The 17 Modifiable Risk Factors That Protect Your Brain

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We now have more power than ever to influence how our brains age.

According to a comprehensive study published on April 3, 2025, in the ***Journal of Neurology, Neurosurgery & Psychiatry***, researchers from Mass General Brigham identified 17 modifiable risk factors shared by at least two of the following conditions: stroke, dementia, and late-life depression.?

The study reviewed 59 meta-analyses and found that these three serious conditions share a set of overlapping, modifiable risk factors—many of which are within our control.

Dr. Sanjula Singh, principal investigator, **emphasized**: “There are many different steps individuals can take to lower their risks for these age-related brain diseases.”

Here’s what the research found and how to apply it.

Why This Study Matters

Approximately 60% of strokes, 40% of dementias, and 35% of late-life depression cases are linked to modifiable **lifestyle factors**. This means that our daily choices, what we eat, how we move, how we connect, and even how we think, can dramatically shape our healthspan.?

What sets this study apart is its composite approach: researchers identified 17 modifiable risk factors that influence all three outcomes and then ranked them by impact using disability-adjusted life year data (meaning how many years of life are lost because of illness, disability, or early death.?

Translation: This study outlines a very comprehensive map for how we can protect our brains as we age.

The 17 Modifiable Risk Factors That Protect Your Brain

Here are the 17 risk factors identified, organized by categories, along with their specific impacts on stroke, dementia, and late-life depression:

CARDIOMETABOLIC HEALTH

1. **Blood pressure**: Elevated **blood pressure** damages blood vessels, increasing the risk of stroke and contributing to cognitive decline and depression.? High blood pressure is considered anything over 130/80 mmHg

2. **Kidney function**: Poor kidney health can lead to toxin buildup, affecting brain function.? **Kidney health** is determined by your glomerular filtration rate (GFR). Normal >90 mL/min/1.73 m²; Impaired: <60 mL/min/1.73 m²

3. **Fasting plasma glucose levels**: High **blood sugar** levels can damage blood vessels and nerves, leading to an increased risk of stroke and cognitive impairment.? Normal: <100 mg/dL; Prediabetes: 100-125 mg/dL; Diabetes: ?126 mg/dL

4. **Body mass index (BMI)**: Obesity is associated with inflammation and vascular issues, elevating the risk of stroke and dementia.? **BMI** measures the ratio of your height to your weight to estimate the amount of body fat you have. Normal: 18.5–24.9; Overweight: 25–29.9; Obesity: ?30

5. **Total cholesterol**: **High cholesterol levels** can lead to atherosclerosis, increasing the risk of stroke and possibly contributing to dementia.? Desirable: <200 mg/dL; Borderline high: 200–239 mg/dL; High: ?240 mg/dL

6. **Smoking**: Tobacco use damages blood vessels and reduces oxygen to the brain, heightening the risk of stroke, cognitive decline, and depression.?

7. **Alcohol consumption**: Excessive alcohol intake can cause brain shrinkage and increase the risk of all three conditions.? Low-risk: ?1 drink/day for women, ?2 for men; High risk: above these levels

LIFESTYLE & DAILY HABITS

8. **Diet**: Poor nutrition can lead to obesity, hypertension, and diabetes, all of which are risk factors for stroke and dementia.?

9. **Physical activity**: Regular exercise improves blood flow and reduces inflammation, lowering the risk of cognitive decline and depression.?

10. **Sleep quality**: Inadequate sleep can lead to the accumulation of amyloid plaques, associated with Alzheimer's disease, and increase depression risk.?

11. **Pain levels**: Chronic pain can lead to changes in brain structure and function, contributing to depression and cognitive issues.?

MENTAL & EMOTIONAL HEALTH

12. **Stress levels**: Chronic stress can damage brain structures involved in memory and emotion, increasing the risk of depression and cognitive decline.?

13. **Depressive symptoms**: Depression is linked to changes in brain chemistry and structure, elevating the risk of dementia and stroke.?

14. **Purpose in life**: A strong sense of purpose is associated with better mental health and cognitive function, reducing the risk of all three conditions.?

COGNITIVE & SOCIAL ENGAGEMENT

15. **Leisure-time cognitive activity**: Engaging in mentally stimulating activities builds cognitive reserve, delaying the onset of dementia and reducing depression risk. ?

16. **Social engagement**: Strong social connections are linked to better mental health and cognitive function, lowering the risk of all three conditions. ?

17. **Hearing loss**: Untreated hearing impairment can lead to social isolation and cognitive decline, increasing the risk of dementia and depression.

What You Can Do: Evidence-Based Actions

You don’t need to overhaul your life to see benefits. These science-backed micro-adjustments can help you build a brain-protective lifestyle—one choice at a time.

1. MONITOR AND MANAGE YOUR BLOOD PRESSURE

Aim for a blood pressure **below 120/80 mmHg**. Regular monitoring and lifestyle changes, such as reducing sodium intake and increasing physical activity, can help maintain healthy levels.

2. BUILD MUSCLE AND ENDURANCE

The American Heart Association **recommends** 150 minutes of moderate-intensity aerobic exercise per week. Activities like walking, swimming, or cycling can improve cardiovascular health and cognitive function. ?And a growing body of **research** shows that **strength and resistance training** not only preserves muscle health but

also offers powerful **protection for the brain** — improving cognitive function, reducing neuroinflammation, and potentially slowing processes like amyloid accumulation linked to Alzheimer's disease

3. ADOPT A BRAIN-HEALTHY DIET

Follow a **Mediterranean-style diet** rich in fruits, vegetables, whole grains, lean proteins, and healthy fats. This diet has been associated with a reduced risk of **cognitive decline**. The study examined specific dietary components in detail. Foods that appear most protective include leafy vegetables, whole fruits, nuts, fish, and olive oil. Foods that increase risk include red meat, sugar-sweetened beverages, excess sodium, and saturated fats.

4. PRIORITIZE QUALITY SLEEP

Aim for 7–9 hours of **sleep** per night. **Good sleep hygiene practices**, such as maintaining a regular sleep schedule and creating a restful environment, can enhance sleep quality. ?

5. MANAGE STRESS EFFECTIVELY

Chronic stress **alters brain structure** and function—especially in areas related to memory and emotional regulation. Practicing daily stress-relief techniques like mindfulness meditation, deep breathing, or spending time in nature can lower cortisol levels and support long-term brain health.

6. STAY SOCIALLY ENGAGED

Social isolation is not just a mood dampener; it's a serious **health risk**. Maintaining strong social connections helps protect against depression and supports cognitive resilience.

7. FIND AND FOLLOW YOUR PURPOSE

Having a sense of purpose is **neuroprotective**. People who feel their lives are meaningful have lower levels of inflammatory markers and reduced risk of cognitive decline.

8. CHALLENGE YOUR BRAIN REGULARLY

Whether it's reading, puzzles, learning an instrument, or taking up a new language, mental stimulation builds **cognitive reserve** and can delay cognitive aging.

9. ADDRESS HEARING LOSS EARLY

Even mild hearing loss doubles the risk of **dementia**. Hearing aids and regular hearing checkups are simple interventions with powerful downstream effects.

Own Your Future

The future of brain health doesn't live in a lab. It lives in your kitchen, your calendar, your friend group, and your morning routine. This new research shows us *what's going wrong* and how to make it right. You don't need to tackle all 17 factors at once. Pick one this week. Choose something that feels both possible and powerful. That's how transformation begins.

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