The Successful Aging & Your Brain Puzzle Packet

Dana Foundation

Explore the brain with us. Visit Dana.org

Exercise your mind with these puzzles & you may help your brain

STAY SHARP!
We all know people who stay active into old age, or who seem to blossom creatively late in life. It turns out that these “successful agers” seem to share some common characteristics. Below are some key words related to ways to stay active as we age. To learn more, see the “Successful Aging & Your Brain” booklet from the Dana Foundation at www.dana.org/successful aging.

Words may appear in all directions, including diagonally and backwards.

Aerobic  Engage  Lifestyle  Skills
Cards    Exercise  Network  Sleep
Chess    Family  Novelty  Stress
Children  Friends  Plasticity  Think
Community Function  Practice  Volunteer
Dancing  Games  Puzzles
Diet     Laughter  Reading
Education Learning  Sharp
Successful Aging & Your Brain
Stay Socially Engaged

From the day we are born our brain is primed for learning, ready to capture the experiences of our lives and encode them into its web of nerve connections. Below are some key words related to how learning and memory happen within the brain and the role social engagement plays in both. To learn more, see the “Successful Aging & Your Brain” booklet from the Dana Foundation at www.dana.org/successfulaging.

Words may appear in all directions, including diagonally and backwards.

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Ability  Connection  Judgment  Neurotransmitters
Action   Education  Language  Plasticity
Amygdala Engage       Learning  Social
Attention Executive  Lobe    Synapse
Axons     Experience  Memory  Thought
Challenge Focus       Multitasking
Cognition Hippocampus Myelination
Conceptual Information Neurogenesis

ANSWER KEY available at dana.org/successfulaging
Successful Aging & Your Brain

Vascular Health

Eating well and controlling vascular risk factors such as blood pressure, cholesterol, and stress may contribute to the maintenance of cognitive function throughout life. Below are some key words related to diet, exercise, and vascular health. To learn more, see the "Successful Aging & Your Brain" booklet from the Dana Foundation at www.dana.org/successfulaging.

Words may appear in all directions, including diagonally and backwards.

*note: no spaces, no hyphens
Nearly one in five Americans is afflicted with a brain disorder – conditions that range from learning disabilities to depression to traumatic brain injury. Seeing your doctor can help keep your brain healthy and help prevent and treat various brain diseases and disorders. See how many key words related to brain diseases and disorders you can find. To learn more, see the “Successful Aging & Your Brain” booklet from the Dana Foundation at www.dana.org/successfulaging.

*note: no spaces, no hyphens, no apostrophes

ANSWER KEY available at dana.org/successfulaging
Successful Aging & Your Brain

Four Factors Jumble

Unscramble the words below to learn about the four factors of successful aging (hint: for help, see the "Successful Aging & Your Brain" bookmark at www.dana.org/successfulaging). Once you figure out the answers, unscramble the highlighted letters to fill in the healthy brain mystery phrase (three letters have been filled in for you).

IALOSC MGGEATEENN

RAPIEMID NUFNOITC

LOCTLHEEROS

NALCITTULLEE VATTYICI

COORDT

GODO DETI

CETMDINOIA DSEI-CESTEFF

VAURSACL HETAHL

RIEEXSEC

DUETEAQA SELPE

LODBO PESRUERS

ANSWER KEY available at dana.org/successfulaging
Unscramble the words below to see what regular exercise can do for your body (hint: for help, see the “Successful Aging & Your Brain” bookmark at www.dana.org/successfulaging. Once you figure out the answers, unscramble the highlighted letters to answer the riddle (two letters have been filled in for you).

Regular exercise can...

Prevent... BIOTYSE
Promote... SOENIEGESNUR
Boost... DOMO
Slow... NEBO SOLS
Decrease risk of some... SIAEDSES
Increase... REGNYE
Combat high blood... PERURESS
Improve overall... HHTELA

What happened to the mollusk that went to the gym?

“U” L!"
Successful Aging & Your Brain

Keep Your Memory Sharp Jumble

What may seem like a faltering memory may in fact be a decline in the rate at which we learn and store new information. Visit www.dana.org for more information on memory, and practice these memory skills to enhance learning and make remembering easier:

The following jumbled words are skills you can practice to help keep your memory sharp (hint: we’ve underlined the first letter of each word for you). Once you figure out the answers, unscramble the highlighted letters to answer the riddle (eight letters have been filled in for you, and letters can be used multiple times).

ICESTAAO

XEARL

RENNECATCTO

COSEU

LSWO NOWD

NAOZIGRE

WITRE

PETREA

IUZAVISLE

“Why do reptiles have such good memories?”

“B S H Y H V T L”

ANSWER KEY available at dana.org/successfulaging
Successful Aging & Your Brain

Brain Quote Cryptograms

The following cryptograms are all quotes about the brain, with the names of their authors. Some of the letters have been filled in to give you a head start. See how many you can solve! Visit www.dana.org for more information on neuroscience and the brain.

We’re Not in Kansas Anymore

The Sci-Fi Brain
Successful Aging & Your Brain
Brain Quote Cryptograms

The following cryptograms are all quotes about the brain, with the names of their authors. Some of the letters have been filled in to give you a head start. See how many you can solve! Visit www.dana.org for more information on neuroscience and the brain.

### The Poetry of the Brain

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### Beam Me Up!

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**ANSWER KEY** available at dana.org/successfulaging
Successful Aging & Your Brain

Brain Quote Cryptograms

The following cryptograms are all quotes about the brain, with the names of their authors. Some of the letters have been filled in to give you a head start. See how many you can solve! Visit www.dana.org for more information on neuroscience and the brain.

Oh, the Places You’ll Go!

Renaissance Brain

ANSWER KEY available at dana.org/successfulaging
### Brain Quote Cryptograms

The following cryptograms are all quotes about the brain, with the names of their authors. Some of the letters have been filled in to give you a head start. See how many you can solve! Visit [www.dana.org](http://www.dana.org) for more information on neuroscience and the brain.

#### An Ancient View?

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**ANSWER KEY** available at dana.org/successfulaging
Successful Aging & Your Brain

The Senses: Vision and Hearing

Use the Dana Alliance’s Brain Briefs on “The Senses” of vision and hearing available at www.dana.org/downloads/ to find all the words and to reveal the hidden message formed by letters that are not part of the found words.

Words may appear in all directions, including diagonally and backwards.

X M U S I M O P T I C W C P A M
E A M N D E A R F T L E C R M E
T R H A R C E I E A N R A E P M
R E T G A H L G T I C N T S L B
O T Y M P A N I C O N I A B I R
C I H G M N P Y R A N C R Y T A
D N R E E I N N C J O K A O U N
Y A N A C C E B L N E E C P D E
T T K C R A T X K L E S T I E M
S L O C O L L I C U L U S A X U
Y R O T I D U A A M M V S Q O V L
I N F E R I O R C O C H L E A O
N O I T P E C R E P F P C Z R V
S E L C I S S O S H A P E Q U F
J Z S T B L X T E M P O R A L N
C T H A L A M U S L V J U W E Q

*note: no apostrophes

Amplitude Filaments Ossicles Thalamus
Auditory Frequency Perception Tympanic
Cataract Inferior Presbyopia Volume
Cochlea Mechanical Retina Wernicke’s
Colliculus Membrane Rhythm
Cornea Occipital Shape
Cortex Optic Temporal

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! Answer Key available at dana.org/successfulaging
Neuroscience is the study of the brain and nervous system, including their structure, function, and disorders. How many common four- and five-letter English words (no proper names or abbreviations) can you find in the word NEUROSCIENCE? See how many you can find, and then check your words against ours in the answer key. Good luck! Visit www.dana.org for more information about neuroscience and the brain.

**NEUROSCIENCE**

Four-letter words:

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How many did you find? _______

*Hint: There are 83 possible words.*


**ANSWER KEY** available at dana.org/successfulaging
Five-letter words:

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How many did you find? _________

Hint: There are 106 possible words.

If you’re ready for a bigger challenge, see how many six-letter words you can find!


ANSWER KEY available at dana.org/successfulaging
Successful Aging & Your Brain
Stay Sharp Crossword
Reference the Dana Foundation’s “Successful Aging & Your Brain” booklet, available at www.dana.org, to solve this BRAIN-Y crossword puzzle!

**ACROSS**
4. During _______ , certain types of memories become consolidated.
5. The type of memories that can be recalled consciously and described verbally, including facts, people, and places.
6. A type of memory that is used when learning motor skills and other actions.
7. Tiny blood vessels that provide oxygen to the brain, sense when active brain cells need more oxygen, and remove carbon dioxide.
8. Denotes the ability to use knowledge, experience, and understanding to make good decisions.
10. The brain's capacity to structurally change by learning.
11. The type of network involving relationships that may help to preserve mental sharpness and decrease the risk of developing depression and dementia.
12. The type of healthy fat found in olive, sunflower, and soybean oils.

**DOWN**
1. The process of creating an image of what you want to remember that improves recall by giving your brain another way to access information.
2. Action that can improve mood, enlarges blood vessels so more blood and oxygen can flow to the brain, and boosts brain-derived neurotrophic factor (BDNF), that is associated with alleviating depression and anxiety.
3. Many studies have linked aging with a decrease in _____ matter, the bundles of axons that transmit nerve signals between brain regions.
4. Believing in our ability to succeed in a specific situation, giving us confidence.
7. A type of risk factor, such as high blood pressure, high cholesterol, smoking, obesity, and diabetes, that increases the risk of cognitive decline.
9. A series of interrelated processes involving, encoding, storing, and retrieving information.

**ANSWER KEY** available at dana.org/successfulaging
Successful Aging & Your Brain
Brain-y Crossword

Reference the Dana Alliance’s “Mindboggling” booklet series and “Q&A: Answering Your Questions About the Brain,” available at www.dana.org, to solve this BRAIN-Y crossword puzzle!

ACROSS
4. One of the most prevalent neurodegenerative disorders that greatly reduces a person’s memory.
5. The general name for the chemicals that are released by one neuron and taken up by another.
6. The branches of a neuron that receive electrical signals from other neurons.
7. You have more than 100 ____ neurons. (spell out the number).
8. An area of the brain located deep inside the brain and involved in memory.
13. What does the “I” in MRI stand for?
14. The part of the brain that connects directly with the spinal cord and is responsible for some of the automatic functions of the body.

DOWN
1. The tennis-ball-sized area at the back of the brain that regulates motor movements; it is responsible for balance and involved in motor learning.
2. The nerve cells in the brain.
3. The long, tail-like branch that extends from the neuron cell body and transmits electrical information to other target cells.
5. The exploration of ethical issues surrounding advances in neuroscience.
9. The brain’s ability to change and rewire its synaptic connections.
10. The area of the brain involved with emotions, especially fear, anger, and happiness.
11. The pathway for nerve signals to travel to and from the brain (two words, no space).
12. The junctions where neurons form connections with one another.

ANSWER KEY available at dana.org/successfulaging
ACROSS
2. The type of protein that clumps together in Alzheimer’s.
8. One of the first areas of the brain affected by Alzheimer’s.
9. A type of cell that supports and regulates neurons studied by researchers.
11. Brain cells that support and regulate neurons and also help both limit and exacerbate brain damage.
12. When brain circuits reshape themselves to take over functions for damaged areas; also, new cell growth.
14. The disease where a loss of dopamine-producing neurons in the basal ganglia causes movement problems.
16. Protein that accumulates in Parkinson’s disease.

DOWN
1. _______ lost is brain lost.
3. Protein responsible for common neurodegenerative diseases and traumatic brain injury (TBI).
4. The most common type of stroke caused by a blood clot.
5. One of the types of cells that both limits and exacerbates brain damage.
6. A condition caused by repeated blows to the brain that occurs in professional athletes.
7. Compounds in the blood or spinal cord fluid, for example, that can reveal disease activity earlier than symptoms develop.
10. A condition that can be caused by TBI.
13. Interruption of the brain’s blood supply.
15. This may happen in response to TBI.

Reference the Dana Alliance’s Fact Sheets based on content from our “Q&A: Answering Your Questions about Brain Research” at www.dana.org to solve this BRAIN-Y crossword puzzle!
Successful Aging & Your Brain
How Does the Brain Work and Develop?

Reference the Dana Alliance’s Fact Sheets based on “Q&A: Answering Your Questions About the Brain,” available at www.dana.org, to solve this crossword puzzle!

**ACROSS**
4. The percent of the body’s daily energy intake that is used by the developing brain until puberty.
5. The week during gestation when primitive forms of the cortex, cerebellum, and brainstem are apparent.
6. Nerve fiber that conducts electrical impulses.
10. The part of the brain that controls movement. (two words, no space).
11. The part of the brain that is a keystone of memory.
12. Bundles of axons that carry signals from region to region, like long-distance cables. (two words, no space).
13. The part of the brain that regulates balance, coordination, and life-sustaining processes such as breathing and heartbeat.
14. Throughout the brain, neurons communicate with one another through _______ circuits.

**DOWN**
1. One of the primitive regions of the brain important in emotion that is not fully functional until age three.
2. The outermost layer of the brain that is divided up into specialized lobes to regulate sensory experience, language and memory, and our sense of space.
3. Chemicals that cross a synapse to stimulate neurons nearby.
7. The sheath that covers axons and speeds electrical messages along.
8. The week during gestation when genes switch on to turn some of the embryo’s stem cells into neurons and glia.
9. Percent a baby’s brain volume grows per day after birth before slowing down by the third month.

**ANSWER KEY** available at dana.org/successfulaging