

Established in 1811, MGH is the premier teaching hospital of Harvard Medical School.

# **In This Issue**

### IN THE NEWS

- Dementia Rates
   Declining in United
   States and Europe
- New Blood Test
   Shows Promise as
   Alzheimer's Predictor
- Happiness and Physical Health Go
   Hand in Hand

Page 2

### MIND

Virtual Visits Conveniently Expand Reach of Mental Health Professionals

Page 4

## MOOD

Research Shows Volunteering Improves Well-Being Page 6

### **MEMORY**

Manage Your Medications to Prevent Memory and Thinking Skills Problems

Page 3

## **ASK DR. FAVA**

How Common Is Depression?... Does MCI Affect Mood?... What Are My Odds of a Second Stroke?

Page 8

# MASSACHUSETTS GENERAL HOSPITAL



Volume 16, Number 10 • October 2020

Maintaining Mental Fitness From Middle Age and Beyond

# **Better Sleep Leads to Better Memory**

How getting enough sleep can help you learn and recall information more easily and process memories more efficiently overnight.

Some of the first strategies that come to mind when you're thinking about how to improve your memory may include visualizing information, list making, rehearsing, or even healthy lifestyle choices like more exercise and a balanced diet. But one of the most overlooked, yet critical, steps to better memory is simply getting a good night's sleep.

"It used to be thought that sleep was mainly to rest and restore the body and the mind," says Dara Manoach, PhD, a professor of psychology at Harvard Medical School and a research

scholar at Massachusetts General Hospital. "But over the last 20 or so years, this view has radically changed. We now know that sleep plays an essential role in health, learning, memory, and emotional well-being."



Getting seven to eight hours of sleep each night may help improve memory and provide many other health benefits.

There is still much to learn about the relationship between sleep and memory, but research in recent years continues to underscore the importance of sufficient sleep in order to learn new information, consolidate it, and then recall it when needed.

# **Sleep and Attention**

A common complaint among high school teachers is that their students don't get enough sleep the night before, so they are unable to pay sufficient attention in class the next morning and focus on new information. But poor concentration after a night of little sleep—or after count-

less nights of chronic sleep deprivation—can affect anyone at any age.

"It's almost as if your brain is too full to absorb anything else," Dr. Manoach says.

continued on page 7

# PREDICTING WHO WILL HAVE A STRONG MEMORY IN THEIR 90S?

Ider adults who are mentally sharp in their 90s are often praised for their cognitive health. But these impressive individuals also inspire questions: Why do some people avoid cognitive decline, even in their 90s, when they have amyloid plaques in the brain? And why do other individuals in their 90s never develop any of these plaques that are hallmarks of Alzheimer's disease (AD)? A buidup of amyloid protein in the brain is a common characteristic of AD. In a study published recently in Neurology, the journal of the American Academy of Neurology, researchers identified some factors that may help explain such well-preserved thinking skills. For example, older adults who performed well on thinking and memory tests at the start of the study (when many of them were still in their late 70s) were less likely to develop cogni-

tive problems later on, even if they had amyloid plaques in the brain. This suggests that some people have a "cognitive reserve" that acts as a buffer against changes in the brain. Researchers also found that people with the APOE e2 gene variation were less likely to develop plaques than people without the gene. Of the modifiable factors associated with mental sharpness late in life, researchers found that people who never smoked were 10 times more likely to retain their thinking skills—even with plaques—than smokers. Also, adults who had high scores on a measure of blood pressure called pulse pressure (the systolic, or top number, minus the diastolic, or bottom number) were much more likely to have plaques compared with those whose pulse pressure scores were lower. MMM



### **EDITOR-IN-CHIEF** MAURIZIO FAVA, MD

Psychiatrist-in-Chief Massachusetts General Hospital

### **EXECUTIVE EDITOR JAY ROLAND**

# CONTRIBUTORS

DARA MANOACH, PHD JENNIFER GATCHEL, MD, PHD MOLLY COLVIN, PHD ERIC KIM, PHD OLIVIA OKEREKE, MD UMA NAIDOO, MD **EMILY TAN** 

#### ADVISORY BOARD

### DEBORAH BLACKER, MD, SCD

Director, Gerontology Research Unit Massachusetts General Hospital Professor of Psychiatry Harvard Medical School Deputy Chair and Professor in the Department of Epidemiology Harvard School of Public Health

### GREGORY L. FRICCHIONE, MD

Associate Chief of Psychiatry Director, Benson-Henry Institute for Mind Body Medicine Massachusetts General Hospital Professor of Psychiatry Harvard Medical School

### DAVID MISCHOULON, MD, PHD

Director, Depression Clinical and Research Program Massachusetts General Hospital Joyce R. Tedlow Professor of Psychiatry Harvard Medical School

### UMA NAIDOO, MD

Director of Nutritional & Lifestyle Psychiatry at MGH Director of Nutritional Psychiatry, MGH Psychiatry Academy Professional Chef, Culinary Instructor, Nutrition Specialist

### ANDREW A. NIERENBERG, MD

Thomas P. Hackett, MD, Endowed Chair in Psychiatry Director, Dauten Family Center for Bipolar Treatment Innovation Associate Director, Depression Clinical and Research Program Massachusetts General Hospital Professor of Psychiatry Harvard Medical School

### JONATHAN ROSAND, MD, MSC

Co-Founder and Co-Director, Henry and Allison McCance Center for Brain Health Member, Center for Genomic Medicine Massachusetts General Hospital Professor of Neurology Harvard Medical School

### ANTHONY P. WEINER, MD

Director, Outpatient Geriatric Psychiatry Massachusetts General Hospital Instructor in Psychiatry Harvard Medical School



Mind, Mood & Memory (ISSN: 1555-7308) is published monthly by Belvoir Media Group, LLC, 535 Connecticut Avenue. Belvoir Englander, Chairman and Norwalk CT 06854 Robert

CEO: Timothy H. Cole, Chief Content Officer: Philip L. Penny, Chief Operating Officer; Greg King, Chief Marketing Officer; Ron Goldberg, Chief Financial Officer; Tom Canfield, Chief Circulation Officer. ©2020

Postmaster: Send address corrections to: Mind, Mood & Memory, PO Box 8535 Big Sandy, TX 75755-8535

# **NEWS BRIEFS**

# Study: Dementia Rates Declining in the United States and Europe

The incidence rates of dementia in Europe and North America have declined by 13 percent in the past 25 years, according to a large study published recently in Neurology, the journal of the American Academy of Neurology. While it's true there are more people with Alzheimer's disease and other forms of dementia, that is because there are more older adults in Europe and North America. Researchers reviewed data from seven large studies involving more than 49,000 men and women. In 1995, a 75-year-old man had about a 25 percent chance of developing dementia in his remaining lifetime, according to the study's lead author, Albert Hofman, MD, PhD, chair of the Department of Epidemiology at the Harvard T.H. Chan School of Public Health. The researchers noted that men and women have equal dementia rates, but because women tend to live longer than men, there are generally more women than men with dementia in any given population of older adults. One curious result from the analysis is that the declining rates in Europe and North America were not mirrored in Asia, South America or, from limited data, in Africa. The researchers add that in the regions that experienced declining rates, the positive trend may be due in large part to modifiable factors such as higher education levels and a healthy lifestyle that helps control for cardiovascular risk factors.

# **New Blood Test Shows Promise as Alzheimer's Predictor**

A team of international researchers, led by scientists at Lund University in Sweden, has developed a simple blood test that appears to be able to detect the presence of phospho-tau217 (p-tau217), one of the toxic proteins in the brain associated with Alzheimer's disease. The test, which may be able to detect the disease in individuals 20 years before the onset of symptoms, was evaluated in 1,402 cognitively impaired and unimpaired adults in Sweden, Colombia, and the United States. In one part of the study, the test discriminated between people with clinical diagnoses of Alzheimer's and those with other neurodegenerative diseases with 96 percent accuracy. While follow-up trials are needed, the initial results are highly encouraging, the researchers report. Experimental blood tests that can detect beta-amyloid plaques, another characteristic of Alzheimer's disease, have also been showing promise in the past few years. Access to a simple blood test that can accurately detect Alzheimer's disease could lead to earlier and more clear-cut diagnoses of the disease, which in turn could lead to earlier treatment. Typically, Alzheimer's is diagnosed definitively after a person dies and the brain is examined for signs of tau, beta-amyloid and other signs of the disease. The researchers, who published their findings in JAMA, are hopeful that such testing may be possible in a clinical setting within the next two years.

## Study: Happiness and Physical Health Go Hand in Hand

Emotional and physical health are often thought of as independent characteristics, but research continues to underscore the effects of mood on cardiovascular function, pain, fitness, sleep quality, immune-system responses, and other aspects of health, including longevity. In a study published recently in the journal *Psychological Science*, researchers found that interventions to boost an individual's mood also had positive effects on self-reported physical health. Researchers divided a group of generally healthy adults between the ages of 25 and 75 into two groups. One group had 12 weeks of positive psychological interventions, such as sessions that helped them identify personal values, strengths, and goals. They also learned about emotion regulation and mindfulness, including training in identifying unhelpful and negative patterns of thinking. The final few weeks of the interventions addressed issues such as cultivating gratitude, improving social interactions, and engaging more with the community. None of the interventions covered diet, exercise or other topics related to physical health. Members of the other group—the control group—were told they were on a waitlist and did not participate in any psychological interventions. Throughout the 12-week study, the individuals receiving training and counseling reported increasing levels of subjective physical well-being and fewer sick days than participants in the control group. The findings suggest that adults of all ages may experience improved physical health if they can access interventions that focus solely on fostering a more positive outlook. MMM

# Manage Your Medications to Help Prevent Memory and Thinking Skills Problems

Many common drugs and dementia medications can adversely affect memory and thinking skills.

Inder the best of circumstances, managing your medication regimen can be a challenge. Keeping track of multiple pills each day, taking them at the right times, knowing what other medications, supplements, or foods to avoid to prevent dangerous interactions, and understanding the side effects that accompany each drug can seem overwhelming.

But for people dealing with a memory disorder, polypharmacy (the use of multiple medications to treat one or more conditions) can become a far greater strain. And even if your cognition is healthy, the side effects of some common prescription and overthe-counter (OTC) drugs can include altered thinking and confusion.

"You have to be very judicious about the effects of your medications, both alone and in combination, on thinking and memory," says Massachusetts General Hospital psychiatrist Jennifer Gatchel, MD, PhD, also an Assistant Professor of Psychiatry at Harvard Medical School. That can require frequent and regular conversations with your doctors, but the effort may help you avoid cognitive complications and other consequences, such as uncomfortable physical symptoms, organ damage, and injuries from falls.

Consider these suggestions to better manage your medications to optimize memory and thinking performance:

### **Keep All Your Doctors Informed**

Dr. Gatchel says that ideally all members of your health-care team would be in regular communication about changes in your health and the medications. Ongoing communication might reduce the number of pills prescribed and lead to better management of dosages to avoid dangerous interactions.

"In practicality, in a fast-paced health-care system, you may have to advocate for that communication across all your providers," Dr. Gatchel says. For example, if your primary care physician prescribes an antihistamine for an allergy or sleep, but your psychiatrist has you on a tricyclic antidepressant, you could be at risk for serious anticholinergic side effects, such as a rapid heart rate, constipation, and confusion. Anticholinergic effects stem from inhibiting the physiological action of acetylcholine, a neurotransmitter in the brain that affects involuntary muscle movement and other bodily functions, and can range in severity from mild to life-threatening.

Other common drugs that may affect memory and thinking include benzodiazepines, sleep aids, and opioids and other pain medications.

You should share a list of all the prescription medications, OTC drugs, and supplements you take with all of your health-care providers. Two questions to ask are: "Can I reduce the number of medications I take?" and "Should the dosage of any of the medications be changed or reduced based on my symptoms, or the potential interactions between drugs?"

# **Be Proactive**

There are times, however, when you should reach out to a doctor's office with questions or concerns even if your next appointment is weeks or months away. "There's a common concern that people don't want to bother their doctors," Dr. Gatchel says. "Don't hesitate to reach out in between appointments."

She adds that a nurse or other health-team member may be able to answer a question or consult with the doctor and call you back. The question could be as simple as whether it's okay



© Kristen Prahl | Getty Image

Using a pill organizer or other reminder system helps manage your medications. Working with your doctors to make sure your medication regimen is safe and effective is another key step, especially if you're having memory issues.

to have an aspirin given your medical history and current medication regimen. No question is insignificant.

# **Know How Your Health Affects Your Medications**

You may tend to focus on how a new medication will affect your health, but it's critical to understand how your health might affect how a drug is absorbed in the body.

For example, the dementia drug memantine is excreted from the body through the kidneys. Dr. Gatchel explains that if you have compromised renal function, your kidneys may not effectively remove enough of the drug, allowing a greater concentration of the medication to remain in your body. This can lead to headaches, dizziness, confusion, and other side effects.

Likewise, any other changes in your health, such as a heart attack or stroke, should prompt a reevaluation of your medication use. And simply growing older is a reason to give each medication a new look, "A medication you may have been taking since middle age may present a greater risk for older adults, and dosing may have to be modified," Dr. Gatchel explains. "Have a conversation about memory and thinking skills. There may be other treatments that are available different forms of therapy, different treatments for insomnia, for example. Is there a safer approach? Is there a non-medication approach?"

Managing your medications doesn't have to be a solo effort. Including a spouse, adult child, home health aide, and your health-care providers—as well as drug reminder systems—is a prescription for healthy outcomes. MMM

# Virtual Visits Conveniently Expand the Reach of Mental Health Professionals

Whether they're due to COVID-19 or other factors, virtual visits with a therapist can be just as effective as in-person sessions.

Modern telecommunication technology allows students to "attend" classes from home, businesses to hold face-to-face meetings, and patients to have virtual checkups with their physicians. All of these innovations have taken on even more importance and been utilized more than ever as the world grapples with the COVID-19 pandemic.

The same is true for people accessing mental health care remotely, a particularly crucial aspect of telemedicine or telehealth these days. "During the COVID-19 pandemic, telehealth services are critical given higher rates of stress and the need to limit infection rates by maintaining social distancing," says Molly Colvin, PhD, Director of Massachusetts General Hospital's Learning and Emotional Assessment Program. She adds that telehealth services have provided a vital link between mental health professionals and their patients and their patients' families this year.

## **What is Telemental Health?**

Providing mental health care by using videoconferencing or similar technology means mental health professionals can be in their offices or homes and see their patients in their own homes. It works for one-on-one sessions, as well as group or family therapy, too. A smartphone or a computer with camera and microphone can be used to communicate via Zoom, Skype or other applications. Helpful sessions can also be conducted with an old-fashioned telephone call. The content and interaction between patient and provider during a virtual visit is essentially the same as it would be in an in-person session.

Research suggests that psychotherapy delivered remotely often can be just



Virtual visits with a therapist or physician can be done using a laptop computer or even a smartphone.

as effective as in-person sessions in treating depression, anxiety and certain other conditions. The use of telemental health had already been on the rise in the past few years, particularly as insurers began covering such services. There is still some variability in telemental health coverage from state to state and among various health insurance providers. So if you are interested, check with your provider first.

# **Advantages of Remote Therapy**

One of the chief conveniences of telemental health is that the patient can stay home rather than get to a hospital or the office of a mental health professional. This is particularly helpful for people in rural areas who may not have such services nearby or for people with other transportation challenges or responsibilities, such as caregiving. The convenience of virtual visits usually means fewer missed appointments, too.

And of course, when physical distancing is the order of the day, virtual visits comply with those guidelines. But telemental health has a number of other benefits. Dr. Colvin says that many individuals are more comfortable opening up about their thoughts and feelings at home, rather than in an office where they may feel

### WHAT YOU SHOULD KNOW

- Virtual mental health visits can be done over the phone, but are most effective when using videoconferencing applications such as Zoom or Skype.
- Not all health insurance providers cover virtual visits, so check with your insurer before making an appointment.
- It may take a few sessions to grow comfortable with the format of telemental health delivery.
- Telemental health allows for several people in different locations, such as older parents and adult children or spouses living apart due to military deployments or other reasons, to join the same session with a mental health professional.

uncomfortable and less likely to share. She works primarily with children and adolescents, who tend to be much more relaxed in their home environment. But that's true for most people.

"Overall, we have been quite pleased by the quality of telehealth visits," Dr. Colvin says. "We can connect with children and adolescents in a more personal way by seeing them in their home environments. Many are more relaxed by not having to come to the hospital and adjust to that setting. And for anyone new to mental health care, telehealth services may feel less intimidating and more manageable."

# **Challenges of Telemental Health**

At the same time, there are some challenges with remote mental health care. For example, poor personal hygiene may be an early sign of depression or cognitive decline, but it's less evident in a virtual visit. Patients who have hearing loss may have more trouble communicating. And for patients who have difficulty with technology or who simply don't have the right equipment or internet access, remote sessions aren't possible or require a financial investment.

"Internet service is not universal," Dr. Colvin observes. "Privacy may be harder for patients and caregivers to find if they are in their homes. As a provider, I sometimes feel that I need

to work harder to monitor and read nonverbal cues and exaggerate my own so that their intention is clear. I also miss being able to play with younger children to establish and maintain rapport. Tests that require writing, drawing, manipulatives, and precise timing are also much harder to administer."

And as much as virtual visits may set some people at ease, others may take some time to adjust to communicating via computer screen. A 2018 study of rural telemental health services found that while some individuals found the sessions "less personal" at the beginning, once they became acclimated to the process, they found the approach positive and helpful.

"Despite the limitations, my hope is that insurance providers will continue to reimburse for telehealth services following the COVID-19 pandemic so that we can continue them," Dr. Colvin says. "Telehealth cannot be a full substitute for in-person services, but they should be an important complement to them in the future."

# **Looking Ahead**

The use of telemental health services may have expanded considerably due to COVID-19, but Dr. Colvin expects remote therapy to remain popular for years to come. The comfort level it provides many individuals new to mental health care and the convenience it offers everyone involved are undeniable. In-person group therapy can be made easier if all members of the group can join a virtual session from their homes, for example. And for patients who need assistance unexpectedly, but urgently, a mental health professional could be just a few clicks away on a computer.

"This is an exciting time to be in psychiatry and psychology," Dr. Colvin says. "Telehealth services will be a catalyst for tremendous innovation in clinical care. The ability to reach others quickly and easily provides an opportunity to think creatively about different ways of practicing that improve accessibility." MMM

# **MEMORY MAXIMIZERS**

HERE'S THE LATEST RESEARCH TO HELP YOU KEEP YOUR BRAIN SHARP.

# Eating Fish May Help Protect the Brain Against Aging, Air Pollution



Eating salmon and other foods rich in omega-3 fatty acids may help protect the brain against white matter loss.

The long-held belief that fish is "brain food" just got another endorsement. This time it's from a study published recently in *Neurology*, the journal of the American Academy of Neurology. The study sampled 1,315 women with an average age of 70 who did not have dementia at the start of the study. Researchers found that women who ate fish on a regular basis were more likely to have higher levels of omega-3 fatty acids in their blood and a greater volume of white matter in the brain compared with women who

ate little or no fish. White matter, which tends to diminish as we age, contains nerve fibers (axons), which are extensions of nerve cells (neurons). White matter plays an important role in learning and brain functions, as well as communication between different parts of the brain. The researchers also noted the addresses of the women in the study and calculated the air pollution levels in those locations. Women living in regions with greater air pollution tended to have reduced white matter volume. Interestingly, the study findings revealed that the women with higher levels of omega-3s who lived in areas that did have higher air pollution experienced less white matter volume loss than those who had the lowest levels of omega-3s in their blood. This was an observational study, which didn't prove that eating fish preserves brain volume or provides direct protection against air pollution. But the association between brain health and higher omega-3 levels was considered significant. Many previous studies have also found a strong association between omega-3 fatty acids and better brain health. Fish such as salmon, mackerel, and tuna are good omega-3 sources. While this study focused on women, researchers suggest that men may also benefit cognitively from boosting their omega-3 consumption.

# Preserving Gum Health May Help Protect Against MCI and Dementia

Gum disease is linked to many medical conditions that seem unrelated to dental health, including heart disease, diabetes and stroke. In a study published recently in *Neurology*, the journal of the American Academy of Neurology, researchers suggest that irreversible gum disease also may be associated with mild cognitive impairment (MCI) and dementia 20 years

later. Researchers examined the dental health of more than 4,500 adults over a period of about 18 years. They found that individuals with intermediate or severe gum disease had a 20 percent greater risk of developing dementia compared to those who had no gum disease at the start of the study. Researchers also found that older adults with mild gum disease were no more likely to develop dementia than their peers with no dental problems. While the observational study did not find a causal link between gum disease and MCI or dementia, researchers believe that the bacteria that cause gum disease may trigger inflammation that causes dementia.



Maintain good gum and tooth health to possibly lower your risk of dementia or other health complications.

Daily brushing and flossing, as well as regular dentist visits, can help prevent gum disease, also known as periodontitis. If you have already been diagnosed with gum disease, working with your dentist and periodontist, if necessary, may help prevent a worsening of gum disease and the loss of teeth and other health problems that may result. MMM

# **Research Suggests Volunteering Improves Well-Being, Reduces Mortality Risk**

The Harvard study also notes that volunteering promotes greater physical activity and lowers the risk of physical limitations.

olunteering for an average of two hours per week is associated with a significantly reduced risk of mortality and an improved sense of wellbeing, according to a recent study led by Eric Kim, PhD, a research scientist with the Human Flourishing Program at Harvard's Institute for Quantitative Social Science. The study involved more than 12,000 adults ages 50 and older, and was published in the *American Journal of* Preventive Medicine.

"Humans are social creatures by nature," Dr. Kim says. "Perhaps this is why our minds and bodies are rewarded when we give to others. Our results show that volunteerism among older adults doesn't just strengthen communities, but enriches our own lives by strengthening our bonds to others, helping us feel a sense of purpose and well-being, and protecting

us from feelings of loneliness, depression, and hopelessness."

Researchers focused on 34 physical health and psychological/social wellbeing outcomes, and relied on data, face-to-face interviews, and survey responses over a period of more than four years. Older adults who volunteered at least 100 hours a year experienced the most substantial benefits.

Older adults who are retired have both time and an array of skills and experiences they can share. The study recommends that policy makers develop programs and improve opportunities to link older adults to volunteering opportunities in their communities. Dr. Kim suggests this is a win-win, as it would provide volunteer service where it's needed, while also boosting the longevity and quality of life of older adults.

He also notes that the data were



Volunteering has been shown to improve one's sense of wellbeing while also improving the lives of others.

collected prior to the COVID-19 pandemic, which has curtailed many volunteer opportunities. But in situations where volunteering is possible, this may be as important a time as any to give your time and energy to a good cause. "If you are able to do so while abiding by health guidelines, you not only can help to heal and repair the world, but you can help yourself as well," Dr. Kim says. "When the COVID-19 crisis finally subsides, we have a chance to create policies and civic structures that enable more giving in society. Some cities were already pioneering this idea before the pandemic and quarantine, and I hope we have the willingness and resolve to do so in a post-COVID-19 society as well." MMM



# **MGH Study: Vitamin D Supplements Don't Reduce Depression Risks**

The so-called "sunshine vitamin" is important for good health, but supplementation doesn't appear to boost mood.

Vitamin D is most strongly associated with bookbar ed with healthy bones. It promotes calcium absorption to strengthen bones and is needed for bone growth and bone remodeling. Vitamin D also plays key roles in cell growth, and neuromuscular and immune function.

But studies have also found that low levels of vitamin D (25-hydroxy vitamin D) were associated with a higher risk for depression later in life. To determine whether taking vitamin D supplements could help protect against depression, Massachusetts General

Hospital psychiatrist Olivia I. Okereke, MD, led a study that included more than 18,000 men and women ages 50 and older.

"There was no significant benefit from the supplement for this purpose," Dr. Okereke says. "It did not prevent depression or improve mood."

Though vitamin D may not help you avoid depression, you may benefit from supplementation in other ways. Many people take vitamin D supplements for bone and metabolic health, though some studies have raised questions

about just how much help vitamin D provides in lowering the risk of osteoporosis, for example. "It's not time to throw out your vitamin D yet, though, at least not without your doctor's advice," Dr. Okereke says.

In addition to supplements, vitamin D is available in certain foods. Salmon, trout and several other types of fish are the best sources. Many milk, cereal, and orange juice products are fortified with vitamin D. And when exposed to sunlight, your skin manufactures its own vitamin D. Many people are advised to take vitamin D supplements if they have limited sun exposure or are at high risk for osteoporosis.

If you are concerned about your vitamin D levels, talk with your doctor. And if you are experiencing depressive symptoms, talk with your physician or a mental health professional. MMM

### **SLEEP AND MEMORY** (cont. from page 1)

"For some information learned the day before, it's like you've missed the opportunity to press the 'save' button—it's gone forever. For skill learning, you don't show the normal sleep-dependent improvement, like for that piano piece you practiced."

One of the consequences of insufficient sleep is that some brain cells don't function properly and communicate as well with one another. As a result, all the information processing that goes on in the brain during the day when you're learning and making decisions slows down. You're just not as cognitively sharp as you would be coming off a good night's sleep.

"You are also more emotionally reactive to both pleasant and unpleasant events because the amygdala, an emotional center of the brain, does not communicate as well with the prefrontal cortex, which normally helps to control emotional reactions," Dr. Manoach explains. "This can lead you to feel stressed out, yell at friends, and make bad decisions. You can imagine the cumulative effects of chronically insufficient sleep, which include a wide range of deleterious health consequences, impaired attention, and negative effects on long-term memory and decision making."

# **Sleep On It**

Going back to that sleep-deprived high school student, the idea of cramming all night for a test might seem like the best way to remember that material, but numerous studies have found that sleeping after learning new information actually helps retain all that new data in your memory. "Scientists once thought that all our learning occurred while we're awake," Dr. Manoach says. "Now we know that the brain continues to work on new information for days and even vears, and that much of this continued learning happens during sleep. Sleep is involved in strengthening new memories and integrating them with existing knowledge and changing and updating older memories based on what we just learned."

While scientists don't fully understand exactly how the brain consolidates memories overnight, it appears that newly learned information is temporarily stored in the hippocampus. "Overnight, the hippocampus communicates with the thalamus and the cortex to transfer the new learning to more permanent and distributed cortical representation," says Dr. Manoach, touching on just how much activity is going on in the brain during sleep. "This communication is accomplished by synchronizing naturally occurring brain rhythms emanating from these three brain regions. A good night's sleep is like a symphony of brain rhythms, with each movement or sleep stage serving a different type of memory. Cut your sleep short, or let it be interrupted by a text or something else, and you may miss the chance to have a breakthrough on that thorny problem you were sleeping on, or to perfect that piano piece just in time for the recital."

# **Drawing Upon Memories**

How well or how poorly you can recall new or old memories also has quite a bit to do with your sleep schedule. And when it comes to newly acquired information, if your sleepy self was unable to concentrate enough to learn it in the first place, you're not going to be able to remember it no matter how well you slept.

As for memories that you might otherwise be able to recall with ease, a poor night's sleep or an ongoing struggle with insomnia can often leave you grasping for a name or other bit of information. "Insufficient sleep won't cause you to lose stored memories, but it will likely make stored memories harder to retrieve and therefore less useful," Dr. Manoach says. "Memory retrieval requires an active attentional search process, which is less efficient after sleep deprivation. This makes it more difficult to come up with names and other information, which may give you that frustrating 'tip of the tongue' experience."

Sleep is only one factor that affects memory, though it is an important one. To help maintain concentration during the day and proper memory storage at night, aim for seven to eight hours of sleep, as well as 30 minutes or more of exercise, and a diet rich in fruits and vegetables and low in added sugars, sodium, and saturated fat. Keeping your mind sharp with brain-challenging activities and learning may also help. And with a good night's sleep, you'll be better prepared for whatever activities await when you wake up. MMM

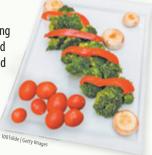
TIPS FROM UMA NAIDOO, MD

## **FOOD FOR THOUGHT**

# **Immune Boosters**

owered immunity is associated with worsening symptoms of mood and anxiety. I recommend using a double-barrel approach to feel better and stronger for your mind, mood and body.

Include these foods as part of your regular meal preparation: Red bell peppers, mushrooms, broccoli and broccoli sprouts, tomatoes.



Spices are an easy, zero-calorie, no-added-salt way to add flavor but more importantly, add an antioxidant boost for both mood and memory and an anti-inflammatory benefit, which supports improved mood. Immunity-boosting seasonings include: Ginger, qarlic, capsaicin, and turmeric.



© AlexRaths | Getty Image

### ASK THE DOCTOR



Editor-in-Chief Maurizio Fava, MD

Maurizio Fava, MD, Psychiatristin-Chief, Massachusetts General Hospital (MGH), Director of the Division of Clinical Research. MGH Research Institute, Slater Family Professor of Psychiatry, Harvard Medical School

# IN COMING ISSUES ...

The Risk Factors That May Help Prevent Dementia

Music's Role in Maintaining Your Memory

Toasting Better Brain Health During the Holidays

### **DEPRESSION PREVALENCE... MCI AND MOOD... SECOND STROKES**

I've read a variety of statistics about the prevalence of depression. How common is it really?

Getting a handle on the prevalence of depression is difficult because the condition ranges from mild and fleeting depressive symptoms to major depressive episodes, which are defined as periods of at least two weeks when a person experiences a depressed mood, intense feelings of sadness and hopelessness, loss of interest in activities or interactions with friends and family, or thoughts of or attempts at suicide. Survey data in recent years estimated that about 17 percent of adult women in the United States and 10 percent of adult men reported having a history of major depressive episodes (MDEs) in their lifetime. But earlier this year, researchers developed a simulation model that found an estimated 30 percent of women and 17 percent of men had one or more MDEs in their lifetime.

There may be many more people struggling with depression who do so on their own. While we may not know exactly how much of the population is affected by depression—mild, major and everything in between—it's clear that depression in some form is an incredibly common condition that affects millions of people.

I believe my 83-year-old father meets the definition of mild cognitive impairment. Even though he has memory lapses and other occasional challenges, he seems happier than I've seen him in a long time. Is that normal?

A It's not unusual for people to become happier and more at peace as they get older. The stress and challenges of work and raising children is often replaced by the calm that comes with retirement and activities such as traveling or spending time with grandchildren. A healthy perspective about life can take over.

Conversely, the onset of mild cognitive impairment (MCI) or early dementia can often trigger frustration, impatience, sadness, and

other mood changes. These may stem from struggles with memory and decision-making or from brain changes that affect mood and personality.

If your father is aware of his memory lapses or other "senior moments" and is able to shrug them off or laugh at them, he may have already accepted them as part of his journey. If he is unaware of changes to his memory and thinking skills, pay attention to how well he functions and handles his day-to-day responsibilities. Is he on top of his finances? How is his diet? Is he following through with doctor appointments? Should he still be driving? Is personal hygiene being affected? If you feel comfortable raising the issue of memory lapses or other signs of MCI, then talk with him in a patient and supportive way. Joining him on an appointment to his primary care physician or a neurologist for a screening may be appropriate.

I had a stroke about five years ago. It was relatively minor, and thankfully there are few lingering effects. But what are the odds of having a second one that may be more serious?

Having had one stroke does increase your odds of having a second one. Some studies have found that about a quarter of all stroke survivors will have another stroke. Other research suggests the risk is much higher. One good sign in your favor is that the period of greatest risk is during the first year or so after a stroke. So by being five years out from your first cerebrovascular event, you have already defied the odds. Knowing that you are facing an increased risk of a second stroke, the best advice is to maintain consistent blood pressure control, quit smoking (if you haven't already), take your medications exactly as prescribed, and follow a Mediterranean-style diet and do at least 30 minutes of moderate-intensity exercise most days of the week. Maintaining a healthy lifestyle will give you the best chance at avoiding a second, and possibly more serious, stroke. MMM

### EDITORIAL CORRESPONDENCE

The Editor Mind, Mood & Memory P.O. Box 5656 Norwalk, CT 06856-5656

By email: mindmoodmemory@aol.com

Although we value letters from our readers, we regret that we cannot answer them personally.

### **SUBSCRIPTIONS**

\$39 per year (U.S.) \$49 per year (Canada)

For subscription and customer service information, write to: Mind, Mood & Memory PO Box 8535 Big Sandy, TX 75755-8535

OR CALL TOLL FREE: 866-848-2412

### ONLINE CUSTOMER SERVICE

View your current subscription information online at: www.MindMoodandMemory. com/cs

You can also renew subscriptions, order gift subscriptions, notify us of a change of address, or contact customer service at this Web address.

### REPRINTS/WEB POSTINGS AVAILABLE

Contact Jennifer Jimolka, Belvoir Media Group 203-857-3144

### DISCLOSURES

For a complete list of all the relevant disclosures, please go to: www.MindMoodandMemory.com/ disclosures

### DISCLAIMER

Mind, Mood & Memory is intended to provide readers with accurate and timely medical news and information. It is not intended to give personal medical advice, which should be obtained directly from a physician. Acting on any information

provided without first consulting a physician is solely at the reader's risk. We regret that we cannot respond to individual inquiries about personal health matters.

From time to time, we make our list of subscribers available to carefully screened institutions and organizations offering products or services we believe you may be interested in. If you would prefer that we not release your name to these organizations, just let us know. Please include the mailing label from your issue

with your request, and send it to the customer service address at the left.

Express written permission is required to reproduce, in any manner, the contents of this issue, either in full or in part.

For more information, write to:
Permissions
Mind, Mood & Memory
P.O. Box 5656
Norwalk, CT 06856-5656