

# Secrets of Super Agers

Learn 6 meaningful behaviors of super agers including dietary lifestyles, social lives, stress management, sleep, brain games and exercise.

LEN KRAVITZ, PHD

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## Introduction to Super Agers

Super agers are women and men, 90+ years of age, who have the mental and/or physical capabilities that are comparable to healthy middle-aged persons. Extensive research is ongoing with super agers, such as the University of California’s The 90+ Study with more than 1,600 enrolled people. In these studies, scientists and gerontologists collect data on diet, activities, medical history, medications and perform neurological and neuropsychological tests. With super agers, much more research has now pivoted towards brain health, as opposed to just longevity. Presently, your body may make it to 100 years, but your brain may start to ‘run down’ at 80 years or below. Brain aging needs to match longevity. This article will highlight research on 6 meaningful behaviors of super agers including dietary lifestyles, social lives, stress management, sleep, brain games and exercise.

## Dietary Lifestyles of Super Agers That Reduce the Risk of Dementia

Research is showing that some dietary patterns can have protective mechanisms in slowing cognitive decline and dementia. In the Rush Memory and Aging Project (Morris et al. 2015), a study of 1306 volunteers living in retirement communities and senior public housing units in the Chicago area, results suggest that even modest adjustments to the diet may help to reduce one’s risk of dementia. For example, diets with two vegetable servings per day, two berry servings per week and one fish meal per week, lead to positive brain health effects. Importantly, the data suggest that even these slight changes will also reduce the risk of Alzheimer’s disease. Thomas et al. (2022) concur and conclude from their research that a diet, which combines higher consumption of vegetables, berries, nuts, whole grains, olive oil, fish, beans and poultry, with lower consumption of meat, sugars and saturated fats, is a promising dietary strategy to prevent

dementia. The researchers suggest that this Mediterranean-style lifestyle appears to preserve the white matter microstructure in the brain, which is essential for efficient and coordinated transmission of neural communications.

## Super Agers Have Connected Social Lives

The Health and Retirement Study, tracked loneliness data from 9032 women and men, aged  $\geq 50$  (Yu Westrick & Kobayashi 2023). Loneliness status (“yes” vs. “no”) was assessed once every two years, from 1996 to 2004, with the following main categories: never lonely, lonely at 1 time point, 2 time points, and  $\geq 3$  time points. Yu and colleagues (2023) explain that loneliness is theorized to be an adverse emotional state with the perception of unfulfilled personal and social needs. Results of this study show cumulative loneliness is a prominent risk factor accelerating memory loss, especially among women aged  $\geq 65$ . The association of loneliness to memory aging worsens as men and women age. The authors conclude that reducing this loneliness will help people maintain positive memory function. Fitness professionals are well-placed to improve the social connectedness of older clients by doing the following:

- 1) Providing more time to listen to their older clients.
- 2) Encouraging their older clients to try new activities with new individuals.
- 3) Bringing clients together for meaningful events, such as themed workouts, holiday events, and special celebrations.
- 4) Introducing small group (2-10 per group) sessions of mixed aged clients (but similar ability), so as they can connect with others on a regular basis.

## Super Agers Manage Stress

Whether, and how much, psychological stress is associated with cognitive performance, is currently being debated in the scientific literature (Tian et al. 2023). Tian and colleagues (2023) submit from their current research (9656 men and women with an average age 62 yr) that the negative stress/brain health relationship is seen more often with persons from low family incomes. The researchers continue that the act of lessening stress, particularly with low-income individuals, may help improve cognitive brain health.

The beneficial role of physical activity in healthy living and managing stress is well documented in the literature. Specifically, with stress, according to a recent review (Mahindru Patil & Agrawal 2023), exercise enhances mood and self-esteem while decreasing stress tendencies—a factor known to enhance mental and physical diseases. The investigators highlight that research consistently shows that people who exercise regularly have a better frame of mind. Uniquely, and acutely, exercise has been shown to improve attention, focus, memory, cognition, language fluency and decision-making, for up to two hours following the workout (Mahindru Patil & Agrawal 2023). Mahindru and colleagues (2023) explain that regular physical activity improves the functioning of the hypothalamus-pituitary-adrenal axis (which regulates the physiological mechanisms of stress reactions, immunity and fertility), lowers cortisol secretion (the body’s stress hormone), and restores the balance of leptin and ghrelin (hormones that work together to help your body balance hunger and fullness).

Fitness professionals are encouraged to also teach their clients diaphragmatic breathing (see sidebar, Diaphragmatic breathing). Diaphragmatic breathing (also known as abdominal or belly breathing), is a simple to learn stress intervention which will help clients manage acute bouts of stress.

## Super Agers Prioritize their Sleep

There is universal agreement for optimal health and brain cognition, making time for sufficient sleep is necessary. However, many individuals fail to do this. Sleep deprivation has negative impacts on cognitive ability, mood, immune system function and glucose metabolism (Mahindru Patil & Agrawal 2023). Mahindru and associates (2023) propose that sleep presents various endocrine effects on the brain, that are unrelated to the hormonal control of metabolism at the cellular level. In a recent study, Fjell et al. (2023) found that while some people can cope with less sleep (i.e.,  $< 6$  hr/night) without negative effects on the brain, many others will experience negative cognitive function and brain health outcomes from this less than optimal sleep duration. Fjell and colleagues (2023) highlight that most adults are encouraged to get 7-8 hr/night of sleep

for peak brain cognition.

## Super Agers Engage in a Variety of Brain Stimulating Activities

According to Joubert and Chainey (2018), 20% of older adults aged 70 years or more experience difficulties in their everyday activities and lose their individual independence. It is well established that normal aging induces anatomical and physiological changes in brain health that impede brain speed processing, working memory and executive functions. Physiologically, these changes are primarily the result of a dysfunction in the prefrontal cortex of the brain, which is especially vulnerable to atrophy in aging (Joubert & Chainey 2018). However, super agers are very involved in a variety of cognitive enhancing activities, such as doing crossword puzzles, Sudoku games, reading, going to lectures, listening to music and playing word games. Joubert and Chainey (2018) summarize from their review, that these activities induce positive changes in the brain. These cognitive activities improve frontal lobe functioning and increase white matter integrity in the frontal and parietal brain regions (Joubert & Chainey 2018). Joubert and Chainey (2018) continue that cognitive stimulating activities also improve problem solving and fluid intelligence (i.e., the ability to reason and think flexibly).

## Super Agers Exercise Regularly

Study results demonstrate that exercise is associated with improved physical health, satisfaction with life, improved cognitive functioning, and psychological well-being. Exercise can influence the production of neurotrophic factors providing improvements in brain functionality, through signaling, growth and cell differentiation (i.e., the process during which young, immature (unspecialized) cells take on individual characteristics and mature). Aerobic and anaerobic exercise can increase skeletal muscle production of brain-derived neurotrophic factor, referred to as BDNF (Fernandes et al. 2020). This compound is carried by the bloodstream crossing the blood-brain barrier, promoting its activation in the central nervous system. BDNF has been shown to be essential for learning and memory (Fernandes et al. 2020). Moreover, Fernandes et al. (2020) and a growing body of literature suggests that regular aerobic exercise specifically, may reduce cognitive impairment and reduce dementia risk.

## Concluding Remarks

It seems very clear from the research that a multi-factor lifestyle approach will enhance a person's chances of being a super ager. To be a super ager, the research recommends a Mediterranean-style lifestyle, an engaged and active social life, the ability to manage daily stressors, adequate sleep (7-8 hr/night), regular participation in cognitive stimulating activities and consistent exercise. What are we waiting for? Let's get this information out there to all of our students and clients...this is very doable!

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### Diaphragmatic Breathing to Help Lesson Stress

Diaphragmatic breathing is a stress intervention that can help lesson a stressor, lower high blood pressure and decrease anxiety and depression (Fish 2018). Fish (2018) highlights when clients become stressed, they often lift their shoulders to inhale and exhale and their breath becomes short and shallow—a pattern which, if sustained, may actually intensify the effect of the stressor. With diaphragmatic breathing, have clients perform slow, even, deep breathing through the nose, for 5 to 10 minutes (progressing to 15 to 20 minutes), while engaging the diaphragm (on the inhalation). When the diaphragm is engaged (i.e., lowers into the abdominal cavity), the belly will protrude (easily observed by placing a hand on the abdomen) on the inhalation, and there is minimal shoulder and chest movement.

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### Len Kravitz, PhD

Len Kravitz, PhD is a professor and program coordinator of exercise science at the University of New Mexico where he recently received the Presidential Award of Distinction and the Outstanding Teacher of the Year award. In addition to being a 2016 inductee into the National Fitness Hall of Fame, Dr. Kravitz was awarded the Fitness Educator of the Year by the American Council on Exercise. Just recently, ACSM honored him with writing the 'Paper of the Year' for the ACSM Health and Fitness Journal.

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