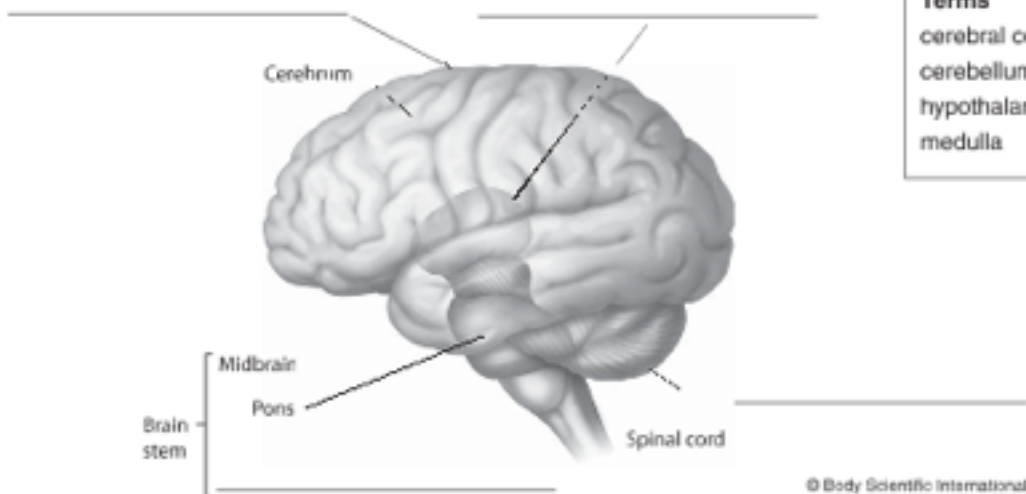


## Lesson 10.1

**Alcohol and the Brain**

*Alcohol is a depressant, which means that it slows down the central nervous system and significantly affects the brain. Alcohol affects different parts of the brain in different ways; it disrupts physical functioning in some parts and causes psychological changes in others.*

*On the brain diagram below, identify each unlabeled part of the brain. Then, explain the effect that alcohol has on that part of the brain. Finally, describe a physical or psychological consequence associated with impaired function of that part. For question 1, explain the effect of alcohol on and the consequences of impairment for neurotransmitters, which are chemicals in the brain.*



1. Part of the brain: *neurotransmitters*

Effect of alcohol: \_\_\_\_\_

Consequences of impairment: \_\_\_\_\_

2. Part of the brain: *cerebral cortex*

Effect of alcohol: \_\_\_\_\_

Consequences of impairment: \_\_\_\_\_

3. Part of the brain: *cerebellum*

Effect of alcohol: \_\_\_\_\_

Consequences of impairment: \_\_\_\_\_

4. Part of the brain: *hypothalamus*

Effect of alcohol: \_\_\_\_\_

Consequences of impairment: \_\_\_\_\_

5. Part of the brain: *medulla*

Effect of alcohol: \_\_\_\_\_

Consequences of impairment: \_\_\_\_\_

## Lesson 10.1

## Level of Intoxication

Once alcohol is consumed, it stays in the body until the liver can metabolize it, or break it down. Generally, the liver can process between .25 and .50 ounces of alcohol every hour. When someone drinks a large amount of alcohol in a short period of time, also known as binge drinking, the body cannot break down the alcohol fast enough. Binge drinking results in a high blood alcohol concentration and a high level of intoxication.

Study the information in the box below about how much alcohol is in each type of drink. Then, use this information to answer the questions below. For each scenario presented, determine how many ounces of alcohol each person consumed, how much of that alcohol each person has processed, and who is the most intoxicated by the time everyone goes home.

**Processing Alcohol**

The liver can process between .25 and .50 ounces of alcohol each hour. In the scenarios below, assume that everyone is processing alcohol at .30 ounces per hour.

**Alcohol Content Guide**

- 0.6 ounces of alcohol = 12 ounces of beer
- 8 ounces of malt liquor
- 5 ounces of wine
- 1.5 ounces of gin/vodka/whiskey

1. Kate, Bill, and Stacy have been drinking together for three hours. During this time frame, Kate has consumed two glasses of beer. Bill has consumed three shots of vodka and a glass of beer. Stacy has had one and a half glasses of malt liquor.
  - A. How many ounces of alcohol have Kate, Bill, and Stacy consumed?
    - Kate: \_\_\_\_\_
    - Bill: \_\_\_\_\_
    - Stacy: \_\_\_\_\_
  - B. How many ounces of alcohol do they process in three hours? \_\_\_\_\_
  - C. How many ounces of alcohol are left unprocessed?
    - Kate: \_\_\_\_\_
    - Bill: \_\_\_\_\_
    - Stacy: \_\_\_\_\_
  - D. Who is the most intoxicated? \_\_\_\_\_
2. Gene and John arrived at the bar two hours ago. Within this time period, Gene drank two shots of vodka and a glass of malt liquor. John had one beer.
  - A. How many ounces of alcohol have Gene and John consumed?
    - Gene: \_\_\_\_\_
    - John: \_\_\_\_\_

Name \_\_\_\_\_

B. How many ounces of alcohol do they process in two hours? \_\_\_\_\_

C. How many ounces of alcohol are left unprocessed?

Gene: \_\_\_\_\_

John: \_\_\_\_\_

D. Who is the most intoxicated? \_\_\_\_\_

3. Wine is being served at this week's book discussion hour. In that hour, Lauren has consumed three glasses of wine, Andrea has had one glass, and Luke has had half a glass.

A. How many ounces of alcohol have Lauren, Andrea, and Luke consumed?

Lauren: \_\_\_\_\_

Andrea: \_\_\_\_\_

Luke: \_\_\_\_\_

B. How many ounces of alcohol do they process in one hour? \_\_\_\_\_

C. How many ounces of alcohol are left unprocessed?

Lauren: \_\_\_\_\_

Andrea: \_\_\_\_\_

Luke: \_\_\_\_\_

D. Who is the most intoxicated? \_\_\_\_\_

4. Barry is at a bachelor party for his friend Derek. During the past six hours of partying, Barry has consumed three beers and two shots of vodka. Derek has had six beers and four shots of vodka.

A. How many ounces of alcohol have Barry and Derek consumed?

Barry: \_\_\_\_\_

Derek: \_\_\_\_\_

B. How many ounces of alcohol do they process in six hours? \_\_\_\_\_

C. How many ounces of alcohol are left unprocessed?

Barry: \_\_\_\_\_

Derek: \_\_\_\_\_

D. Who is the most intoxicated? \_\_\_\_\_

## Lesson 10.2

## The Effects of Underage Drinking

*Although it is illegal in all states for people younger than 21 years of age to drink, underage drinkers account for 11% of all alcohol consumed in the United States. Teenagers who drink put themselves at risk for long-term health problems. They also put themselves at risk for immediate problems that can affect their health, futures, and relationships.*

*For each of the scenarios presented here, determine whether the teen's drinking is affecting his or her physical health, education, social life, or future.*

1. Samantha's sister is annoyed with her because her drinking has gotten in the way of their old movie night tradition. Samantha has been missing more and more movie nights since she started hanging out with a new group of friends and began drinking.

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2. Ben was pulled over while driving under the influence of alcohol and was charged with a DUI. As a result, he had his license suspended. Not being able to drive in the evenings means that he can't get to his part-time job at a local fast-food restaurant. He has been saving up money for college, but now he may lose his job.

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3. Devon started hanging out with a new group of friends, and now he often spends his evenings drinking with them. As a result, he has missed several football practices. The season just began, and his coach cannot afford to have a player who doesn't pull his weight. Devon is cut from the team.

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4. Kiki's habit of having a few drinks on the weekends with her friends has gotten out of hand. Now she's been drinking on school nights, and the hangovers she has in the mornings make it hard to concentrate in class. Recently, she failed an important test in her math class.

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5. Seth spent a Saturday drinking with his friends and he knew he was too intoxicated to drive home. Instead, he walked home, but the weather was very cold that evening. As a result, Seth caught a bad cold and had to stay in bed for several days.

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