

# Deep Dive Into Brain Health and Health Coaching





# About YourCoach.Health

At YourCoach.Health we stand up, scale and operate best-in-class health coaching services for the health and care industry via our easily and seamlessly embedded technology, powered by the largest army of validated health and wellness coaches. If you are an organization looking to integrate or scale health coaching for your population or around your product or service, we are here for you!



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## **Executive Summary**

The human brain is the command center for our nervous system and it's central to everything we do. It's one of the most critical and impactful organs with an influence on our physical, mental and emotional health and wellbeing. It enables our thoughts, memory, movement, and emotions. It dictates our health and our happiness.

Optimal brain health doesn't just mean the absence of disease. Instead, it means seamless cognitive functioning, resilience, the ability to cope with the day-today stressors of life, actualize goals, work productively, contribute to communities and so, so much more.

Unfortunately, brain health is far from optimal in the U.S. today. Neurodegenerative diseases, like Alzheimer's and dementia, remain a significant public health concern with far-reaching implications. In fact, over <u>6.7 million</u> Americans aged 65 and older were affected with Alzheimer's in 2021, alone. Conditions such as epilepsy, Parkinson's and multiple sclerosis are also strongly prevalent as are chronic migraines and severe headaches (an estimated <u>1 in 6</u> Americans have suffered from the latter in the last 3 months). Brain health is also profoundly connected to mental health, with neurochemical bases for many common mental illnesses like anxiety and depression. We've shared in our previous Mental Health Deep Dive how staggeringly prevalent mental health conditions are across the U.S., with nearly <u>one</u> <u>in five</u> adults and <u>one in six</u> children in the U.S. afflicted with a mental illness. Conditions like depression, anxiety, and bipolar disorder can impact cognitive function and overall brain well-being and vice versa.

Health coaches, through their personalized and evidence-based approaches, have proven effective in preventing and managing brain diseases and helping clients maintain overall health and well-being. They work closely with clients to develop personalized strategies for protecting and preserving brain health, especially as it changes with age. Health coaches empower clients by providing evidence-based information on dietary choices, lifestyle modifications, and educate clients with stress management techniques.



## What Is Brain Health?

Brain health <u>refers</u> to the overall well-being and optimal functioning of the brain. The US Centers for Disease Control and Prevention <u>define</u> brain health as the ability to perform all the mental processes of cognition, including to learn and judge, use language, and remember.

It underlies one's ability to communicate, make decisions, problem-solve and live a productive and useful life. Because the brain controls so much of daily function, it's arguably the single most valuable organ in the human body.

### Insight:

The brain only <u>feels pleasure</u> and there are <u>no pain</u> <u>receptors</u> in the brain. <u>Migraine and headache pain</u> arise in the meninges, or the brain's covering.





# <u>Key components</u> of brain health include:



### **Cognitive Function**

This involves the ability to think, reason, learn, remember, and solve problems. Memory is also a significant part of <u>cognitive function</u>. The brain stores and retrieves information, allowing us to remember past experiences and learn from them. It also enables us to understand and produce spoken and written language.



The brain is responsible for controlling our voluntary and involuntary movements. <u>Motor control</u> involves planning, coordinating, and executing movements. The primary motor cortex, located in the frontal lobe, is particularly important for controlling voluntary muscle movements.



The brain plays a crucial role in regulating emotions and moods. Different brain regions are involved in *processing emotions*. *Neurotransmitters* (chemical messengers) like serotonin and dopamine influence mood.



This involves <u>the ability to process tactile sensations</u> like touch, temperature, and pain. The <u>somatosensory</u> <u>cortex</u> in the brain plays a crucial role in interpreting and discerning various tactile stimuli, enabling us to interact with our environment and experience physical sensations.



## Why Is Brain Health Important?



### **Cognitive Function**

A healthy brain is essential for <u>cognitive functions</u> like thinking, reasoning, problem-solving, memory, and decision-making. These abilities are fundamental for daily life tasks, productivity, and maintaining independence.

### Physical Health

The brain controls many bodily functions, and its health can impact physical well-being. For example, brain health <u>is closely linked</u> to cardiovascular health, and a healthy brain is less prone to conditions like strokes. <u>Studies have shown</u> that atrial fibrillation, even in strokefree individuals, is associated with an increased incidence of dementia and silent cerebral damage.

### Difference Emotional Well-being

The brain plays a critical role in <u>regulating</u> <u>emotions</u>. Good brain health contributes to emotional resilience, the ability to cope with stress, and mantain a positive outlook on life.



A healthy brain <u>enables</u> clear thinking, emotional stability, and the ability to engage in daily activities, leading to a higher overall quality of life. Conversely, impaired brain health can diminish cognitive and emotional capacities, <u>studies show</u>, impacting one's ability to enjoy life and maintain independence.

# Why Is Brain Health Important?



### Mental Health

Brain health is *closely tied* to mental health. Conditions like depression, anxiety, and other mood disorders often involve changes in brain function. Moreover, most scientists believe mental illness might result from communication complications involving neurons in the brain (neurotransmission). For example, the level of the neurotransmitter serotonin is lower in individuals who have depression.



### **Productivity and Performance**

Whether at work, school, or in daily life, a healthy brain is essential for productivity and optimal performance. It helps us focus, learn, adapt, and excel in various tasks. Healthy and optimal diet, music, physical exercises, and meditation were found by scientists to be effective approaches to increasing brain productivity.



As we age, maintaining brain health becomes increasingly important. A healthy brain can delay the onset of age-related cognitive decline and neurodegenerative diseases such as Alzheimer's and Parkinson's, allowing individuals to lead more independent and fulfilling lives as they grow older.



Neuroimaging and lesion studies <u>have identified</u> a network of brain regions that support social interaction, including the ability to understand and partake in jokes-some scientists call it the "social brain." The right temporo-parietal junction, for instance, is important when thinking about another person's mental state, whereas the amygdala is important for the interpretation of emotions and facial expressions and fear processing.



## How Does Mental Health Affect The Brain (and vice versa)?

Mental health refers to a person's emotional, psychological, and social well-being, while the brain is the central organ that controls and regulates various bodily functions, including emotions, thoughts, and behaviors.

The relationship between *mental health and the brain* is bidirectional, meaning that not only can mental health affect the brain, but the brain can also influence mental health. Factors such as genetics, early life experiences, and environmental influences all play a role in the development and course of mental health conditions.

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### Here are some ways in which *mental health can affect the brain*:



### Neurochemical Imbalances

Mental health conditions such as depression, anxiety, and schizophrenia are often associated with imbalances in neurotransmitters (chemical messengers) in the brain. For example, low levels of <u>serotonin are linked to depression</u>, while imbalances in dopamine are associated with conditions like schizophrenia. These imbalances can impact mood, cognition, and behavior.

### ີ່ (ເບິ່ງ Structural Changes

Prolonged and severe mental health disorders <u>can lead</u> to structural changes in the brain. For instance, chronic stress and untreated depression can cause atrophy (shrinkage) in certain brain regions, particularly the hippocampus, which is involved in memory and emotion regulation. Conversely, some therapies and medications can promote neurogenesis (the growth of new neurons) and counteract these structural changes.



### 怨。Altered Brain Function

Mental health conditions can alter how the brain functions. For example, individuals with anxiety disorders may have heightened activity in brain regions responsible for fear and anxiety responses, while those with attention deficit hyperactivity disorder (ADHD) may exhibit differences in the prefrontal cortex, which plays a role in executive functions like attention and impulse control.



### Cognitive Impairments

Mental health conditions can affect cognitive functions such as memory, attention, and decision-making. Conditions like depression can lead to cognitive deficits, often referred to as "brain fog," which can impair a person's ability to think clearly and concentrate.



### Here are some ways in which *mental health can affect the brain*:



### Inflammatory Responses

Emerging research <u>suggests a connection</u> between mental health and inflammation in the brain. Chronic inflammation has been linked to conditions like <u>depression</u> and <u>schizophrenia</u>, and it's thought to contribute to the development and exacerbation of these disorders.



Epigenetic modifications can occur in response to environmental factors, including <u>stress</u> and <u>trauma</u>. These changes can affect gene expression in the brain and may be involved in the development of mental health conditions.



Mental health conditions <u>can create a feedback loop</u> in which the symptoms of the condition can exacerbate the underlying neurological issues. For example, chronic stress <u>can contribute</u> to structural brain changes, which can then perpetuate stress and related mental health issues.







# The State of Brain Health in the U.S.

### Data:



1 in 6 Americans have suffered from migraines or severe headaches in the last 3 months.

The prevalence and burden of self-reported migraines and severe headaches in the U.S. adult population is high, affecting roughly 1 out of every 6 Americans over a 3-month period, according to the latest 2018 data. Moreover, women were nearly twice as likely as men to have had a severe headache or migraine-20.1% versus 10.6%.



Source: National Health Interview Survey, 2018 data

Data also shows that there is a higher burden of migraine in those aged 18-44 (17.9%), people who are unemployed (21.4%), those with family income less than \$35,000 per year (19.9%), and the elderly and disabled (16.4%).

**Insight:** While migraines can affect people of any gender, sex, age, race, ethnicity, or background, they're especially common in women. Three times more women live with migraines than men, and research shows that hormones play a role. Girls are more likely to start experiencing migraine attacks when they get their first period, and migraines in women are most common during their childbearing years.

According to a 2023 survey conducted by the Dana Foundation in partnership with Research!America, more than 8 in 10 Americans are affected by brain health issues, directly. An overwhelming majority-82%-said that they, or someone close to them, have experienced at least one brain health condition, with depression (55%), Alzheimer's disease or dementia (48%), substance use disorder or addiction (42%), and generalized anxiety disorder (42%) being the most frequent.



## The State of Brain Health in the U.S.

### Have you or anyone close to you had any of the following conditions?



In addition, survey results showed that Americans are not knowledgeable about brain health research—66% reported having little or no knowledge about this topic.

### Data:

Approximately

annual costs of major neurologic diseases to the U.S. economy. By 2030,

will be spent treating stroke and dementia alone.

Source: A Research! America survey of U.S. adults conducted in partnership with the Dana Foundation and Zogby Analytics in August 2022.



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# The Most Common Brain Conditions In The U.S.

Disorder	Description	Prevalence	Symptoms
<u>Alzheimer's</u> <u>Disease</u>	Progressive neurodegenerative disorder affecting memory, thinking, and behavior.	Approximately <u>6.7 million</u> Americans aged 65 and older had Alzheimer's in 2021, with millions more at risk or undiagnosed.	<ul> <li>Memory loss</li> <li>Difficulty problem-sol</li> <li>Confusion</li> <li>Changes in mood and</li> <li>Difficulty with language</li> <li>Difficulty recognizing</li> </ul>
<u>Stroke</u>	Sudden interruption of blood flow to the brain, leading to brain cell damage.	Approximately <u>795,000 strokes</u> occur each year in the U.S.	<ul> <li>Sudden numbness or</li> <li>Confusion</li> <li>Trouble speaking or un</li> <li>Severe headache</li> <li>Trouble with vision in</li> <li>Loss of balance and compared to the severe of the sev</li></ul>
<u>Migraine</u>	Recurrent and severe headaches often accompanied by nausea, vomiting, and sensitivity to light and sound.	Approximately <u>39 million</u> Americans experience migraines, with 12% of the population affected.	<ul> <li>Severe headache with</li> <li>Nausea and vomiting</li> <li>Sensitivity to light, no</li> <li>Aura (visual disturbar</li> <li>Throbbing pain on one</li> </ul>
<u>Epilepsy</u>	Neurological disorder characterized by recurrent seizures due to abnormal brain activity.	An estimated <u>3.4 million</u> adults and 470,000 children have epilepsy in the U.S.	<ul> <li>Seizures (varied types</li> <li>Loss of consciousness</li> <li>Staring spells</li> <li>Muscle stiffness or jes</li> <li>Confusion after a seiz</li> </ul>
<u>Parkinson's Disease</u>	Neurodegenerative disorder affecting movement, causing tremors, stiffness, and balance problems.	Approximately <u>1 million</u> Americans live with Parkinson's disease, with 90,000 new cases diagnosed each year.	<ul> <li>Tremors (often in hand</li> <li>Bradykinesia (slownes)</li> <li>Muscle rigidity</li> <li>Balance problems</li> <li>Changes in speech and</li> <li>Postural instability</li> </ul>

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nds) ess of movement)

nd writing

## The Most Common Brain Conditions In The U.S.

Disorder	Description	Prevalence	Symptoms
<u>Multiple</u> Sclerosis (MS)	Autoimmune disease affecting the central nervous system, leading to a wide range of symptoms and disabilities.	Approximately <u>1 million</u> Americans have MS, and it is more common in women than men.	<ul> <li>Fatigue</li> <li>Numbness or tingling</li> <li>Muscle weakness</li> <li>Difficulty with coordin</li> <li>Problems with vision (</li> <li>Cognitive impairment</li> </ul>
<u>Traumatic Brain</u> Injury (TBI)	Brain injuries resulting from blows or jolts to the head, leading to cognitive and behavioral impairments.	TBIs contribute to over <u>2.8</u> <u>million</u> emergency department visits, hospitalizations, and deaths in the U.S. annually.	<ul> <li>Headaches</li> <li>Confusion or disorient</li> <li>Memory problems</li> <li>Nausea and vomiting</li> <li>Sensory changes (visi</li> <li>Mood swings and beh</li> </ul>

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ion, hearing) Iavioral changes

## The State Of Mental Health In the U.S.

Data:

**\*\*\*** 

1 in 5 U.S. adults live with a mental illness.

Mental health conditions are prevalent in the United States. According to Mental Health America's 2023 Report, nearly one in five adults in the U.S. experiences a mental illness in any given year. Moreover, one in six children aged 2 to 8 has a diagnosed mental, emotional, or behavioral disorder.

Data shows that the prevalence of mental illness *is higher* among young adults aged 18-25 years and among adults reporting two or more races. Females report mental health symptoms more frequently than males. Studies *found* that women are twice as likely to suffer from anxiety and almost <u>2 times more likely</u> to suffer from depression than men.

Mental health disparities exist across different populations. Factors such as race, ethnicity, socioeconomic status, gender, and sexual orientation can influence the prevalence, access to care, and quality of mental health services.



### Past Year Prevelence of Any Mental Illness Among U.S. Adults (2021)

## The Most Common Mental Health Conditions In The U.S.

Disorder	Description	Prevalence	Symptoms
<u>Depression</u>	Common mental health disorder characterized by persistent sadness or low mood, affecting mood, cognition, and overall well-being.	Approximately <u>21%</u> of adults in the U.S. experience depression.	<ul> <li>Persistent sadness or</li> <li>Loss of interest or ple</li> <li>Changes in appetite a</li> <li>Difficulty concentration</li> <li>Physical symptoms limits</li> </ul>
<u>Anxiety Disorders</u>	Group of mental health disorders (e.g., generalized anxiety disorder, social anxiety disorder, panic disorder) characterized by excessive worry or fear, affecting mood and cognition.	Anxiety disorders affect over <u>19%</u> of the U.S. population.	<ul> <li>Excessive worry or fea</li> <li>Changes in appetite a</li> <li>Physical symptoms li</li> <li>Social withdrawal (so</li> <li>Panic attacks (panic of Excessive self-conscious)</li> </ul>
<u>Attention-Deficit/</u> <u>Hyperactivity</u> <u>Disorder (ADHD)</u>	Neurodevelopmental disorder characterized by difficulties with attention, hyperactivity, and impulsivity.	ADHD affects approximately <u>9.4%</u> of children and 4.4% of adults in the U.S.	<ul> <li>Inattention (difficulty</li> <li>Hyperactivity (restless</li> <li>Impulsivity (acting with</li> <li>Forgetfulness</li> <li>Difficulty following in</li> <li>Trouble with organization</li> </ul>
<u>Bipolar Disorder</u>	Mood disorder marked by extreme mood swings between manic and depressive states.	Bipolar disorder affects approximately <u>2.8%</u> of adults in the U.S.	<ul> <li>Manic episodes (eleval</li> <li>Depressive episodes ( lack of interest)</li> <li>Impaired decision-matching</li> <li>Changes in sleep patteine</li> <li>Psychomotor agitatio</li> <li>Rapid speech and rac</li> </ul>

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ar (anxiety) and sleep patterns ike restlessness or fatigue ocial anxiety) disorder) iousness (social anxiety)

y focusing) sness, fidgeting) ithout thinking)

nstructions ntion and time management

ated mood, increased energy) (profound sadness,

aking terns on or slowing cing thoughts

# How Health Coaches Can and Do Help

Health coaching can be a keystone to ensuring important behavior changes become incorporated into daily routines, which is essential when protecting and promoting brain health. Coaches leverage an <u>evidence-based approach</u> to help with managing disease catalyzing changes in nutrition, behavior, physical activity levels, self-acceptance, mental health improvements, enhanced quality of life, and more.

At the heart of health coaching is a holistic approach, which considers the person as a whole, rather than focusing on an individual illness or health concern.

Health coaches maintain a client-centered approach, wherein the client is the expert in choosing their goals, engaging in self-discovery or active learning processes, and self-monitoring behaviors to increase accountability, all with the support and help of a health coach, until the desired outcomes are achieved. Instead of telling clients what they should or shouldn't do, coaches help clients to discover their own power and path to change.





# A Health Coach is ...



A highly skilled and certified professional



Knowledgeable in human behavior, motivational techniques and health outcomes



A change agent helping clients set and achieve health goals and build new habits



Trained in helping a client maintain a positive and healthy mindset while working towards health and wellness goals by focusing on their strengths





# A Health Coach is **NOT**

Although health coaches can and do work alongside patient care teams or in collaboration with other health care professionals to help clients enact health change day-to-day, it's important to understand their scope of practice.



### A health coach is NOT a Doctor

Health coaches can not diagnose or prescribe. Health coaches are integral members of the health and care team and work with patients in helping them reach their health & wellness goals and adhere to a plan prescribed by their doctor.



Health coaches don't need to be therapists or psychologists, and great coaches don't try to mimic what a mental healthcare professional does. These professionals can complement one another and often work together.



### A health coach is NOT a Personal Trainer

While health coaches encourage physical activity, they focus on many other aspects of a person's wellbeing including emotional and mental wellness. They do not typically create fitness regimens in the same way that personal trainers do. However, some health coaches do hold fitness certifications and can help those who are seeking both a health coach and a personal trainer.

**Insight:** <u>Demystifying Health Coaching: Unpacking the Differences</u> Between Dieticians, Nutritionists & Health Coaches



### A health coach is NOT a Nutritionist or Dietitian

Health coaches can help clients establish action plans for generalized healthy eating behaviors, whereas nutritionists and dietitians can prescribe meal plans and give specific nutritional advice to clients according to their medical needs or goals.

# How Health Coaches Can and Do Help Clients Maintain Brain Health

### **Education and** Awareness

Coaches provide clients with information about the importance of brain health and mental wellbeing. They educate clients about the factors that influence brain health, such as nutrition, exercise, sleep, stress management, and social connections. Increasing awareness is the first step towards making informed choices.

### **Goal Setting**

Coaches help clients set specific, measurable, achievable, relevant, and time-bound (SMART) goals related to brain health. These goals may include adopting a brain-healthy diet, establishing a regular exercise routine, or improving sleep patterns. Setting clear objectives gives clients a sense of direction and motivation.

### **Personalized Plans**

Coaches work with clients to create individualized wellness plans tailored to their unique needs, preferences, and circumstances. These plans take into account factors like age, current health status, lifestyle, and any existing mental health or brain health conditions.

How Health Coaches Can and Do Help

### **Behavioral Change Strategies**

Coaches employ evidence-based strategies to facilitate behavioral change. They help clients identify barriers to healthy habits and develop practical strategies to overcome them. This may involve techniques like positive reinforcement, mindfulness, and habit formation.

# How Health Coaches Can and Do Help Clients Maintain Brain Health

### Nutrition Guidance

Coaches provide support around nutrition choices that support brain health. This includes educating clients on foods rich in antioxidants, omega-3 fatty acids, and other nutrients known to benefit brain function. They also help clients reduce the consumption of foods that may be detrimental to mental wellbeing, such as processed and sugary foods.

### **Physical Activity** Planning

Coaches assist clients in developing and adhering to a regular exercise regimen. Exercise is known to have numerous mental health benefits, including reducing symptoms of anxiety and depression, improving mood, and enhancing cognitive function.

### Stress Management

Stress is a significant factor in mental health and brain health. Coaches teach stress management techniques, such as relaxation exercises, meditation, and mindfulness, to help clients reduce stress levels and improve resilience.

Brain Health and Health Coaching

How Health Coaches Can and Do Help



Poor sleep can negatively impact brain health and mental wellbeing. Coaches work with clients to establish healthy sleep routines, improve sleep hygiene, and address common sleep disorders like insomnia.



# How Health Coaches Can and Do Help Clients Maintain Brain Health

### Accountability and Support

Coaches provide ongoing support and accountability. Regular check-ins and progress assessments help clients stay on track with their wellness goals. This support system can be crucial in maintaining motivation and consistency.

### Referrals and Collaboration

Coaches recognize when clients may benefit from additional professional support, such as therapy or medical care. They can provide referrals to mental health and medical professionals and collaborate with them to ensure clients receive comprehensive care.

### Lifestyle Integration

Coaches guide the integration of brain-healthy practices into clients' daily lives. This makes it more likely for clients to sustain positive changes in the long term. En Ulti coa con The effic con cho

**Insight:** <u>Studies show</u> meditation is associated with structural changes in brain areas responsible for cognitive and emotional processing, attention, interoception and sensory processing. That change <u>is also linked</u> with improved working memory and skilled executive decision-making.



### Empowerment

Ultimately, health and wellness coaches empower clients to take control of their own well-being. They help clients build selfefficacy, self-awareness, and the confidence to make healthy choices independently.

# The Science of Health Coaching



# **Changing Behaviors for Patients with Cognitive Impairment and Dementia**

A 2019 pilot study showed statistically significant and clinically meaningful increases in physical activity, adherence to the Mediterranean diet, cognitive/social activity, and quality of life for coaching patients when compared to the standard-of-care control group.

The coaching group demonstrated statistically significant improvements in:



While the control group showed declines for all scores on post-assessment.

The intervention group participated in the program, which consisted of weekly motivational interviewing phone calls and three visits with a "Brain Health Champion" health coach, who guided participants in achieving personalized goals.

### Comparison of main results between groups

Variable	E	3HC (n = 19)	)	SOC (n = 18)		
	Pre	Post	Change	Pre	Post	Change
IPAQ	4167.02	6919.01	2752	5335.35	2579.71	-2756
	(4428.84)	(4944.15)	(3600)	(4615.80)	(2336.52)	(4648)
MedScore	23.03	29.32	7.50	22.94	21.72	-1.22
	(5.92)	(8.04)	(12.77)	(4.81)	(6.71)	(5.15)
FCAS	58.95	67.80	8.84	64.67	60.22	-4.44
	(13.56)	(19.29)	(15.96)	(16.80)	(16.64)	(7.33)
FQOL	89.66	97.58	7.92	88.67	83.17	-5.50
	(11.54)	(8.82)	(10.44)	(15.57)	(14.25)	(7.07)

Notes: Values reported as mean (SD). Larger values represent more positive outcomes. Abbreviations: BHC, Brain Health Champion; SOC, standard of care; IPAQ, International Physical Activity Questionnaire; MedScore, Mediterranean Diet Score; FCAS, Florida Cognitive Activities Scale; FQOL, Flanagan Quality of Life Scale.

**Source:** Schwartz HEM, Bay CP, McFeeley BM, Krivanek TJ, Daffner KR, Gale SA. The Brain Health Champion study: Health coaching changes behaviors in patients with cognitive impairment. Alzheimers Dement (NY). 2019 Nov 12;5:771-779.

# Changing Behaviors for Patients with Cognitive Impairment and Dementia

The authors conclude:

Our results demonstrate the feasibility and potential efficacy of a health coaching approach in changing health behaviors in cognitively impaired and at-risk patients

An updated <u>2023 study</u>, conducted 2 years after the previous one, with a similar study design, confirmed previous study findings that health coaching is an effective approach for promoting brain-healthy behaviors, particularly increasing cognitive activities and Mediterranean diet adherence.

The new study included cognitively normal, older adults at risk for dementia and added a mobile health platform, with two-way texting, and wearable fitness trackers, to the health coaching intervention. With guidance from a health coach, the intervention group set personalized goals, reinforced by weekly video calls, mobile messaging, one dietitian consult, and 30-minute in-person or virtual visits every six weeks. In the control group, educational materials were sent every six weeks to supplement usual care.

Study results showed that **coaching participants increased participation in cognitive activities and adherence to a Mediterranean diet** based on photographed food logs compared to the control group. Participants in both groups demonstrated significantly increased scores on the composite neuropsychological assessment, quality of life measures, and an increase in physical activity.

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# Alzheimer's Disease Prevention & Management

<u>A recent 2023 study</u> on digital health coaching effectiveness on cognition in adults at risk for Alzheimer's and related dementias (ADRD) posted promising results. The effectiveness of health coaching (HC) was evaluated and compared with a health education (HE) intervention, representing the current standard of care, in a sample of 216 adults between the ages of 45 and 75 years who were at risk for developing ADRD.

HC participants received personalized coaching from a health coach focusing on nutrition, physical activity, sleep, stress, social engagement, and cognitive activity. HE participants received biweekly education materials focusing on the same modifiable lifestyle factors addressed by HC.

According to study results, **self-reported global cognition** (ECog-12) scores **improved only in the health coaching (HC) group** (16.18 to 15.52, t(96) = 2.23, p = 0.03), and there were no significant changes for the control group.

## ECog-12 score Change at 4-month comparing to baseline



### Researchers admitted that:

Health coaching is an effective way to improve cognition and may be superior to traditional health education interventions. These results support previous research that speculated health coaching (HC) may have the potential to improve cognitive ability. This study builds upon prior findings by demonstrating that the behavior change realized through HC interventions may be accompanied by measurable improvements in cognition in a population at-risk for ADRD.

**Source:** Campitelli A, Gills JL, Jones MD, Paulson S, Myers J, Bryk K, Madero EN, Glenn JM, Rodgers CH, Kempkes JA, Gray M. The effect of a digital health coaching and health education protocol on cognition in adults at-risk for Alzheimer's. Geroscience. 2023 Apr;45(2):1147-1159.

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**Source:** Campitelli A, Gills JL, Jones MD, Paulson S, Myers J, Bryk K, Madero EN, Glenn JM, Rodgers CH, Kempkes JA, Gray M. The effect of a digital health coaching and health education protocol on cognition in adults at-risk for Alzheimer's. Geroscience. 2023 Apr;45(2):1147-1159.

# **Alzheimer's Disease Prevention** & Management

A 2022 study aimed to explore the feasibility of health coaching interventions for patients with Alzheimer's disease (AD) showed positive results.

Study participants included diverse older adults (60+) living in Richmond, VA, with incomes below \$12,000/year and managing diabetic/cardiovascular symptoms in addition to AD. The health coaching sessions were offered to provide Alzheimer's disease (AD) lifestyle risk reduction education, goal setting, and support in terms of motivation and self-efficacy.

Thirty-nine (95%) of subjects successfully participated in a health coaching program for 12 weeks from 2019 to 2020; on average, 11 sessions per participant were completed.





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# Health Coaching Effects on Targets

Disorder	Sample size	Time 1	Time 2	Time 3	Time 4	TIME f-value (p-value) effect size	Time*Memory Problem Status f-value (p-value) effect size
Memory Complaints	n=28	0.82	0.64	0.64	0.57	2.78 (.11).09	2.97 (.10).10
Smoking Score	n=6	6.16	6	6.33	3.33	46.7 (.001).90	0.16 (.71).04
Poor mental health in past 30 days	n=26	13.92	10.76	8.54	8.62	4.13 (.05).14	1.76 (.20).07
Tired Days in past 30 days	n=25	13.16	8.12	8.76	9.24	1.01 (.32).04	0.41 (.53).02
Worried Days over past 30 days	n=27	13.7	11.03	9.44	6.44	6.47 (.02).20	7.09 (.01).22
Depression	n=28	0.96	0.79	0.93	0.86	6.58 (.02).20^	2.16 (.15).08
Alcohol Use	n=28	0.57	0.54	0.46	0.43	4.20 (.05).14	0.55 (.46).02
Social Isolation	n=28	0.71	0.68	0.64	0.64	0.39 (.54).01	5.34 (.03).17
Physical Inactivity	n=28	0.39	0.32	0.29	0.54	6.45 (.02).19*	6.90 (.01).21
Total Risk Index	n=28	3.67	3.32	3.357	3.53	5.05 (.03).16*	3.10 (.09).10^

Source: Rhodes A, Inker J, Richardson J, Zanjani F. Alzheimer's Disease Prevention Health Coaching. J Prev Alzheimers Dis. 2022;9(2):277-285.

### Authours concluded that study findings

Surrounding participant engagement and positive trends in AD risk reduction support the hypothesis that telephone-based health coaching is a practical and feasible AD risk reduction intervention

### Between- Subjects Memory Problem Status f-value (p-value) effect size

37.7 (<.001).59

3.64 (.13).48

5.77 (.02).19

7.07 (.01).23

3.85 (.06).13

0.76 (.39).03

0.04 (.84).002

0.52 (.48).02

.001 (.98).00

.75 (.40).03



## **Anxiety and Depression**

A recent study, published in February 2023 in the International Journal of Scientific and Research Publications, provides encouraging results around changes in work and clinical outcomes for employees after using individualized mental health coaching services. The data was collected from 872 employees at CuraLinc Healthcare from 2020 to 2022 with a pre- and post-measurement research design.

After five weeks of online health coaching interventions, significant improvements were observed: work absenteeism hours were reduced by 88%, productivity level was increased by 32%, and severity of depression symptoms was reduced by 66%.

The average total hours of absence and lost work productivity combined was reduced from 52.8 hours at Pre to 14.5 hours at Post measurement. The percentage of all employees at-risk for clinical depression was reduced from 20% at Pre to zero at Post.



Work Productivity: Average



Problem cut-off: 4 hours or more
3

## **Anxiety and Depression**



Scores

6-DHd



Source: Dr. Mark Attridge, David Pawlowski and Sean Fogarty (2023); Mental Health Coaching from Employee Assistance Program Improves Depression and Employee Work Outcomes: Longitudinal Results from CuraLinc Healthcare 2020-2022; International Journal of Scientific and Research Publications (IJSRP) 13(02)

Results from a 2021 study, which included 1496 participants from the U.S., showed significant decreases in symptoms among clients with moderate levels of anxiety and depression during initial weeks of coaching.

### Data:

89% of study participants with anxiety and/ or depression demonstrated significant improvements in the Generalized Anxiety Disorder-7 scale (anxiety) or Patient Health Questionnaire-9 (depression) after working with a health coach.



## **Anxiety and Depression**

A recent <u>2023 randomized controlled trial</u> demonstrated decreases in symptoms of depression (-26%) and anxiety (-36%) among women with mild to moderate postpartum depression and/or anxiety after working with a health coach.

2019 randomized control trial aimed to examine the effect of coaching and weekly recommendations delivered digitally on depression, anxiety, and app use proves coaching effectiveness in anxiety reduction and improvement in depression symptoms.

<u>A 2012 study</u> demonstrated significant improvements from baseline in depression (PHQ-9 scores) and HbA1c levels among rural-living older adults with diabetes and depression after 6 months participation in behavior health coaching intervention.







## ADHD

A comprehensive descriptive literature review of studies examining ADHD coaching outcomes concluded that coaching supports improved ADHD symptoms and executive functioning among college students. Out of the 19 studies included in the analysis, researchers found positive outcomes in:

- 1 Well-being improvements
- 2 Maintenance of gains
- 3 Goals accomplishment
- 4 Participant satisfaction

Results from a <u>2016 study</u> conducted in Spain provide information on the potential benefits of coaching as a complementary treatment for children with ADHD. After 6 months of coaching, clinical improvements were observed in 80% of participants aged between 6 and 12 years old with a 34.6% mean reduction in symptoms. <u>A study</u> examining the efficacy of ADHD coaching for adults concluded that ADHD coaching had a positive impact on the lives of adults with ADHD. Analyzing data from 45 study participants, researchers reported statistically significant improvements in all 5 factors related to 22 areas of concern.

<u>A 2019 case study</u> examining the collaboration between ADHDfocused health and wellness coaching and psychiatric care showed improvements in self-efficacy and various functional impairments, including organizational skills and academic achievement. The client maintained behavioral changes for more than 6 months and achieved her goal of resuming graduate studies, successfully accomplishing her program. The study concluded that

Health and wellness coaching can be effective in supporting beneficial outcomes and can be useful in the multimodal management of ADHD



# Quality of Life & Well-being

A 2022 randomized controlled study showed significant improvements in the scores of menopausal symptoms, depression symptoms, and quality of life among perimenopausal and postmenopausal women who participated in health coaching intervention compared to control groups.

A study on wellness coaching for improving quality of life among 100 employees, conducted by Mayo Clinic in 2014, found that 12 weeks of wellness coaching led to improvements in overall quality of life, the five domains of quality of life, depressive symptoms, and perceived stress levels.

- Stress levels decreased from a mean of 14.3 at baseline to 11.0
- Depression scores (PHQ-9) also decreased from a mean of 4.6 to 2.1
- The percentage of participants in the moderate to severe range decreased from 12% to 1%, and in the mild range decreased from 32% to 11%
- The number of participants who reported having at least one troubling symptom on the Patient Health Questionnaire-9 at baseline was also reduced by half at 12 weeks.

Another study, published April 2022, confirms the significance of telecoaching on employee mental health that was delivered as part of an employer sponsored platform.

- After 2-3 sessions with a health coach, well-being scores significantly increased by an average of 2.12 points, and after 4+ sessions by 5.27 points
- Among participants who began care with elevated levels of burnout, there was a significant decrease (21%) in burnout
- Other results showed significant reductions in presenteeism and absenteeism among those who worked with a health coach

Another study, published April 2022, confirms the significance of telecoaching on employee mental health that was delivered as part of an employer sponsored platform.

A 2022 case study describes the positive effect of health coaching for both patients and caregivers. After 8 coaching sessions over the phone, caregivers showed improvements in quality of life and self-efficacy scores, while patients experienced no readmissions, and had better mood, quality of life scores, and readiness in participation.

## We are here for you!

We stand up, scale and operate best-in-class health coaching services for the health and care industry via our easily and seamlessly embedded technology, powered by the largest army of validated health and wellness coaches. If you are an organization looking to integrate or scale health coaching for your population or around your product or service, we are here for you!





# About YourCoach

YourCoach.Health is the only operating system for behavior change, powered by health coaches. Our industry partners entrust us to stand up or augment their health coaching operations utilizing our APIs, widgets and techaugmented army of validated and credentialed health coaches to surround their existing product or service. We're the premier virtual home for health and wellness coaching, an ecosystem built to empower health coaches while expanding access to their services through our industry partnerships. Join us on the Health Coaching Revolution as we strive to deliver the power of health coaching to the 8.5 billion global population by 2030.

## Our mission

By the year 2030 our mission is for the projected 8.5 billion people in the world to have access to Health Coaches, creating even more Happy and Healthy Humans.







Health Coaching Industry Report V2.0

