

# ALCOHOL AND YOUR DEVELOPING MEDULLA

Medulla

Length: 30-40 minutes | Age range: 9-12

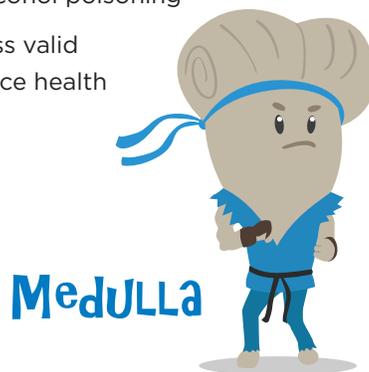


## Summary

It is crucial for students to understand that there are appropriate and inappropriate sources of information, especially when the internet is at their fingertips, and especially with health topics. The medulla is the most important part of the brain – it helps you breath, sneeze, and vomit. These functions are vital to staying alive, and when impaired by alcohol, the effects can be deadly. This lesson is intended to drive home the message that underage drinking is dangerous, while simultaneously teaching students where to access resources and go for help if they or a peer are ever in trouble.

## Objectives

- Identify the life sustaining functions of the medulla
- Recognize the effects of alcohol on the medulla
- Conceptualize the severity of alcohol poisoning
- Demonstrate the ability to access valid resources and services to enhance health



## Vocabulary

- Medulla
- Brainstem
- Cardiovascular system
- Respiratory system
- Alcohol poisoning

## What you'll need

- [Medulla Comprehension Questions](#)
- [Medulla Vocabulary Cards](#)

## Comprehension Questions

- Where is the medulla within your brain?
- What systems does the medulla control?
- What happens to your body when the medulla is impaired by alcohol?



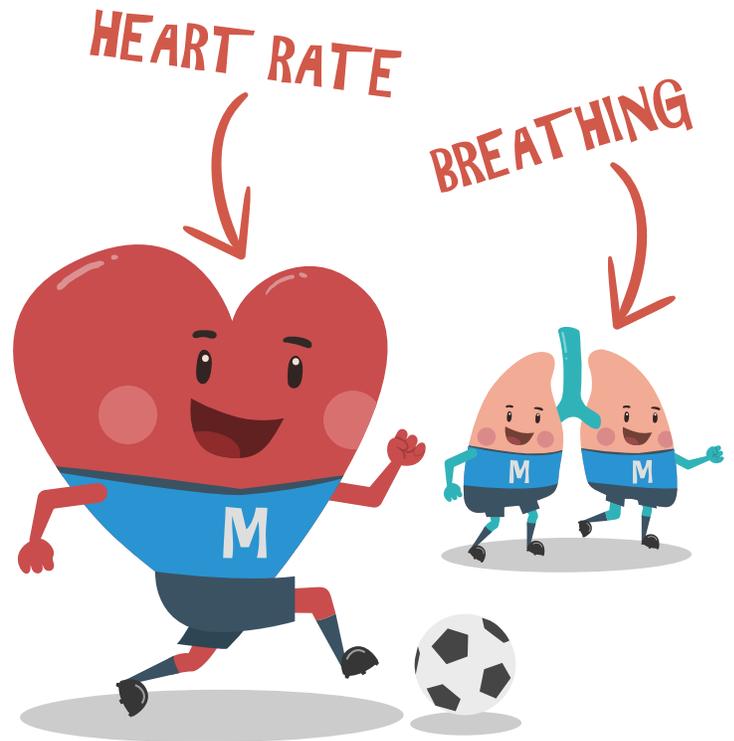
To learn more about teaching units on the impacts of underage drinking and peer pressure, see additional lessons from *Ask, Listen, Learn*

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For more info head to [AskListenLearn.org](https://www.AskListenLearn.org)

- 1 Introduce the unit by playing the video, “[How Alcohol Affects Your Medulla](#)”. Have the “class neurotransmitter” (one student chosen at random) pass out the comprehension questions to all students (neurons).  
2 minutes
- 2 When the video is over, have the students get into groups to discuss the questions.  
3 minutes
- 3 Ask students what they know about alcohol poisoning. Assess their current knowledge and lead a discussion on the topic.  
6 minutes
- 4 Activity: *Too Much*  
5 minutes
- 5 Distribute index cards and have students write down an example of what they think is a fact about alcohol and a myth about alcohol.  
3 minutes
- 6 Have some volunteers read their examples and discuss the importance of accessing reliable information.  
3 minutes



- 7 Activity: *Appropriate Resources*  
10 minutes
- 8 **Optional** wrap-up homework assignment : On the board, write out the question, “Why is drinking alcohol harmful for growing kids and adolescents?” Instruct the students to answer this question in a one-page essay, citing five examples from the videos, lessons, or texts they’ve read over this unit. Require them to include one new, credible source. Have the student’s compare and contrast their sources.  
2 minutes
- 9 Have new “class neurotransmitter” pass out the vocabulary cards. For homework, ask the students to rewrite definitions for the vocabulary in their own words, and draw a picture to help them remember.
- 10 Pass out index cards and ask students to write down two things they learned and one thing they would like to learn more about.

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## Too Much (5 minutes)

- Have students get into pairs and create a list of things that are bad if they have too much.
  - **Examples:** junk food, caffeine, etc.
- Bring the class together and create a comprehensive list on the board.
- Explain that some things are ok in moderation, but are dangerous when consumed in large quantities. For adults, alcohol in moderation is ok, but when they have too much it can be harmful.
- Make it clear that positive health behaviors involve a nutritious diet, junk food in moderation, moderate physical activity, and saying no to underage drinking.
- Reiterate that ANY amount of alcohol for a young person under 21 is dangerous because the brain is still developing.



## Appropriate Resources (10 minutes)

- Write the following three categories on the board:
  - Fact
  - Reasoned Judgement
  - Opinion
- Ask students for examples, explaining that reasoned judgement is an opinion typically supported with factual evidence.
  - **Examples:**
    - Fact: The Declaration of Independence was ratified in 1776
    - Reasoned Judgement: Electricity was a great invention BECAUSE it allows people to create so many more tools
    - Opinion: Apples taste bad
- Explain that when making important decisions about their health, having factual information is crucial. Have students shout out some examples of what they think credible sources are.
- Students should pay attention to the following when looking for information online:
  - Up-to-date info
  - In depth information
  - Proper citations
  - Cited experts
  - No prompts for personal information
  - .gov, .org, and .edu sites
- To extend the lesson, and prepare for the homework assignment, have students use the Internet to find an example of a credible source or article. Have them summarize the piece in 3-5 full sentences.

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# ALCOHOL AND YOUR DEVELOPING MEDULLA

Medulla

## Vocabulary Words

### Medulla

One of the most important parts of the brain; the medulla controls breathing and heart functioning. The medulla is part of the brainstem.

### Brainstem

The brainstem connects the rest of the brain to the spinal cord and helps control basic body functions like breathing, swallowing, blood pressure.

### Cardiovascular system

Also known as the circulatory system, the cardiovascular system is responsible for delivering blood throughout the body, which provides oxygen and nutrients to all of our cells. The heart is the most important organ within the cardiovascular system, responsible for pumping blood throughout the body.

### Respiratory system

This system regulates your breathing. It includes the nose, throat, windpipe, voice box, and lungs.

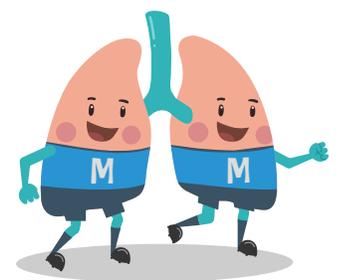
### Alcohol poisoning

The sometimes deadly overdose of alcohol; it occurs when there is so much alcohol in the body that the areas of the brain that control basic life-sustaining functions, like the medulla, begin to shut down.



BRAINSTEM

CARDIOVASCULAR



RESPIRATORY SYSTEM

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See all lessons



Kids and alcohol don't mix.

For more info head to [AskListenLearn.org](http://AskListenLearn.org)

# VOCABULARY WITH PHONETICS

Medulla



**Medulla**

me•dul•la



**Brainstem**

brain stem

**Cardiovascular system**

car•dio•vas•cu•lar

**Respiratory system**

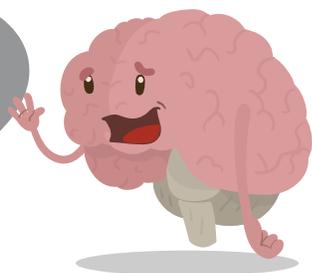
res•pi•ra•to•ry sys•tem

**Alcohol poisoning**

al•co•hol poi•son•ing

# VOCABULARY WITH PHONETICS

Use these  
FLASHCARDS For  
eXtra practice!



One of the most important parts of the brain; the medulla controls breathing and heart functioning. The medulla is part of the brainstem.

Also known as the circulatory system, the cardiovascular system is responsible for delivering blood throughout the body, which provides oxygen and nutrients to all of our cells. The heart is the most important organ within the cardiovascular system, responsible for pumping blood throughout the body.

The brainstem connects the rest of the brain to the spinal cord and helps control basic body functions like breathing, swallowing, blood pressure.

The sometimes deadly overdose of alcohol; it occurs when there is so much alcohol in the body that the areas of the brain that control basic life-sustaining functions, like the medulla, begin to shut down.

This system regulates your breathing. It includes the nose, throat, windpipe, voice box, and lungs.

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## Comprehension Questions

Be sure to write your answers in full sentences and cite evidence from the video.



1 Where is the medulla within your brain?



2 What systems does the medulla control?



3 What happens to your body when the medulla is impaired by alcohol?



4 Summarize the overall message of this video.

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# Medulla



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

breathing

heart rate

brain stem

cardiovascular system

respiratory

voluntary

medulla

alcohol poisoning

brain

ask listen learn

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# Medulla



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1. breathing 2. heart rate 3. brain stem 4. cardiovascular system 5. respiratory 6. voluntary 7. medulla 8. alcohol poisoning 9. brain 10. ask listen learn

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# STANDARDS ALIGNMENT

LESSON 7

## Alcohol and Your Developing Medulla

Content	Student Objectives	Classroom Activities	Assessment
<ul style="list-style-type: none"> <li>• Medulla functionality</li> <li>• How alcohol affects the medulla</li> <li>• Alcohol poisoning</li> <li>• Determining credible and reliable sources</li> </ul>	<p><i>Students will be able to:</i></p> <ul style="list-style-type: none"> <li>• Identify the life-sustaining functions of the medulla</li> <li>• Recognize the effects of alcohol on the medulla</li> <li>• Conceptualize the severity of alcohol poisoning</li> <li>• Demonstrate the ability to access valid resources and services to enhance health</li> </ul>	<ul style="list-style-type: none"> <li>• Video and class discussion</li> <li>• Alcohol poisoning review</li> <li>• Too Much activity</li> <li>• Alcohol facts vs. myths</li> <li>• Appropriate Resources activity and summary</li> </ul>	<p><b>Formative:</b></p> <ul style="list-style-type: none"> <li>• Written discussion questions</li> <li>• Vocabulary homework</li> <li>• Appropriate Resources summary</li> </ul> <p><b>Summative:</b></p> <ul style="list-style-type: none"> <li>• Argumentative essay about why drinking alcohol is harmful for kids and adolescents</li> </ul>



## Standards

**CCSS:**

- |   |  |   |
|---|--|---|
| <ul style="list-style-type: none"> <li>• RI.5-7.1</li> <li>• RI.5-7.2</li> <li>• RI.5-7.4</li> <li>• RI.5-7.6</li> <li>• RI.5-7.7</li> <li>• RI.5-7.8</li> <li>• RI.5-7.9</li> <li>• RI.5-7.10</li> <li>• RST.6-8.1</li> <li>• RST.6-8.2</li> <li>• RST.6-8.4</li> <li>• RST.6-8.6</li> <li>• RST.6-8.7</li> <li>• RST.6-8.8</li> <li>• RST.6-8.9</li> <li>• RST.5-7.10</li> <li>• W.5-7.1</li> </ul> | <ul style="list-style-type: none"> <li>• W.5-7.4</li> <li>• W.5-7.7</li> <li>• W.5-7.8</li> <li>• W.5-7.9</li> <li>• W.5-7.10</li> <li>• WHST.6-8.1</li> <li>• WHST.6-8.4</li> <li>• WHST.6-8.7</li> <li>• WHST.6-8.8</li> <li>• WHST.6-8.9</li> <li>• WHST.6-8.10</li> <li>• L.5-7.1</li> </ul> | <ul style="list-style-type: none"> <li>• L.5-7.2</li> <li>• L.5-7.3</li> <li>• L.5-7.4</li> <li>• SL.5-7.1</li> </ul> |
|---|--|---|

**NHEA:**

- 1
- 3
- 4
- 8
- 8

**NGSS**

- MS.LS1.3
- MS.LS1.8
- MS.LS1.5

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