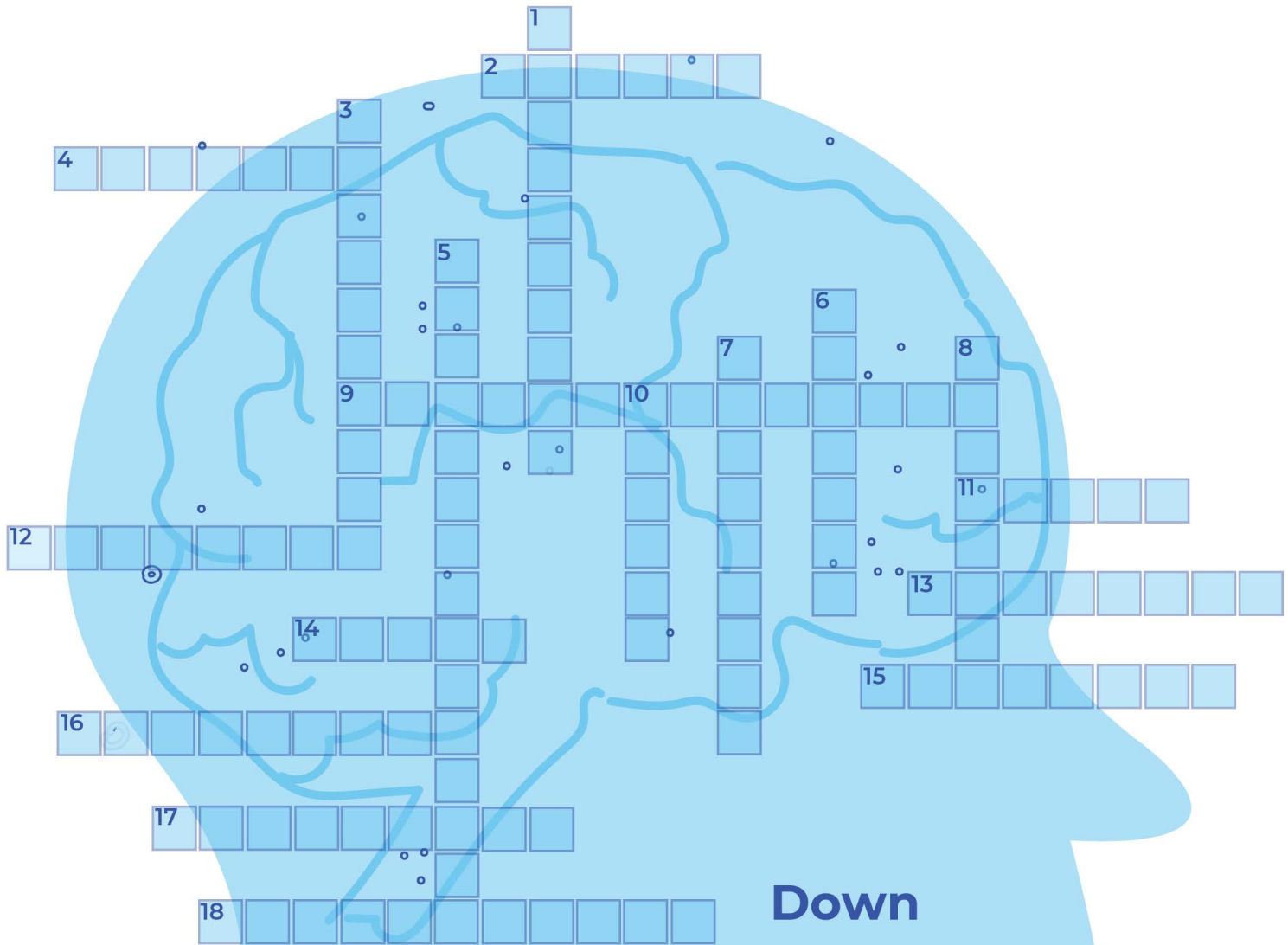


Brain Anatomy Crossword

Grades 9-12



Across

2. Type of messenger cell in the brain
4. Junction that allows communication between two neurons
9. Type of bundle that joins the two hemispheres of the brain
11. Type of support cell in the brain
12. The membranes covering the spinal cord and brain
13. Lobe in the brain associated with integrating sensory info
14. Ganglia in the brain associated with coordination of movement and reward
15. Structure in the brain that relays sensory and motor messages to the cortex
16. Part of the brain that regulates heart rate and breathing
17. Lobe in the brain that processes vision
18. Part of brain that is associated with long-term memory

Down

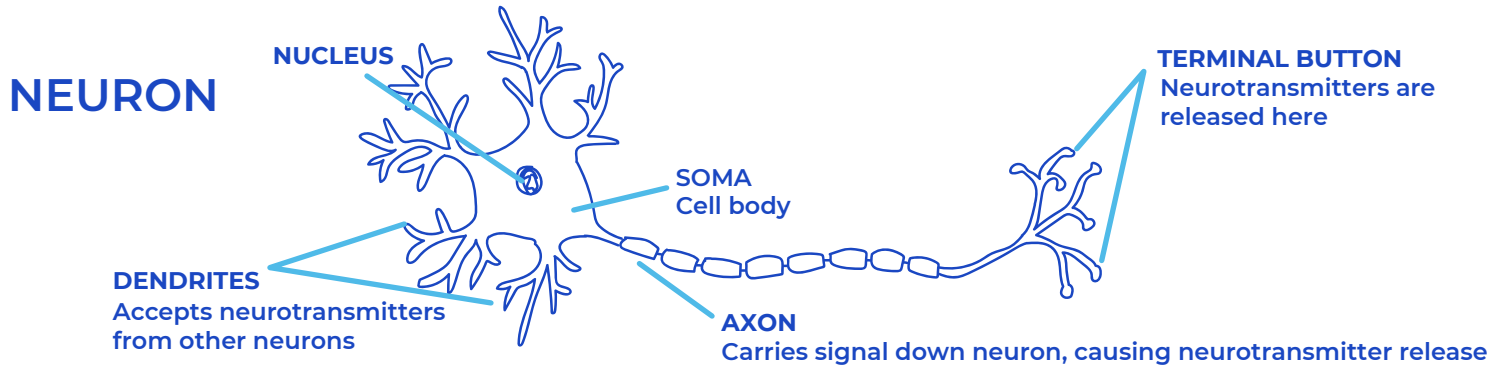
1. Part of the brain involved in balance and coordination
3. Spaces deep inside the brain filled with cerebrospinal fluid
5. Nucleus known as the "master clock" regulating circadian rhythms
6. Lobe in the brain associated with executive function and decision-making
7. This bulb is involved in the sense of smell
8. Almond-shaped structure associated with processing emotions
10. The outer layer of the cerebrum

Neuron Word Search Puzzle

Grades 9-12

Neurons release chemicals called neurotransmitters.

In order to communicate with one another, cells in the brain, called neurons, release chemicals called neurotransmitters. Reference the labeled neuron and read about each neurotransmitter and see if you can find all the bolded words in the word search below.



NEUROTRANSMITTERS

This neurotransmitter has been found to regulate mood and appetite: **Serotonin**

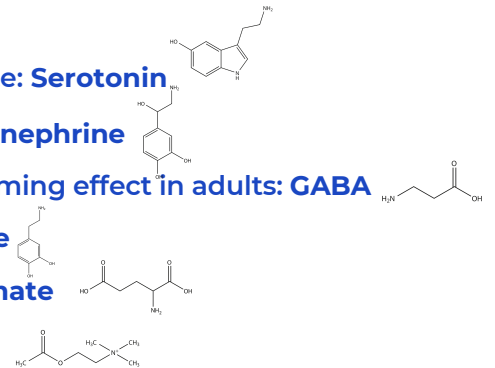
Neurotransmitter that modulates the fight or flight response: **Norepinephrine**

Pharmaceutical drugs that increase this neurotransmitter have a calming effect in adults: **GABA**

Neurotransmitter associated with reward and motivation: **Dopamine**

This neurotransmitter is involved with memory and learning: **Glutamate**

Skeletal muscle is activated by this neurotransmitter: **Acetylcholine**



WORD SEARCH

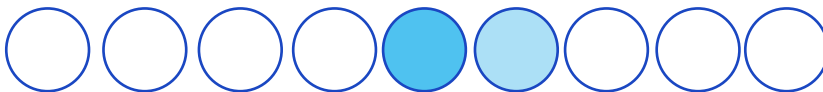
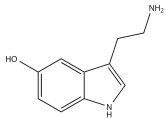
S D V I R D R V P I E Z L K E G S N O H C U V C G G F A E N
 J N K K S Y W M H W E P Z X N Z L Q O Q T I H V B G H N O X
 X P O W Q K C R V P R P D P I D F U N R Y V E O H W I X C B
 H J J T H S A R W X A H K H R B Z F T J U D P A C L A W R I
 U B L D T F M L R G T W E S H S D E O A O E X T O B G E H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

Synaptic Challenge

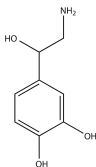
Grades 9-12

Neurons in the brain release chemicals called neurotransmitters.

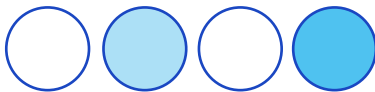
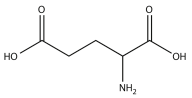
In order to communicate with one another, neurons in the brain release chemicals called neurotransmitters. Synapses are the very small spaces between two neurons where these neurotransmitters are released. Solve each clue to learn more about neurotransmitters. Learn what it takes to release neurotransmitters by taking the letters that appear in the colored boxes and unscrambling them in their respective color-coded words for the final message.



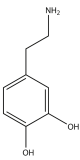
Monoamine neurotransmitter biochemically derived from tryptophan.



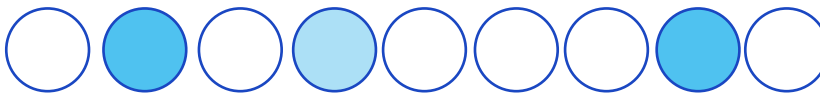
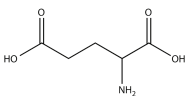
Catecholamine that is lowest during sleep and modulates the sympathetic nervous system.



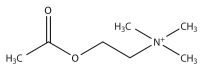
Pharmaceutical drugs that increase this neurotransmitter have a calming effect in adults.



Neurotransmitter associated with reward and motivation.



This neurotransmitter is involved with memory and learning.



Skeletal muscle is activated by this neurotransmitter.



What causes a neuron to release neurotransmitters?



Brain Anatomy Crossword

Grades 9-12



Across

2. Type of messenger cell in the brain
4. Junction that allows communication between two neurons
9. Type of bundle that joins the two hemispheres of the brain
11. Type of support cell in the brain
12. The membranes covering the spinal cord and brain
13. Lobe in the brain associated with integrating sensory info
14. Ganglia in the brain associated with coordination of movement and reward
15. Structure in the brain that relays sensory and motor messages to the cortex
16. Part of the brain that regulates heart rate and breathing
17. Lobe in the brain that processes vision
18. Part of brain that is associated with long-term memory

Down

1. Part of the brain involved in balance and coordination
3. Spaces deep inside the brain filled with cerebrospinal fluid
5. Nucleus known as the “master clock” regulating circadian rhythms
6. Lobe in the brain associated with executive function and decision-making
7. This bulb is involved in the sense of smell
8. Almond-shaped structure associated with processing emotions
10. The outer layer of the cerebrum

Brain Plasticity Fallen Word Puzzle

Grades 9-12

Brain plasticity does not mean our brains are made of plastic! It means they are flexible. Specifically, brain plasticity refers to the brain's ability to change and reorganize its own connections.

When we learn new information, we are changing our brain, both functionally and anatomically. Do brains stop changing and growing at a certain age? Solve the puzzle below to find out.

DIRECTIONS: All the letters to complete the phrases have fallen below the grid. The letters have stayed within their original column but need to be put back in the correct spaces to complete the phrases.

Hint: Fill in the spaces with fewer letter options underneath first. Then use trial and error to keep filling in the blanks until you have completed the puzzle.

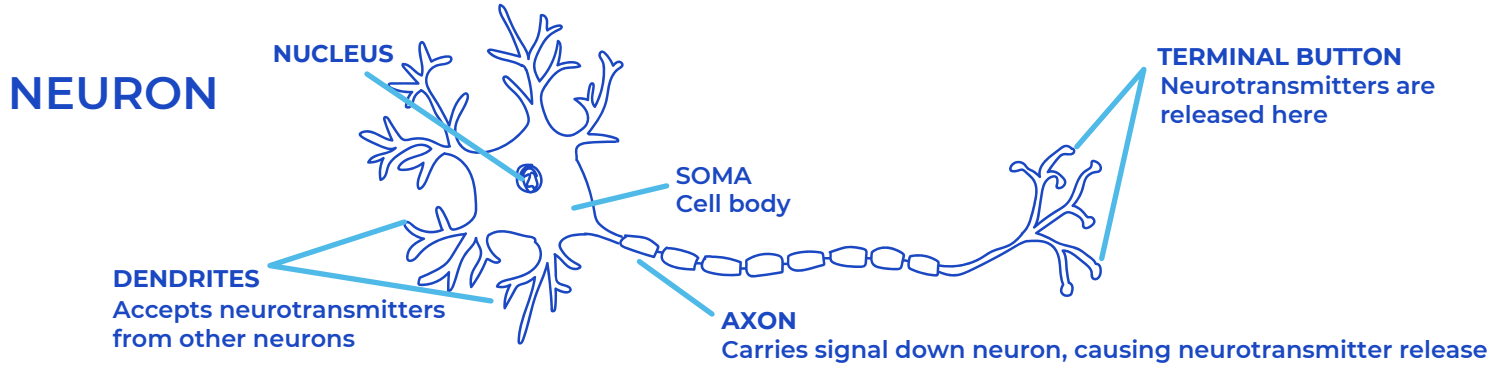
B	R	A	I	N	S		A	R	E		M	O	R	E		P	L	A	S	T	I	C		T	H	A	N		
			R	E	S	E	A	R	C	H	E	R	S		O	R	I	G	I	N	A	L	L	Y					
T	H	O	U	G	H	T	●		T	H	E	Y		G	O		O	N		T	O		G	R	O	W			
	A	N	D		C	H	A	N	G	E		T	H	R	O	U	G	H	O	U	T		Y	O	U	R			
								L	I	F	E	T	I	M	E	●													
								C		Y																			
			I		S			L	H	E	O	T	E	O	U	G	A		N	T			Y						
	H	A	R	N	C	T	A	N	G	H	E	R	S	R	O	P	O	N	O	T	O		L	O	O	A			
B	R	O	U	E	H	E	A	R	T	I	M	T	H	G	O	E	L	G	S	T	A	L	G	R	H	W			
T	A	N	D	G	S	H	A	R	E	E	F	E	R	I	M	R	I	H	I	U	I	C	Y	T	U	R	N		

Neuron Word Search Puzzle

Grades 9-12

Neurons release chemicals called neurotransmitters.

In order to communicate with one another, cells in the brain, called neurons, release chemicals called neurotransmitters. Reference the labeled neuron and read about each neurotransmitter and see if you can find all the bolded words in the word search below.



NEUROTRANSMITTERS

This neurotransmitter has been found to regulate mood and appetite: **Serotonin**

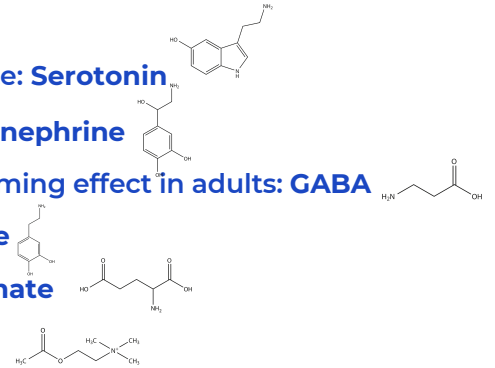
Neurotransmitter that modulates the fight or flight response: **Norepinephrine**

Pharmaceutical drugs that increase this neurotransmitter have a calming effect in adults: **GABA**

Neurotransmitter associated with reward and motivation: **Dopamine**

This neurotransmitter is involved with memory and learning: **Glutamate**

Skeletal muscle is activated by this neurotransmitter: **Acetylcholine**



WORD SEARCH

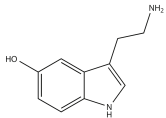
S	D	V	I	R	D	R	V	P	I	E	Z	L	K	E	G	S	N	O	H	C	U	V	C	G	G	F	A	E	N
J	N	K	K	S	Y	W	M	H	W	E	P	Z	X	N	Z	L	Q	O	Q	T	I	H	V	B	G	H	N	O	X
X	P	O	W	Q	K	C	R	V	P	R	P	D	P	I	D	F	U	N	R	Y	V	E	O	H	W	I	X	C	B
H	J	J	T	H	S	A	R	W	X	A	H	K	H	R	B	Z	F	T	J	U	D	P	A	C	L	A	W	R	I
U	B	L	D	T	F	M	L	R	G	T	W	E	S	H	S	D	E	O	A	O	E	X	T	O	B	G	E	H	D
T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

Synaptic Challenge

Grades 9-12

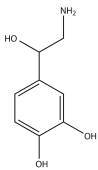
Neurons in the brain release chemicals called neurotransmitters.

In order to communicate with one another, neurons in the brain release chemicals called neurotransmitters. Synapses are the very small spaces between two neurons where these neurotransmitters are released. Solve each clue to learn more about neurotransmitters. Learn what it takes to release neurotransmitters by taking the letters that appear in the colored boxes and unscrambling them in their respective color-coded words for the final message.



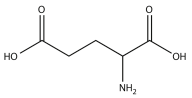
S E R O T O N I N

Monoamine neurotransmitter biochemically derived from tryptophan.



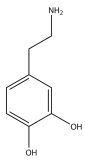
N O R E P I N E P H R I N E

Catecholamine that is lowest during sleep and modulates the sympathetic nervous system.



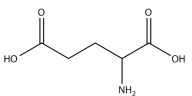
G A B A

Pharmaceutical drugs that increase this neurotransmitter have a calming effect in adults.



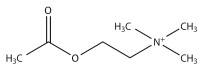
D O P A M I N E

Neurotransmitter associated with reward and motivation.



G L U T A M A T E

This neurotransmitter is involved with memory and learning.



A C E T Y L C H O L I N E

Skeletal muscle is activated by this neurotransmitter.



What causes a neuron to release neurotransmitters?

A C T I O N

P O T E N T I A L