What Causes Addiction?

**DIRECTIONS:** Read the text passage and study the diagrams below to learn how drugs such as opioids change the way the brain works. Then, use the information along with what you learned in the article to answer the questions that follow.

**DRUGS AND THE BRAIN**

Drugs affect the way signals are sent in the brain’s reward circuit. This network of structures is activated when you do something pleasurable.

Dopamine is a chemical that helps signals pass between nerve cells in the brain. When you do something enjoyable, such as eat chocolate, dopamine levels increase (see top diagram). Receptors detect the rise in dopamine. This helps your brain remember the pleasurable behavior so that you will most likely want to do it again.

Using drugs, including opioids, causes dopamine levels to rise much higher than with other enjoyable activities (see bottom diagram). When drugs are misused over time, the brain becomes used to the boost of dopamine that drugs deliver. This leads to powerful cravings that make it difficult to stop. The state of being ruled by these cravings is addiction.

**THINK IT THROUGH**

Use a separate sheet of paper to record your answers to the questions below.

1. What is dopamine? What role does it play in the brain?
2. Why are drugs more addictive than eating chocolate?
3. Explain why a person who is addicted to a drug might continue to use it even if they experience negative consequences?
4. The article “Opioids: What You Need to Know” explained that medications can help treat addiction. Based on what you learned above, how might these medications work? Explain your answer.

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