

Expert Review of the Safety of Aspartame

Quiz Questions

- 1) The program discusses findings from an expert panel review on aspartame safety. Which of the following statements is not true about this review?
 - a. The panel was convened because questions about the safety of aspartame have continued to surface in the press and on the Internet.
 - b. Two recent animal studies from the European Ramazzini Foundation in Italy refueled concerns regarding aspartame safety.
 - c. The Food and Drug Administration mandated the review because of concerns about aspartame safety.
 - d. A panel of international toxicology experts was assembled to conduct the review.

- 2) Which of the following statements about the Acceptable Daily Intake (ADI) is true?
 - a. The ADI is the amount of an ingredient considered safe to consume every day for a lifetime without any adverse effects.
 - b. Exceeding the ADI does not mean adverse health effects will occur.
 - c. The ADI is set by determining a consumption level of an ingredient that has no effect in animal studies (the “No Observed Effect Level” or NOEL) and dividing by a safety factor of at least 100.
 - d. All of the statements are true.

- 3) Which of the following steps did the expert panel use to assess aspartame safety?
 - a. A literature review of all scientific studies related to aspartame safety, except those on sensory properties, product applications and potential health benefits.
 - b. A literature review of human scientific studies related to aspartame safety. Animal studies were not included.
 - c. An assessment of current consumption levels using recent NHANES data, including estimates of the aspartame content of food products determined through industry data, literature reports and conservative assumptions about the aspartame content of products.
 - d. a and c

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- 4) Which of the following statements about the expert panel's assessment of aspartame consumption levels is false?
- a. The assessment included only users of low-calorie sweeteners.
 - b. The assessment likely over-estimated aspartame consumption because it assumed that the low-calorie sweetener in products was 100% aspartame at the highest amounts allowed.
 - c. The assessment found that among the heaviest users (95th percentile) aspartame consumption was about 50% of the ADI.
 - d. The assessment found that among average users (50th percentile) aspartame consumption was about 10% of the ADI.
- 5) Which statement about the ADI for aspartame is false?
- a. The U.S. Food and Drug Administration set the ADI for aspartame at 20 mg/kg of body weight for adults.
 - b. It's unlikely that either adults or children will consume enough aspartame to reach the ADI.
 - c. The aspartame ADI for children is the same as the level set for adults.
 - d. To reach the aspartame ADI, a 100-pound person would have to consume about 12 12-ounce cans of an aspartame-sweetened soft drink or 64 tabletop sweetener packets in a day.
- 6) Which of the following statements about aspartame metabolism is true?
- a. Protein-rich foods such as milk, cheese and meat contribute several times more of the amino acids aspartic acid and phenylalanine to the diet than does aspartame.
 - b. The digestion of a medium banana yields about the same amount of methanol as a 12-ounce serving of an aspartame-sweetened soft drink, or about 20 milligrams.
 - c. Aspartame never leaves the intestinal mucosal cells. The only components that enter the bloodstream are methanol and the two amino acids aspartic acid and phenylalanine.
 - d. All of the above are true.

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- 7) Which of the following statements about methanol metabolism is false?
- a. Adults can safely consume up to 200 milligrams of methanol.
 - b. Methanol is converted into formaldehyde by the same liver enzyme that is active in the metabolism of many different alcohols.
 - c. The adult human liver can metabolize 22 mg of formaldehyde per minute into formic acid and CO₂ and water.
 - d. We are constantly being exposed to methanol from foods and other products.
- 8) Studies of healthy adults and infants given large doses of aspartame showed significant increases in blood levels of methanol and formic acid.
- a. True
 - b. False
- 9) Which of the following statements about the expert panel's findings on aspartame and cancer risk is true?
- a. Numerous long-term animal studies assessing cancer risk, including studies with aspartame intake levels over 4,000 mg/kg, found no evidence of carcinogenic or cancer promoting effects.
 - b. Several small-scale epidemiological studies and a recent large-scale study by the National Cancer Institute found no association between aspartame consumption and brain tumors in humans.
 - c. The expert panel agreed with conclusions by the FDA and European Food Safety Authorities that recent animal studies by the European Ramazzini Foundation in Italy, which reported that aspartame increased cancer in rats, had numerous methodological and interpretation errors, did not provide credible evidence that aspartame is carcinogenic, and did not warrant a further review of aspartame's safety or revision of the ADI.
 - d. All of the above are true.

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- 10) Which of the following was not one of the findings from the expert panel's review?
- a. Animal and human studies show no evidence that current consumption of aspartame adversely affects pregnancy, lactation or development.
 - b. Several studies suggest that aspartame affects learning and behavior in children and adults.
 - c. A subset of the population may be susceptible to headaches from aspartame, but there is no known biological mechanism for this effect.
 - d. Extremely large doses of aspartame did not cause convulsions or seizures in animal studies, nor did doses of up to the ADI in susceptible children and adults.
- 11) Following their review, the panel's overall conclusion was that aspartame is a thoroughly-studied sweetener with a long history of safe use in the food supply and can help reduce the caloric content of a wide variety of foods.
- a. True
 - b. False
- 12) The individuals on the expert panel were not told who funded the review, nor were the names of the panel's experts revealed to the company that funded the review, until after the manuscript of the panel's findings had been submitted for publication.
- a. True
 - b. False