

News & Comments

Human Brain temperature is hotter than core body temperature

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It has been recognized for a long time that irregular body temperatures signal the presence of disease. Disrupted circadian rhythms and local warming at sites of injury or infection are examples of temporal and spatial dynamics of temperature that contain additional diagnostic information.

But brain temperature is hardly measured directly as it would require invasive technique, so it is presumed that brain temperature would match core body temperature, without any brain-specific measurements.

A team of scientists measured diurnal, age- and sex-based brain temperature (TBr) variations, to determine the clinical significance of TBr mapping concerning traumatic brain injuries (TBI). They used cranial thermometry analysis by magnetic resonance spectroscopy (MRS) to estimate brain temperature.

To achieve normal TBr values, patients with brain injuries undergo several interventions.

The findings suggest that the brain temperature of healthy adults was 2 °C higher than the average brain temperature, which is 38.5 °C. Moreover, the brain temperature varies depending on the time of day, brain region, sex and menstrual cycle, and age. The deeper brain structures were warmer than 40 °C. All individuals' brain temperatures varied by almost one degree Celsius over the day, with afternoon brain temperatures being the highest, and nighttime brain temperatures being the lowest. Moreover, deep brain regions had the largest average increase in temperature over the 20 years, at 0.6 °C.

It is essential to investigate whether there is a link between the brain's ability to cool down and age-related brain disorders, according to scientists.

KEYWORDS

brain temperature, brain thermometry, daily, brain injury, mortality, Alcohol, Bladder, Brain, Coma, Electrode, Fever, Food, Grey Matter, Hospital, Hypothalamus, Imaging, Intensive Care, Laboratory, Menstruation, Molecular Biology, Nasopharyngeal, Ovulation, Research, Skin, Sleep, Spectroscopy, Thalamus, Traumatic Brain Injury

