Health & Medicine

A Sniff Test for Dementia, and Other Research Findings

Winter 2024-25

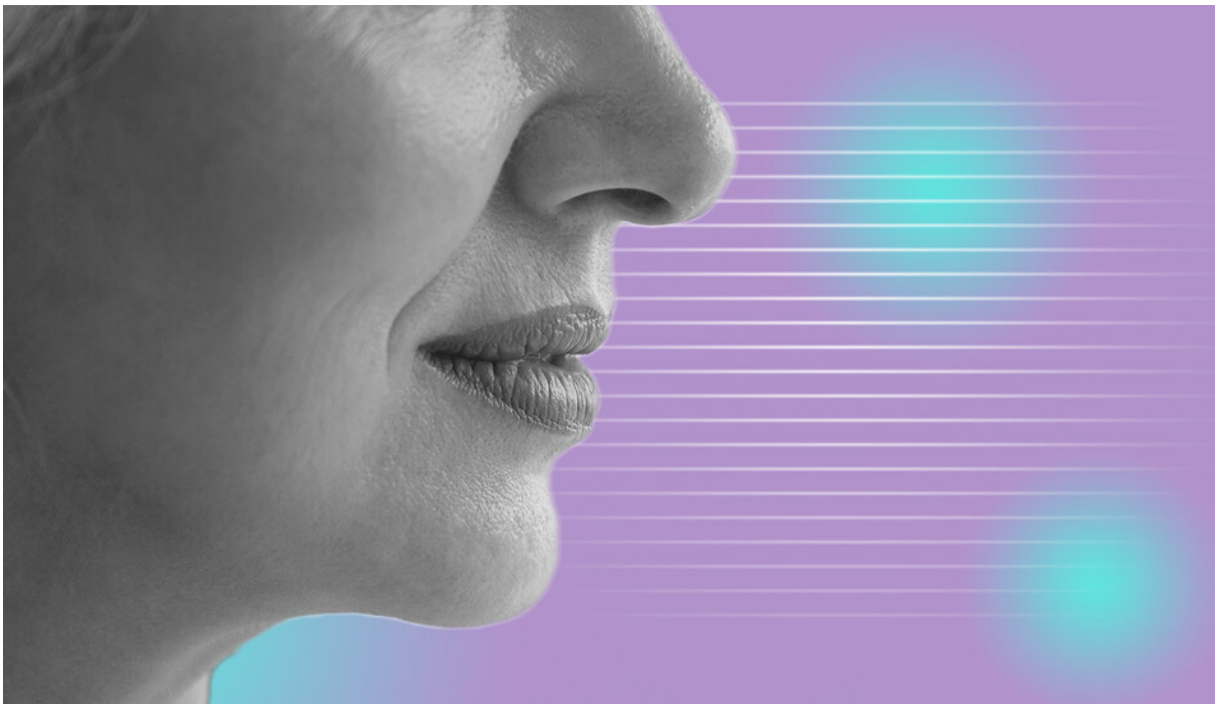


Photo-illustration by Columbia Magazine (fizkes / Shutterstock)

A simple smell and memory test can predict Alzheimer's risk as effectively as costly brain imaging, offering hope for earlier diagnosis and intervention, according to clinical research led by Columbia psychiatrist and neurologist Davangere P. Devanand.

Genes gone wild

Columbia biochemist Samuel Sternberg '07CC and graduate student Stephen Tang have discovered that bacteria possess free-floating genes outside their chromosomes, challenging long-standing assumptions about how DNA is organized

and stored. They are now investigating whether similarly mobile, autonomous genes may exist in humans.

Sweetgum smog surprise

While urban tree-planting initiatives offer many benefits, overreliance on oaks and sweetgums can actually worsen air quality, according to a study by Columbia atmospheric chemist Róisín Commane. The trees release volatile compounds called isoprenes, which on hot summer days combine with vehicle emissions to produce ground-level ozone, a key component of smog.

Power up your bandage

Columbia engineers led by Samuel Sia have created a high-tech bandage that generates an electric field to accelerate healing in chronic wounds, such as diabetic foot ulcers. Activated with a simple drop of water, the bandage speeds healing by up to 30 percent, encouraging blood-vessel growth and reducing inflammation.

Cosmic cradle

New research led by Columbia astronomer Jane Huang reveals that planets can form in more extreme environments than previously known, including in the high-radiation backyards of massive stars.

The silent GDP killer

Mental illness costs the US economy more than $280 billion annually in lost labor productivity and reduced consumer spending, which is similar to the impact of a typical recession, finds Columbia Business School economist Boaz Abramson. His research suggests that expanding access to mental-health services would fuel growth and ultimately save taxpayer dollars.



Guide to school abbreviations