








Guide for HEALTHY BRAIN

Brought to you by our experts at the Ray Dolby Brain Health Center and the Institute for Health and Healing at Sutter Health's California Pacific Medical Center in San Francisco.

As life expectancy expands, Alzheimer's disease is on the rise, with an estimated 16 million Americans expected to have it by the year 2050. The good news is that brain scientists say there are actions you can start taking today to improve your brain's health. On top of that, these steps will improve your health in other ways, including protecting your heart and blood vessels.

STRATEGIES

SHOULD FOCUS ON A GOOD BALANCE OF:

-  Eating a healthy diet
-  Learning new things
-  Exercising regularly
-  Keeping stress in check
-  Managing medications
-  Sleeping well
-  Staying socially active



HEALTHY DIET

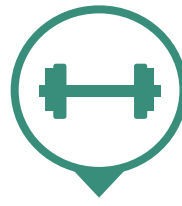
The human brain is nearly 60 percent fat. That fat surrounds nerve cells and allows them to function optimally. The type of fat consumed in our food can affect the health of our heart, blood vessels and the brain, possibly influencing inflammation and risk for dementia.



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- **Limit saturated fats and “trans” fats.** Saturated fats come from dairy foods (ice cream, butter & cheese) and red meats. Trans fats are prevalent in fried food and processed products like cookies, crackers and pastries with long shelf life. Optimize omega 3 fats and limit omega 6 fats for better health.
- **Emphasize a plant-based diet.** Make whole grains, vegetables, fruits, legumes and nuts the mainstay of your diet.
- **Maximize dietary sources of vitamins B12, D and E** to maintain nerve and brain health. Examples include: salmon, spinach, nuts, avocados and low-fat milk or fortified juice for dietary vitamin D.
- **Stay well-hydrated.** General guideline is “8 by 8”—8 glasses of 8 ounces of liquid daily.
- **Light to moderate use of alcohol** may be protective of the brain (1 serving per day for women, up to 2 for men).



PHYSICAL EXERCISE

Physical exercise increases blood flow to muscles, heart and brain, which can increase the generation of nerve growth factors and encourage new brain cells, especially in the hippocampus, an area vital for learning and memory.

- **Strive for a 30-minute workout every day.** Try different activities: walking, swimming, dancing, gardening, yoga, riding a bike.
- For added bonus, **exercise with a friend** for social stimulation.
- Choosing an **activity that requires engaging your brain** (learning tai chi or dance) is also a plus.



STAY SOCIALLY ACTIVE

Higher levels of social activity can decrease the risk of cognitive decline. Besides directly stimulating the brain, staying socially active affects cognition in other, more indirect ways as well:

- **Socialization** supports a sense of connectedness, belonging and purpose, which can help reduce feelings of depression and anxiety. Regular social interaction with others can help stabilize mood, which in turn supports cognition.
- **Social interaction** often goes hand in hand with physical activity, and physical activity is good for the brain.
- **Isolation** often leads to an increasingly limited diet, which can cause malnutrition. Malnutrition negatively affects the brain. Regular social interaction increases the likelihood of maintaining a varied diet.



LEARN NEW THINGS

Cognition includes thinking skills like memory or visual-spatial abilities and, just like the body, the brain benefits from a workout. Cognitive exercise can strengthen weaknesses and, in some cases, form new neural pathways to work around a damaged area. Learning new things doesn't have to follow an injury or illness. You can improve your "cognitive reserve" by challenging your brain while it's healthy and strong.



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The best exercise is said to be learning a skill that is unfamiliar to you—like a new language or a game you've never played before—but small things, like counting the number of blue umbrellas on a rainy day, work too!

You can also use techniques to make life easier, such as creating a rhyme to remember your grocery list or breaking a big goal down into smaller goals to be accomplished over time.

A number of resources are available to "train your brain." Here are some of our favorites:

- The Total Brain Workout, Marcel Danesi, PhD
- The Mild Brain Injury Workbook, Douglas J. Mason, PsyD
- The Memory Bible, Gary Small, MD
- Buddha's Brain, Richard Hansen PhD
- Sharp Brains Guide to Brain Fitness, Alvaro Fernandez and Elkhonon Goldberg PhD
- Posit Science (www.brainhq.com)
- Lumosity (www.lumosity.com)



STRESS LESS

The stresses of survival on the Serengeti Plain have transitioned to daily stresses of deadlines, obligations, job strain and worry, but we still respond with the chemicals of fight or flight. Low-level chronic stress may be associated with increased heart disease and loss of brain cells.

- **Be aware of stress.** Know thyself. Keep a record of when you feel stressed and how you react—physical tension, insomnia, headaches, stomach aches, social withdrawal.
- **Breathe...breathe...breathe.** When stressed, take three deep slow breaths. Breathe in through your nose slowly to the count of four, pause, and breathe out gently through your mouth to the count of six. Set the alarm on your phone to remind you to do this several times throughout the day to prevent the build up of stress.
- **Exercise.** Yes, it belongs here, too. Exercise reduces stress in your body.
- **Accept your feelings** and honor your grief, sadness, frustration by talking it out with friends, family or counselor. But don't stay focused on these feelings all the time.
- **Be mindful.** Engage your senses. Notice your breathing. Notice your surroundings, in detail.
- **Distract yourself.** Do something different, even for five minutes. Listen to music. Pick some flowers. Pet your dog.
- **Add a gratitude meditation practice** each evening before going to bed. Write down three things for which you are thankful.



SLEEP WELL

A frequently overlooked element of brain health is good sleep. There is a growing consensus that sleep is linked to learning, memory, nerve cell remodeling and repair. We seem to need a balance of all sleep cycles. Some studies suggest factual memories are consolidated in slow sleep and more complex memories establish themselves in REM sleep. These “memories” are based on changes at the molecular and cellular levels within our brains, as nerve extensions are branched, modified and reinforced.

- **Create and follow rituals** that help you relax each night before bed—warm bath, light snack, meditation or light reading.
- **Get up at the same time** every morning, even on weekends or holidays.
- **Avoid taking naps** if you can. If you must, keep it to 20 minutes or less. Don't nap after 3 p.m.
- **Get out of bed if you are not asleep** within 20 minutes. Find something else to do that is relaxing—reading, meditating. Return to bed when you feel sleepy again.
- **Don't work, watch TV, eat or talk on the phone in bed.** Keep the bed for sleep.
- **Use sleeping pills cautiously.** Don't use for more than three weeks.



MANAGE MEDICATIONS

As we transition into older age, our brains are more sensitive to the adverse effects of certain medications. Older individuals should be particularly cautious about these three classes of medications. Always remember to discuss medications with your doctor.

- 1. Anticholinergics**—These medicines block the transmitter acetylcholine. They are used widely to treat diseases like asthma, intestinal cramping, incontinence, muscle spasms, mood and sleep disorders. Examples: cyclobenzaprine, benztropine, dicyclomine, diphenhydramine, belladonna alkaloids, oxybutynine, amitriptyline etc.
- 2. Benzodiazepines**—These attach to the GABA receptor, the main inhibitory neurotransmitter (responsible for slowing things down). These help with anxiety and promote sleep, but increase the risk for falls, impaired cognition/memory. In addition, these medicines differ in potency, and some can lead to dependence and adverse withdrawal symptoms. Examples: triazolam, midazolam, lorazepam, alprazolam, temazepam, diazepam, clonazepam, chlordiazepoxide, chlorazepate, flurazepam.
- 3. Non Steroidal Anti Inflammatory Drugs (NSAIDs)**—used frequently to treat pain related to osteoarthritis and degenerative joint disease. Examples: ibuprofen, naproxen, meloxicam, etodolac, indomethacin. Consider using acetaminophen (APAP) for chronic pain, which is the recommended first-line treatment for mild to moderate pain, where inflammation is not an issue.

CONCERNED ABOUT YOUR BRAIN HEALTH?



If you've noticed changes in your memory or cognitive function, talk with your doctor. A wide number of factors contribute to brain health, and your doctor can help you determine what's normal and when you might need help. Need to find a doctor? Search for doctors affiliated with Sutter Health at www.sutterhealth.org/findadoctor.