the composition of the water present in the animal's body, which was something nobody could pin down for an extinct creature.

Flores, Eagle, and their colleagues got around that with a

technique called clumped isotope thermometry, which Eagle introduced to dinosaur research over a decade ago in work on Jurassic sauropods. Carbonate minerals in tooth enamel contain rare, heavy isotopes of carbon and oxygen (carbon-13 and oxygen-18). How often these heavy atoms bond with each other, or clump together, depends on the temperature at which the mineral formed. Since tooth enamel forms inside a living body, the number of those clumped bonds records the animal’s body temperature, regardless of the water content in its body.

https://arstechnica.com/science/2026/09/t-rex-teeth-indicate-it-ran-as-warm-as-an-elephant/