

This Is Your Brain ... And This Is Your Brain on Calcium

Misplaced your wallet? Forgotten your niece's birthday *again*? You might be able to blame your forgetfulness on calcium

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Abstract: Most older brains don't learn or remember as well as younger ones do. One possible reason is that rising calcium concentrations within neurons hamper memory and learning. Researchers have accumulated a small pile of supporting evidence for the calcium hypothesis, but key questions remain about calcium's interaction with other mechanisms of aging and its effects on neuron activity.

They're known as senior moments: those embarrassing and frustrating mental stumbles that happen more often as we get older. We misplace our checkbook, or forget where we parked our car at the mall, or can't recall who won the Oscar for best actor the day after watching the entire awards extravaganza. Lapses like these don't necessarily herald the onset of Alzheimer's disease, but they do demonstrate that--for many people, at least--age corrodes the ability to learn and remember.

No one can say for sure what sabotages the aging brain, but some neuroscientists blame elderly forgetfulness on increasing calcium concentrations within the organ's neurons. Over the last 20 years, researchers have gleaned intriguing circumstantial evidence backing the so-called calcium hypothesis of brain aging. They've shown that some parts of the cell's calcium-regulating machinery become sloppy as we age, and they've identified calcium-driven changes in how older neurons respond to stimulation that could lead to mental sluggishness.

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