Yawning is good for the brain

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You might see yawning as merely a sign of being tired or bored, but scientists have recently discovered it could actually help people to keep their brains healthy. They hope the study could help researchers better understand conditions such as migraines (very bad headaches).



All humans – and many animals – yawn, but scientists have never fully understood why. Until now, many believed yawning helps the body balance its oxygen levels or signals tiredness to others. Researchers from the University of New South Wales in Australia used MRI scanners (which use magnetic fields and radio waves to create pictures of inside a body) to study what happens when people yawn. Their findings suggest that yawning changes the movement of cerebrospinal fluid (CSF), a clear liquid that surrounds and protects the brain and spinal cord. CSF has several important jobs, including delivering nutrients, removing waste, and helping to keep the brain's temperature and pressure steady.

The researchers scanned the heads and necks of 22 healthy volunteers while they yawned, breathed normally, took deep breaths and tried to stifle yawns. Participants were encouraged to yawn by watching video clips of other people yawning – called "contagious yawning" (see panel). Because yawning and deep breathing seem to work the same way, researchers expected them to produce similar results. Instead, they found that while deep breaths move CSF towards the brain, yawns send it in the opposite direction. "We're just sitting there like, whoa, we definitely didn't expect that," scientist

Adam Martinac, one of the study's authors, told

New Scientist magazine. The study measured only contagious yawning, rather than "spontaneous yawning" (yawning independently of others).

Scientists also found that deep breaths and yawns both push more blood away from the brain, making room for fresh blood to enter; but yawning doesn't change the direction of blood flow, like it does with CSF. Together, the findings could indicate that yawning helps to clean out waste products or cool the brain, the researchers suggest.

The researchers also discovered that stifled yawns (when people start to yawn but stop themselves) last almost as long as normal yawns. So once a yawn begins, it's difficult to stop it completely.

Another surprising discovery was that every person seems to have a unique yawn style. Although participants followed a similar pattern involving the jaw, head and neck when they yawned, each repeated their own version of that pattern. This seems to confirm that yawning is an involuntary movement (one that we can't control). "It's almost like a fingerprint," Martinac said. "You could possibly identify someone just based on how they yawn."

Scientists at Nottingham Trent University in England have made a smart pillow sleeve to alert deaf people to an emergency. Many deaf people use bulky vibrating gadgets under their pillows, because they can't hear alarms. The sleeve is thin, flexible, and fits over a standard pillow. Inside are four tiny buzzing motors that link wirelessly to smartphones and alarms. The pillow vibrates when there's a phone call, fire or burglar alarm. The alert vibrations have different patterns so users can tell them apart.

The Week

A volunteer cheers up children in hospital during Covid lockdown. By Orna Naor.

L. Chaussee spotted this abandoned petrol station in Nevada, US.