

**[Questions] How sugar affects the brain** by Nicole Avena

1. Sugar is a term used to describe a class of molecules of \_\_\_\_\_.

2. List three forms of sugar that are mentioned in the speech.

(1) \_\_\_\_\_

(2) \_\_\_\_\_

(3) \_\_\_\_\_

3. The following paragraph describes how sugar affects the brain and what happens when sugar hits our tongue. Fill in the blanks.

Sugar activates the sweet-taste receptors, part of the taste buds on the

(1) \_\_\_\_\_. These receptors send a signal up to the (2) \_\_\_\_\_ stem,

and from there, it forks off into many areas of the forebrain, one of which is the cerebral cortex.

Different sections of the cerebral cortex process different tastes: (3) \_\_\_\_\_, salty,

(4) \_\_\_\_\_, and (5) \_\_\_\_\_. From there, the signal activates the brain's

(6) \_\_\_\_\_ system, which helps answer a single, subconscious question: should I

(7) \_\_\_\_\_ (3 words)? Your stomach has

(8) \_\_\_\_\_ (2 words), too. They are not taste buds, but they send

(9) \_\_\_\_\_ to your brain that you are (10) \_\_\_\_\_ or that

your body should produce more (11) \_\_\_\_\_ to deal with the extra sugar you're eating.

4. Which statement is **not true** about dopamine?

- There are many dopamine receptors in the forebrain.
- Dopamine is the major currency of our reward system.
- Broccoli causes dopamine to be released, but not as violently as drugs.
- Alcohol, nicotine, and heroin send dopamine into overdrive.

5. If you eat the same balanced meal many days in a row, your dopamine levels will spike less and less, and will eventually level out. Why?
  
6. Suppose, instead of a balanced meal, you eat sugar-rich food many days in a row. What will happen to your dopamine levels?
  
7. Which statement is true about sugar?
  - a. Some types of sugar don't kickstart a domino effect in our brain that sparks a rewarding feeling.
  - b. Even eating a wedge of cake once in a while be harmful to your health.
  - c. Eating sugar-rich food will not cause any problems if you eat it with vegetables.
  - d. Sugar behaves a little bit like a drug, and that is why some people get hooked on sugary foods.