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!
Successful Aging & Your Brain

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. Visit www.dana.org for more information on neuroscience and the brain.

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
Sharp Learning Education
Volunteer Practice Skills
Sleep Stress Novelty
Friends Family Community
Network Sleep Exercise
Lifestyle Skills Card
Engage Exercise Aerobic
Physical Active Stay

Words may appear in all directions, including diagonally and backwards.
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. Visit www.dana.org for more information on neuroscience and the brain.

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

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

- Ability
- Action
- Amygdala
- Attention
- Axons
- Challenge
- Cognition
- Conceptual
- Connection
- Education
- Engage
- Executive
- Experience
- Focus
- Hippocampus
- Information
- Judgment
- Language
- Learning
- Lobe
- Memory
- Multitasking
- Myelination
- Neurogenesis
- Neurotransmitters
- Plasticity
- Social
- Synapse
- Thought
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. Visit www.dana.org for more information on neuroscience and the brain.

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

Aerobic activity  Cholesterol  Low-fat  Stroke
Antioxidants  Diabetes  Neurogenesis  Vegetables
Balance  Diet  Nutrition  Vitamin D
Blood glucose  Energy  Obesity  Walking
Blood pressure  Exercise  Risk factor  Water
Body mass index  Flexibility  Sleep  Whole-grain
Calories  Food pyramid  Sports
Cardiovascular  Heart disease  Strength

*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. Visit www.dana.org for more information on neuroscience and the brain.

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

Addiction  Coma  Mental illness  Shingles
Alzheimer's Deafness  Migraine  Sleep disorders
Anxiety Depression Muscular dystrophy Spina bifida
Ataxia Dyslexia Pain  Spinal cord injury
Autism Dystonia Panic disorder Stroke
Birth defects Eating disorders Paralysis Tourette syndrome
Blindness Epilepsy Parkinson's
Cerebral palsy Lou Gehrig's Schizophrenia
Successful Aging & Your Brain
Four Factors Jumble

Unscramble the words below to learn about the four factors of successful aging. 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). Visit www.dana.org for more information on neuroscience and the brain.

IALOSC MGGEATEENN

RAPIEMID NUFNOITC

LOCTLHEEROS

NALCITTULLEE VATTYICI

COORDT

GODO DETI

CETMDINOIA DSEI-CESTEFF

VAURSACL HETAHL

RIEEXSEC

DUETEAQA SELPE

LODBO PESRUERS

[Unscrambled words and numbers for each line]
Successful Aging & Your Brain
Get Moving! Jumble

Unscramble the words below to see what regular exercise can do for your body. Once you figure out the answers, unscramble the highlighted letters to answer the riddle (two letters have been filled in for you). Visit www.dana.org for more information on neuroscience and the brain.

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

COFEU

LSWOWNOWD

NAOZIGRE

WITRE

PETREA

IUZAVISLE

“Why do reptiles have such good memories?”

“B | S | H | Y | H | V

T | L”
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](http://www.dana.org) for more information on neuroscience and the brain.

### We’re Not in Kansas Anymore

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| 4 |   |   |   |   |   |   | 18| 19|   |   |   |   |   |   |   | 25|   |   |   | 10| 14| 9 |

| A | 4 | 8 | 3 |   | Y | 7 | 9 |   | H | 19| 13| 4 |   | 3 |   | 12 |   | 3 | 15| 13 |   | 5 | 17| 6 |
|   | 14| 19| 12| 25| 13|   |   | H | 1 | 19| 2 | 10| 18| 19| 1 |   | 5 |   |   | 14| 13| 6 | 13 |   | 15| 10| 5 | 9 |
| H | 19| 4 | 1 | 17| 19| 12| 8 |   | G | 18|   | 12| 22|   |   | 12 |   | 2 | 8 | 25| 9 |   |   | 19| 4 | 3 |   | A |
| H | 19| 4 | 1 | 17| 19| 12| 8 |   | G | 18|   | 12| 22|   |   | 12 |   | 2 | 8 | 25| 9 |   |   | 19| 4 | 3 |   | A |
| H | 19| 4 | 1 | 17| 19| 12| 8 |   | G | 18|   | 12| 22|   |   | 12 |   | 2 | 8 | 25| 9 |   |   | 19| 4 | 3 |   | A |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

### The Sci-Fi Brain

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| 7 | 10| 9 | 22|   |   |   |   |   |   | 8 |   |   |   |   | 1 | 20| 19|   |

| H | 17| 9 | 16 |   | H | 9 | 1 | 8 | 3 | 12 |   | 6 | 21| 3 | 12 | 17 | 9 | 16 |
| 8 | 23| 15| 17 |   | C | 7 | 23| 8 | 5 | 25| 22| 7 | 3 | 17| 16 | 26| 23| 21| 2 | 3 | 12 | 22| 11| 3 | 17 | 22 | 23 | 12 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| I | 22| 12 |   |   | I | 22| 12 |   |   | I | 22| 15 |   |   |   |   | I | 22| 15 |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| H | 9 | 16 |   |   | H | 9 | 16 |   |   | W | 19| 16 |   | 4 | 12 | 23 |   | W |   |   |   |   |   |   |   |

| F | 23| 10 |   |   | M | 8 | 3 | 17 | 17 | 16 | 21 |   | 17 | 9 | 3 | 17 |   | W | 19| 16 |   |   |   |   | 4 | 12| 23 |   | W |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

| I | 22| 15 | 3 | 3 | C | 7 | 3 | 15 |   | I | 22| 15 |   |   |   |   |   | M | 8 | 23 | 20 |   |   |   |   |   |   |

Dana.org
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

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| 4 | 14| 13|   | 16| 3 | 17|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

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

Beam Me Up!
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
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.

An Ancient View?

```
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
17 15 3 7 6 13 2 9 20 12 15 2 9 9 2 18 4 13 8 5 23
R F R M R,
9 2 18 4 13 8 5 23 19 17 13 20 7 9 2 18 4 13 8 5 23
L R R P L R,
20 23 3 22 8 13 5 21 18 10 20 22,' L G R,
10 20 22,' 3 8 12 15 2 9 18 13 8 23 19 10 18 21 9 21,' 8 21
L G R F R,
15 13 5 18 17 21 8 23 19 9 18 8 13 21
G R
15 13 5 18 17 21
2 5 6 6 20 16 13 8 9 18 21
```
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 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 I U A M 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
Successful Aging & Your Brain
Words in a Word Puzzle

**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](http://www.dana.org) for more information about neuroscience and the brain.

**NEUROSCIENCE**

Four-letter words:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How many did you find? ________

_Hint: There are 83 possible words._

Puzzle by the Dana Alliance for Brain Initiatives, [www.dana.org](http://www.dana.org) and answers courtesy of [https://wordmaker.info/how-many/neuroscience.html](https://wordmaker.info/how-many/neuroscience.html)
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!

Puzzle by the Dana Alliance for Brain Initiatives, [www.dana.org](http://www.dana.org) and answers courtesy of [https://wordmaker.info/how-many/neuroscience.html](https://wordmaker.info/how-many/neuroscience.html)
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.
Successful Aging & Your Brain
Brain-y Crossword

Visit www.dana.org for more information on neuroscience and the brain.

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.
Successful Aging & Your Brain
Brain Injury and Neurodegenerative Diseases

Visit www.dana.org for more information on neuroscience and the brain.

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.
Successful Aging & Your Brain
How Does the Brain Work and Develop?

Visit www.dana.org for more information on neuroscience and the brain.

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.
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. Visit www.dana.org for more information on neuroscience and the brain.

Words may appear in all directions, including diagonally and backwards.
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. Visit www.dana.org for more information on neuroscience and the brain.

Words may appear in all directions, including diagonally and backwards.
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. Visit www.dana.org for more information on neuroscience and the brain.

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

Aerobic activity  Cholesterol  Low-fat  Stroke
Antioxidants  Diabetes  Neurogenesis  Vegetables
Balance  Diet  Nutrition  Vitamin D
Blood glucose  Energy  Obesity  Walking
Blood pressure  Exercise  Risk factor  Water
Body mass index  Flexibility  Sleep  Whole-grain
Calories  Food pyramid  Sports
Cardiovascular  Heart disease  Strength
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. Visit www.dana.org for more information on neuroscience and the brain.

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

*note: no spaces, no hyphens, no apostrophes

<table>
<thead>
<tr>
<th>Addiction</th>
<th>Coma</th>
<th>Mental illness</th>
<th>Shingles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alzheimer’s</td>
<td>Deafness</td>
<td>Migraine</td>
<td>Sleep disorders</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Depression</td>
<td>Muscular dystrophy</td>
<td>Spina bifida</td>
</tr>
<tr>
<td>Ataxia</td>
<td>Dyslexia</td>
<td>Pain</td>
<td>Spinal cord injury</td>
</tr>
<tr>
<td>Autism</td>
<td>Dystonia</td>
<td>Panic disorder</td>
<td>Stroke</td>
</tr>
<tr>
<td>Birth defects</td>
<td>Eating disorders</td>
<td>Paralysis</td>
<td>Tourette syndrome</td>
</tr>
<tr>
<td>Blindness</td>
<td>Epilepsy</td>
<td>Parkinson’s</td>
<td></td>
</tr>
<tr>
<td>Cerebral palsy</td>
<td>Lou Gehrig’s</td>
<td>Schizophrenia</td>
<td></td>
</tr>
</tbody>
</table>
Unscramble the words below to learn about the four factors of successful aging. 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).

### Social Engagement
IALOSC MGGEATEENN

### Impaired Function
RAPIEMID NUFNOITC

### Cholesterol
LOCTLHEEROS

### Intellectual Activity
NALCITTULLEE VATTYICI

### Doctor
COORDT

### Good Diet
GODO DETI

### Medication Side Effects
CETMDINOIA DSEI-CESTEFF

### Vascular Health
VAURSACL HETAHL

### Exercise
RIEXSEC

### Adequate Sleep
DUETEAQA SELPE

### Blood Pressure
LODBO PESRUERS

### Stay Physically Active, Reduce Vascular Risk Factors, Talk To Your Doctor, And Keep Your Brain Lively!
Successful Aging & Your Brain
Get Moving! Jumble

Unscramble the words below to see what regular exercise can do for your body. 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...**

<table>
<thead>
<tr>
<th>Prevent...</th>
<th>BIOTYSE</th>
<th>OBESITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote...</td>
<td>SOENIEGESNUR</td>
<td>NEUROGENESIS</td>
</tr>
<tr>
<td>Boost...</td>
<td>DOMO</td>
<td>MOOD</td>
</tr>
<tr>
<td>Slow...</td>
<td>NEBO SOLS</td>
<td>BONE LOSS</td>
</tr>
<tr>
<td>Decrease risk of some...</td>
<td>SIAEDSES</td>
<td>DISEASES</td>
</tr>
<tr>
<td>Increase...</td>
<td>REGNYE</td>
<td>ENERGY</td>
</tr>
<tr>
<td>Combat high blood...</td>
<td>PERURESS</td>
<td>PRESSURE</td>
</tr>
<tr>
<td>Improve overall...</td>
<td>HHTELA</td>
<td>HEALTH</td>
</tr>
</tbody>
</table>

What happened to the mollusk that went to the gym?

“IT PULLED A MUSSEL!”
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
ASSOCIATE

XEARL
RELAX

RENNECATCTO
CONCENTRATE

COSEU
FOCUS

LSWO NOWD
SLOW DOWN

NAOZIGRE
ORGANIZE

WITRE
WRITE

PETREA
REPEAT

IUZAVISLE
VISUALIZE

“Why do reptiles have such good memories?”

“BECAUSE THEY HAVE TURTLE RECALL”
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

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| 4 | 18| 19| 25 | 10 | 14 | 9 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

A N D  M Y  H E A D  I ' D  B E  S C R A T C H I N G
4 8 3 7 9 19 13 4 12 3 15 13 5 17 6 4 1 17 19 12 8 18

W H I L E  M Y  T H O U G H T S  W E R E  B U S Y
14 19 12 25 13 7 9 1 19 2 10 18 19 1 5 14 13 6 13 15 10 5 9

H A T C H I N G  I F  O N L Y  H A D  A  B R A I N
19 4 1 17 19 12 8 18 12 22 12 2 8 25 9 19 4 3 4 15 6 4 12 8

The Sci-Fi Brain

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| 7 | 10| 9 22| 8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

T H E  S C A R E C R O W
1 19 13 5 17 4 6 13 17 6 2 14

M O S T  C O M P L I C A T E D  O R G A N I Z A T I O N
8 23 15 17 7 23 8 25 22 7 3 17 16 26 23 21 2 3 12 22 11 3 17 22 23 12

O F  M A T T E R  T H A T  W E  K N O W
23 10 8 3 17 16 21 17 9 3 17 19 16 4 12 23 19

I S A A C  A S I M O V
22 15 3 3 7 3 15 22 8 23 20
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

Beam Me Up!
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
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 the brain and neuroscience.

An Ancient View?

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

M E N
7 18 23
O U G H T
20 12 15 2 9
T O K N O W
9 20 24 23 20 14
T H A T
9 2 8 9
F R O M
17 13 20 7

T H E
9 2 18
B R A I N
4 13 8 5 23
A N D
8 23 19
F R O M
17 13 20 7
T H E
9 2 18
B R A I N
4 13 8 5 23

O N L Y
20 23 3 22
A R I S E
8 13 5 21 18
O U R
20 12 13
P L E A S U R E S
6 3 18 8 21 12 13 18 21

J O Y
10 20 22
L A U G H T E R
3 8 12 15 2
A N D
8 23 19
J E S T S
10 18 21 9 21
A S
8 21

W E L L
14 18 3 3
A S
8 21
O U R
20 12 13
S O R R O W S
21 20 13 13 20 14
P A I N S
6 8 5 23 21

G R I E F S
15 13 5 18 17 21
A N D
8 23 19
T E A R S
9 18 8 13 21

H I P P O C R A T E S
2 5 6 6 20 16 13 8 9 18 21
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.

Amplitude | Auditory | Cataract | Cochlea | Colliculus | Cornea | Cortex
--|--|--|--|--|--|--
Filaments | Frequency | Inferior | Mechanical | Membrane | Occipital | Optic
Ossicles | Perception | Presbyopia | Retina | Rhythm | Shape | Temporal
Thalamus | Tympanic | Volume | Wernicke's |
**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](http://www.dana.org) for more information about neuroscience and the brain.

### NEUROSCIENCE

#### Four-letter words:

- cees  crus  inro  nous  rocs  sire
- cere  cues  ions  nuns  roes  sone
- cero  cure  ires  once  rose  sori
- cine  curn  iron  ones  roue  sorn
- cion  curs  nene  onus  ruin  sour
- cire  ecru  neon  orcs  rune  suer
- coin  ecus  nice  ores  runs  suun
- coir  eons  nine  ours  ruse  sure
- cone  erne  noes  recs  seen  unci
- coni  eros  noir  rees  seer  unco
- conn  euro  none  rein  sene  uric
- core  ices  nori  reis  sere  urns
- corn  icon  nose  rice  sice  user
- croc  inns  noun  rise  sine

#### Five-letter words:

- cense  cores  cusec  irone  osier  rouse  siree
- cerici  cores  cuses  irons  ounce  ourie  runes  siren
- ceres  cornu  eerie  neons  recce  runic  sneer
- ceric  corse  ennui  nicer  recc  scene  sonic
- ceros  cosec  ensue  niece  recon  scion  sucre
- cines  cosie  enure  nines  reins  scione  uncos
- cions  cries  eosin  noirs  reein  score  union
- cires  croci  ernes  noise  resee  scorn  ureic
- cisco  crocs  erose  nonce  resin  scor  urine
- coins  crone  euros  nones  reuse  scour
- coirs  cruse  icons  noris  rices  scree
- cones  cures  incur  nouns  rinse  secco
- conic  curie  incus  nurse  risen  seine
- conin  curio  inner  occur  rosin  senor
- conns  curns  inure  orcin  rouen  serin
- conus  curse  inurn  ornis  roues  since
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.
5. A type of risk factor, such as high blood pressure, high cholesterol, smoking, obesity, and diabetes, that increases the risk of cognitive decline.
6. A series of interrelated processes involving, encoding, storing, and retrieving information.
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.
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.
Successful Aging & Your Brain
How Does the Brain Work and Develop?

**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.