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Cardiorespiratory Fitness May Cut Dementia, Depression, and Psychosis Risk

Analysis by Dr. Joseph Mercola | June 27, 2026

STORY AT-A-GLANCE

- Adults with higher cardiorespiratory fitness had significantly lower risks of dementia, depression, and psychotic disorders, showing that your long-term brain health is strongly tied to how efficiently your body uses oxygen during movement
- Researchers found that even small improvements in exercise capacity reduced dementia and depression risk, meaning your brain responds to gradual fitness gains long before major physical changes become obvious
- Stronger aerobic fitness improved blood flow, stress regulation, mitochondrial energy production, and neuroplasticity, which helps your brain maintain memory, emotional stability, and cognitive resilience as you age
- A long-term study that followed adults for more than 26 years found that participants with the highest endurance capacity had a 53% lower dementia risk compared to the least fit group
- Consistent aerobic exercise combined with proper recovery, adequate carbohydrates, and daily movement habits helps strengthen cardiorespiratory fitness without triggering the excessive stress and burnout that come from overtraining

Dementia and depression affect hundreds of millions of people worldwide. Yet one of the strongest predictors of who gets these diseases, and who doesn't, costs nothing, requires no prescription, and is already within your control. It comes down to how

efficiently your heart, lungs, and muscles work together to deliver oxygen, what researchers call cardiorespiratory fitness.

Two studies, one published in Nature Mental Health and another in Alzheimer's & Dementia,[1,2] reveal striking links between fitness levels and long-term brain health. Together, they followed millions of people across decades and reached a similar conclusion: the stronger your aerobic capacity, the better your odds of protecting your mind as you age.

Dementia, meaning progressive loss of memory, reasoning, and daily function, often begins years before diagnosis. Early symptoms include forgetfulness, confusion, slower thinking, mood changes, and difficulty concentrating. Depression frequently overlaps with that decline, bringing fatigue, low motivation, disrupted sleep, and social withdrawal. Psychotic disorders, though less common, share many of the same underlying drivers tied to brain energy, circulation, and inflammation.

What stood out in this research is how responsive the brain is to even small improvements in fitness. Your brain depends on oxygen delivery, blood flow, and energy production every single day. When those systems weaken, inflammation rises, stress hormones stay elevated, and brain cells struggle to function efficiently.

The encouraging news is that cardiorespiratory fitness isn't fixed; your daily movement habits directly shape it over time, at virtually any age. Those findings raise a key question: What exactly changes inside your brain and body when your fitness level improves?

Fitness Levels Predicted Who Stayed Mentally Sharp

A massive systematic review and meta-analysis, published in Nature Mental Health, examined 27 long-term cohort studies involving more than 4 million participants from nine countries.[3]

Researchers wanted to determine whether **cardiorespiratory fitness** — your body's ability to deliver and use oxygen during activity — influenced future risks of depression, dementia, and psychotic disorders. Some studies followed participants for as long as 29 years, giving researchers a rare look at how fitness levels shape brain health over decades instead of months.

- **The strongest fitness levels consistently matched the lowest brain disease risk —** Adults with the highest fitness levels had 36% less depression, 39% less dementia, and 29% fewer psychotic disorders compared to their least-fit peers. To put that in perspective, few medications produce protective effects of that magnitude across so many brain conditions simultaneously.

  Even a modest 1 metabolic equivalent of task (MET) increase, a standard measurement of exercise capacity and how much energy your body uses during activity, lowered depression risk by 5% and dementia risk by 19%. One MET reflects how efficiently your body uses oxygen during movement. In simple terms, it reflected a small improvement in how efficiently your heart, lungs, and muscles used oxygen during movement.

- **The findings matter because fitness is trainable at almost any age —** Genetics influence part of your fitness level, but the paper explained that regular movement patterns strongly shape the rest. That changes the conversation around brain aging. You're not locked into the fitness level you had at 30 or 40 years old. Daily walking, cycling, strength training, and other aerobic activity steadily improve oxygen use, circulation, and metabolic function over time.

  Researchers found lower depression and dementia risk in adults younger than 50 and older than 50. Many people assume brain decline only becomes important after retirement age. In reality, dementia-related changes often begin years before symptoms become obvious. The paper showed that stronger fitness earlier in life created long-term protection later on.

- **Researchers explained that fitness physically changes the brain itself —** According to the paper, higher fitness supports "enhanced neuroplasticity," meaning your brain becomes better at adapting, learning, and maintaining connections between nerve cells. Exercise also improves cerebral blood flow, helping oxygen and nutrients reach brain tissue more efficiently. Better circulation matters because brain cells consume enormous amounts of energy every day.

- **Inflammation and oxidative stress dropped as fitness improved —** Oxidative stress refers to cellular damage caused by unstable molecules that injure proteins, fats, and DNA. Chronic inflammation and oxidative damage accelerate brain aging and interfere with memory, mood, and concentration. Researchers explained that higher cardiorespiratory fitness reduced these destructive processes while supporting healthier mitochondrial function.

  Mitochondria produce cellular energy, and your brain depends heavily on that energy supply. The brain is roughly 2% of body weight but consumes about 20% of your energy. Every thought, memory, and mood state is essentially a mitochondrial event. When mitochondrial function declines, the brain is the first organ to feel it because it has the smallest energy reserve relative to demand.

- **The study also connected fitness to stress resilience and emotional control —** Researchers found that regular physical activity helps regulate the hypothalamic-pituitary-adrenal axis, often shortened to the HPA axis. The HPA axis works like a thermostat for stress hormones; it should switch on during a threat and switch off afterward.

  When chronic stress keeps it stuck "on," **cortisol** bathes the hippocampus (your memory-formation center) and gradually erodes it. Better fitness helped blunt excessive stress responses while supporting healthier hippocampal volume, an area deeply involved in memory and emotional regulation.

Stronger Endurance Protected the Brain for Decades

A longitudinal cohort study, published in Alzheimer's & Dementia, examined 4,030 adults who had no cardiovascular disease at the start of the research. Scientists wanted to determine whether exercise capacity measured through MET scores predicted future dementia risk over time. Participants pedaled a stationary bike with gradually increasing resistance until fatigue or symptoms forced them to stop, a standard way to measure peak aerobic capacity.

Researchers then tracked dementia diagnoses over a median follow-up period of 26.5 years. This research examined ordinary individuals whose long-term brain outcomes changed according to how efficiently their bodies handled sustained physical activity. A higher MET score simply reflected stronger endurance and better oxygen use during exercise.

- **Higher exercise capacity strongly separated lower-risk participants from higher-risk participants —** The findings showed that adults who could push themselves to above 9 METs during a maximal exercise test had a 53% lower risk of developing dementia compared to those who tapped out below 6 METs, the least fit category.

  To translate those numbers: a peak capacity above 9 METs means the person could briefly sustain an intensity equivalent to vigorous running or hard cycling before fatigue forced them to stop. A capacity below 6 METs means they couldn't push past a moderate jog. It's a measure of their aerobic ceiling, the highest gear their cardiovascular system could reach when tested. That ceiling is what predicted long-term brain health.

  Researchers adjusted for other health factors, meaning the association remained significant even after accounting for differences like age, blood pressure, smoking status, and existing health conditions that could influence brain outcomes. The study specifically described exercise as "the only modifiable factor" that directly raises this aerobic ceiling. Genetics set part of your starting point, but training is what lifts the ceiling higher over time.

- **Long-term consistency mattered more than short bursts of exercise —** Researchers followed participants long enough to observe how brain decline unfolds across decades instead of weeks or months. Dementia develops slowly. Damage accumulates years before memory problems become obvious. The adults who entered the study with better fitness levels carried that advantage far into later life.

- **The results highlight how small improvements build into large outcomes over time —** Many people approach exercise with an all-or-nothing mindset. This study showed the opposite. Your brain responds to gradual increases in endurance capacity long before you notice visible physical changes. Improving how efficiently your body handles movement today influences how well your brain functions decades later.

- **Better circulation likely protected brain tissue over time —** The paper explained that stronger cardiorespiratory fitness improves how effectively blood reaches the brain. Your brain consumes enormous amounts of oxygen and nutrients despite representing only a small percentage of total body weight. Poor circulation starves brain tissue of energy. Better endurance supports more efficient delivery of oxygen during both physical activity and rest.

- **Improved metabolic function also played a major role —** Higher fitness levels improve insulin sensitivity and glucose handling. That matters because poor blood sugar control damages blood vessels, increases inflammation, and accelerates cognitive decline over time.

  Dementia risk rises sharply when metabolic health deteriorates. Higher exercise capacity isn't just a measure of athleticism; it's a snapshot of how well your entire metabolic machinery is running. A body that uses oxygen efficiently during exercise tends to handle blood sugar, hormones, and inflammation more efficiently at rest, too.

The findings also connect directly to mitochondrial health and stress resilience. Better endurance training improves mitochondrial efficiency, which strengthens energy production throughout the body. Regular physical activity also reduces chronic stress signaling and supports healthier sleep patterns, both of which influence memory retention, focus, and long-term cognitive stability.

Build Cardiorespiratory Fitness Before Brain Decline Starts

So how do you actually build the kind of fitness these studies measured? Here's where the research becomes practical. The studies showed a consistent pattern: people with stronger cardiorespiratory fitness had far lower risks of dementia, depression, and psychotic disorders. That tells you the root issue is not simply aging.

The real problem is loss of aerobic capacity, weaker circulation, poor oxygen delivery, and declining cellular energy production over time. Your brain is one of the most energy-demanding organs in your body. When your heart, lungs, and muscles stop working efficiently together, your brain pays the price years later.

1. **Train your aerobic system often enough to force adaptation —** Cardiorespiratory fitness improves when your body repeatedly learns to deliver and use oxygen more efficiently. Light movement is better than nothing, but your cardiovascular system only adapts when you challenge it. Adaptation requires a stimulus your body isn't used to — that's the entire principle behind getting fitter.

   Try brisk walking, incline treadmill sessions, cycling, rowing, swimming, or hiking at a pace where speaking full sentences becomes slightly difficult. If you're new to exercise, start with shorter intervals and slowly increase duration each week. Your goal is progressive improvement in stamina, not exhaustion.

2. **Use intervals to raise your MET capacity faster —** The research focused heavily on MET levels, which reflect exercise capacity. One of the fastest ways to improve those numbers is **interval training**. Short bursts of harder effort teach your cardiovascular system to recover more efficiently and improve oxygen use.

For example, walk fast for one minute, then slow down for two minutes. Repeat that cycle six to 10 times. If you cycle or row, alternate moderate effort with harder bursts. Keep score of your intervals each week so you can watch your endurance improve over time. That visible progress increases motivation and reinforces consistency.

That said, more exercise isn't always better. Excessively intense training without enough recovery increases cortisol, disrupts sleep, and places constant stress on your nervous system. Over time, that backfires by impairing mitochondrial energy production and reducing your ability to recover between workouts.

Leave recovery days between harder sessions. If your resting heart rate climbs, your sleep worsens, your motivation crashes, or your workouts suddenly feel harder, your body is telling you to back off. Walking, mobility work, and light aerobic sessions on recovery days help circulation without overloading your system. Fitness improves during recovery, not during nonstop exhaustion.

3. **Build your weekly routine around movement frequency instead of intensity alone —** Your cardiorespiratory system responds best to repetition. One brutal workout followed by several sedentary days does little for long-term aerobic fitness. Daily movement creates stronger adaptations in circulation, mitochondrial function, and stress regulation.

   If you work at a desk, break up sitting every hour with two to five minutes of movement. Take walking calls. Use stairs aggressively. Add a 10-minute brisk walk after meals. Those repeated aerobic signals accumulate throughout the day and steadily improve endurance capacity.

4. **Fuel your workouts with enough carbohydrates to support aerobic metabolism —** Low-carb approaches reduce exercise capacity in many people because your muscles and brain rely heavily on glucose during sustained activity. Chronic carbohydrate restriction lowers glycogen stores and reduces training output, especially during higher-intensity aerobic exercise.

Focus on whole-food carbohydrate sources that support movement performance and recovery, such as fruit, root vegetables, white rice, and, if tolerated, properly prepared starches after gut health improves. Better fuel allows you to train longer, recover faster, and steadily improve aerobic conditioning instead of feeling drained during workouts.

5. **Track objective signs that your fitness level is improving —** Most people quit because motivation fades when results feel invisible. Measurable feedback solves that problem; when you can see your progress, momentum replaces willpower. Cardiorespiratory fitness improves gradually, so tracking matters. Watch how quickly your breathing recovers after exertion. Monitor resting heart rate trends. Measure walking distance, pace, or stair-climbing endurance every few weeks.

   If you notice that hills feel easier, recovery happens faster, or your daily energy improves, your brain and cardiovascular system are adapting. Those small improvements compound over years. The studies showed that even modest increases in fitness dramatically changed long-term dementia risk.

FAQs About Cardiorespiratory Fitness and Dementia

Q: What is cardiorespiratory fitness?

A: Cardiorespiratory fitness refers to how efficiently your heart, lungs, and muscles work together to deliver and use oxygen during physical activity. Higher fitness levels improve circulation, oxygen delivery, stress regulation, and cellular energy production, all of which influence brain health.

Q: How much did higher fitness lower dementia risk in the studies?

A: The Nature Mental Health review found that people with higher cardiorespiratory fitness had a 39% lower risk of all-cause dementia and a 36% lower risk of depression.[4] The Alzheimer's & Dementia study found that adults with exercise capacity above 9 METs had a 53% lower dementia risk compared to the least fit participants.[5]

Q: What are METs in simple terms?

A: A metabolic equivalent of task, or MET, measures how much energy your body uses during activity. Higher MET scores mean your body uses oxygen more efficiently during movement. Even small increases in MET levels were linked to meaningful reductions in dementia and depression risk.

Q: What types of exercise improve cardiorespiratory fitness best?

A: Brisk walking, incline treadmill workouts, cycling, rowing, swimming, and hiking all improve aerobic capacity when performed consistently. Interval training, such as alternating faster and slower walking periods, also helps improve endurance and oxygen use more efficiently.

Q: Is more exercise always better for brain health?

A: No. Excessively intense exercise without enough recovery raises cortisol, disrupts sleep, and strains your nervous system. Recovery days matter because your cardiovascular system and mitochondria adapt and rebuild between workouts. Consistent moderate training with proper recovery supports better long-term brain protection than nonstop high-intensity exercise.

Sources and References

- [1, 3, 4] Nature Mental Health March 20, 2026
- [2, 5] Alzheimer’s & Dementia 2026 Apr 15;18:e70326