

CAD Quiz Contest #1

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Quizzes are fun. I usually can't pass them up. So, every once in a while, I make up my own quiz to let readers find out what they know about this important topic.

CAD is the acronym for cervical acceleration/deceleration, a.k.a. whiplash. But this time I thought it might be fun to provide a little incentive, especially since it is the holiday season. So here's the deal: I'm making the quiz somewhat challenging, and the answers will be posted on my website ([\[url=http://www.srisd.com\]http://www.srisd.com\[/url\]](http://www.srisd.com)). After the contest is over, which will be exactly two weeks after this issue is published. The highest score wins. In the case of a perfect score or tie, the earliest post gets the victory. Answers should be posted to my website. The prize is a \$150 gift certificate toward any of the products or services listed on the website. Good luck.

1. Based on the latest model of CAD injury, which of the following answers correctly lists the forces to which the neck is exposed during rear impact crash loading, and does so in the correct order of occurrence?
 - a. Compression, tension, shear and bending.
 - b. Tension, compression, shear and bending.
 - c. Shear, tension, bending, shear, compression.
 - d. Bending, shear, bending, compression, tension.
 - e. None are correct.

2. In Europe, black boxes have been placed under the driver's seats of thousands of cars since 1996. In what country has this been carried out?
 - a. England.
 - b. Yugoslavia.
 - c. Switzerland.
 - d. Germany.
 - e. Sweden.

3. What is the acronym given to these devices?
 - a. DRP.
 - b. MMP.
 - c. CPR.
 - d. ACR.
 - e. None are correct.

4. The latest interest in CAD research concerns another acronym: NIC. What do the letters represent?
- Neck index of compliance.
 - Neck injury criterion.
 - No-injury conditions.
 - Neck in compression.
 - None are correct.
5. What is the mean acceleration of a vehicle that experiences a delta V of 5 mph over the course of 100 milliseconds?
- 35 g.
 - 12.4 g.
 - 2.3 g.
 - 1.6 g.
 - 50 g.
6. Which statement concerning the crash described in question 5 is most correct, assuming it is a rear impact crash?
- The driver's delta V will also be 5 mph.
 - The driver's delta V will be about 2.5 times that of his vehicle.
 - The driver's head acceleration will be about the same as the vehicle's.
 - The driver's head acceleration and delta V will likely be higher than that of the vehicle.
 - None are correct.
7. Which of the following are not recognized as occupant risk factors in low speed crashes?
- Non-use of seat belt/shoulder harness.
 - Diabetes.
 - Age under 10 years.
 - History of scleroderma.
 - None are correct.
8. Based on research by Bogduk and others, one of the most common generators of neck pain in those suffering from the late effects of CAD injury is:
- The disc.
 - The anterior longitudinal ligament.
 - The posterior ligamentous complex.
 - The facet joint.
 - The periosteum.
9. What percent of the "normal" population has a flattened or reversed cervical curve?
- About 0.5%
 - About 9%.

- c. About 25%.
- d. About 38%.
- e. None are correct.

10. In a "false start" type of rear impact crash, the lead car starts off from a stop (usually at a traffic signal) and then stops again due to traffic. The driver of the rear car doesn't notice the second stop and strikes the first car. Assuming that the driver of the rear car travels eight feet at a uniform acceleration of 6 fps,² what will the closing speed at contact be?

- a. 6.7 mph.
- b. 9.8 mph.
- c. 14.7 mph.
- d. 2.8 mph.
- e. None are correct.

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JANUARY 2001