

THE WAITING ROOM



THIS WAY IN

Common Drugs May Cause Cognitive Problems

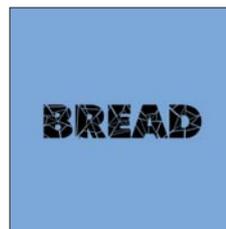
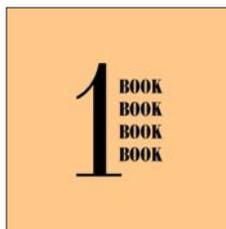
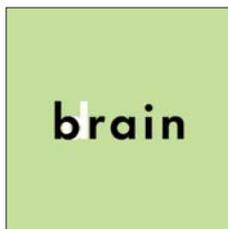
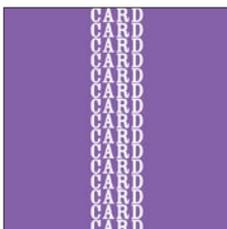
Anticholinergic drugs are prescribed for a wide range of medical conditions, such as acid reflux, Parkinson's disease, high blood pressure, and urinary incontinence. These drugs work by blocking a chemical called acetylcholine that is required for memory. Now, some scientists worry that these drugs may seep into the brain and alter cognition.

This discovery started with a simple observation from Jack Tsao, M.D., a neurologist at the Uniformed Medical Services University in Bethesda, MD, and his colleague Kenneth Heilman, M.D., a neurologist at the University of Florida in Gainesville.

Dr. Tsao was examining a 74-year-old woman who had suddenly started having hallucinations and memory problems. Before conducting extensive tests to see whether she had Alzheimer's, he looked for any possible new medicines that could be responsible for her acute symptoms. She had recently begun taking 2 milligrams of tolterodine (Detrol), a medication for overactive bladder. The symptoms seemed to coincide with the medication. Dr. Tsao asked her to stop taking it, and within weeks, her symptoms disappeared—specifically, the ability to lay down memories. Dr. Tsao presented the findings recently at the American Academy of Neurology annual meeting in April.

NEUROBICS

Can you figure out the common expression represented by each picture?



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SEE ANSWERS ON P. 12

PILLS AND IMAGING: ISTOCKPHOTO

Cholinesterase inhibitors like donepezil (Aricept) have been used to treat Alzheimer's disease for nearly two decades. These drugs have the opposite effect of anticholinergics—they inhibit the enzyme which breaks down acetylcholine, allowing more of it to be used by the brain. And while it's been known for some time that older people with dementia should not be given anticholinergic drugs because their symptoms worsen, no one knew what the effect would be in a population of normal people.

Dr. Tsao contacted David Bennett, M.D., and Raj Shah, Ph.D., of Rush University in Chicago, IL, who had been following cognitively healthy priests and nuns for more than 15 years as part of the Rush Religion Orders Study to identify possible risk factors for dementia; 870 had been followed up at least once over a seven-year period. Their information came with complete medical work-ups and a battery of neuropsychiatric tests. In addition, every medication they took throughout the study was logged.

The question was simple: Were people who began taking medicines with anticholinergic properties scoring worse on cognitive tests during the time they took these medicines?

The answer, they reported, was yes. They compared 191 people who had never taken medication with anticholinergic properties and 679 who had. The rate of cognitive decline after they started taking these medicines was more rapid. Their performance scores fell off 1.5 times more quickly than those who had not taken any of these types of medicines over the follow-up period. They did not find an increase in the number of people diagnosed with Alzheimer's.

"These drugs are not supposed to cross the blood-brain barrier," said Dr. Tsao. "But clearly if they are interfering with memory they are probably entering the brain. We believe the effect may be widespread." In fact, they did find more of a change in cognitive scores among those who were taking the medicines with the strongest anticholinergic effects, such as the ones that were used to treat overactive bladder.

"We could be moving into cognitive decline earlier than expected. It has tremendous implications," Dr. Heilman says. Other studies need to be done to replicate their finding. In addition, the study was not large enough or long enough to test whether these medicines would increase a person's risk of developing Alzheimer's. However, Dr. Tsao says, "Physicians should be aware that some of these medicines interfere with cognitive functioning" even in mentally healthy patients. —*Jamie Talan*

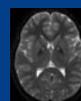
FREQUENTLY ASKED QUESTIONS

Brain Imaging

In June 2007, a group of medical experts convened at Stanford University to discuss improved technology for imaging patients with "disorders of consciousness," such as vegetative and minimally conscious states, that can occur after brain injury. "One of the challenges we identified is responding to desperate calls from families requesting an fMRI scan for a loved one in a limited state of consciousness," says Judy Illes, Ph.D., formerly at Stanford and now professor of neurology and Canada Research Chair in neuroethics at the University of British Columbia in Vancouver. Dr. Illes and her colleagues developed this FAQ for families.

1 What is brain imaging?

Brain imaging allows doctors to view and monitor areas of the brain. Images can be produced using structural imaging techniques—magnetic resonance imaging (MRI) and computed axial tomography (CAT)—or functional imaging strategies such as positron emission tomography (PET) and functional MRI (fMRI). Structural imaging identifies abnormalities such as strokes, bleeding, and tumors, while functional imaging evaluates how the brain is working. These measurements are based on the flow of blood and levels of oxygen in specific brain regions.



MRI



CAT



PET



fMRI

2 Can brain imaging be used to determine whether someone is conscious?

There are currently no diagnostic tests capable of detecting whether someone is conscious. Specialized rating scales and imaging techniques have been developed to investigate the likelihood that someone is processing information consciously, but neither approach provides definitive evidence of consciousness or unconsciousness. Doctors currently rely on bedside exams to diagnose disorders of consciousness.

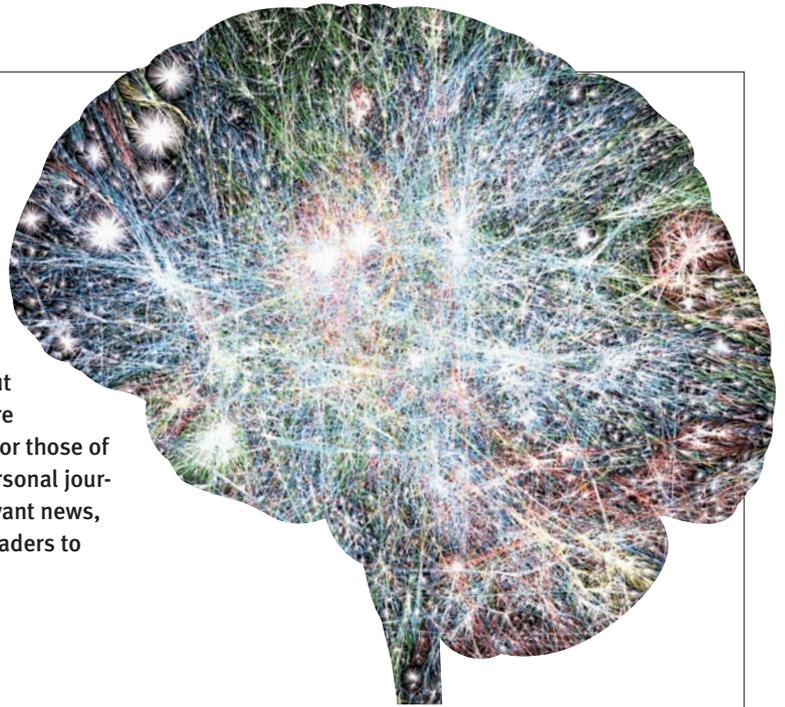
3 Should I enroll a family member who has brain injury in an imaging study?

Find out what is involved before enrolling your family member by talking to your doctor and the scientist requesting your consent. Most studies pose minimal risk to the patient, whose participation can add important knowledge to the understanding of disorders of consciousness. Knowledge is gained every day about how the brain works, so you can expect ever-improving diagnosis of and treatment for brain injury. However, these studies are experimental, which means you can't expect to learn new information about the person's condition or to use the information to make decisions about his or her care. Make the choice by thinking about whether the person would have volunteered. —*Mike Smolinsky*

ON THE WEB

Neuro Blogs

From celebrity gossip to favorite lunch spots, nowadays almost anyone with a computer is blogging about something. Want to read about topics you actually care about? Here are a few interesting neurology-related ones. For those of you who are new to the blogosphere, a blog is an online personal journal which often also contains the blogger's reaction to relevant news, links to articles and Web sites of interest, and a place for readers to respond to what the blogger writes.



The Daily Headache
When Kerrie Smyres was forced to quit her job because of chronic daily headaches, she knew she needed to find a way to remain productive and help

others. She found her answer in 2005 when she started TheDailyHeadache.com. Smyres writes candidly about the ups and downs of life with migraines, such as her experiences with alternative treatments.



Mary's Place
Mary Lockhart was diagnosed with early Alzheimer's dementia at the age of 55 and gave up her job running a day care for infants. Now she uses her blog, maris113.blogspot.com, as a way of journaling moments she'd like to remember and reaching out to others affected by this "lonely disease." She also hosts live chats for other people with Alzheimer's or other forms of dementia: alzinfo.org/chatrooms.

Sleep Expert

J. Steven Poceta, M.D., is a neurologist and sleep disorders specialist whose blog, revolutionhealth.com/blogs/stevepocetamd, offers information on everything from anti-snore shirts to the link between obesity and narcolepsy.



Life with MS

Travis Gleason blogs about the big issues, such as stem cell research and the genetics of MS, as well as the personal, like bladder and bowel problems (blog.healthtalk.com/multiple-sclerosis/life-with-ms). He also hosts MS Web casts for HealthTalk.com.



BrainTalk Communities

If you can't find a blog that relates to your particular condition check out BrainTalk Communities, one of the most comprehensive neurology support groups on the Web: brain.hastypastry.net/forums.



—Stephanie Cajigal

NEUROBIC ANSWERS FROM P. 10: STACKED CARDS; BRAIN DRAIN; ONE FOR THE BOOKS; BREAKING BREAD; HAND TO MOUTH. GO TO MINDWAREONLINE.COM FOR MORE WORD WINKS.