We yawn to cool our brains: Study

Washington: Yawning cools the brain to improve arousal and mental efficiency, according to a new study. Researchers led by psychologist Andrew Gallup of State University of New York at Oneonta, US found that yawning is linked with thermoregulation, and in particular, brain cooling.

Sleep cycles, cortical arousal and stress are all associated with fluctuations in brain temperature, yawning subsequently functions to keep the brain temperature balanced and in optimal homeostasis.

According to this theory, yawning should also be easily manipulated by ambient temperature variation, since exchange with cool ambient air temperature may facilitate lowering brain temperature. Specifically, the researchers hypothesised that yawning should only occur within an optimal range of temperatures, ie, a thermal window.

To test this, Jorg Massen and Kim Dusch of the University of Vienna measured contagious yawning frequencies of pedestrians outdoors in Vienna during both the winter and summer months, and then compared these results to an identical study conducted earlier in arid climate of Arizona. Results showed that in Vienna people yawned more in summer than in winter, whereas in Arizona people yawned more in winter than in summer.

It turned out that it was not the seasons themselves, but that contagious yawning was constrained to an optimal thermal zone or range of ambient temperatures around 20°C. In contrast, yawning diminished when temperatures were relatively high. Massen said that while yawning functions to cool the brain, it is not functional when ambient temperatures are as hot as the body and when it can have harmful consequences. AGENCIES