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Whiplash Quiz: Test Your Knowledge

By Arthur Croft, DC, MS, MPH, FACO

In this issue, I've decided to present you with something a little different: a multiple choice quiz designed to test your knowledge on the subject of whiplash. Answers to the quiz will be found at the bottom of the page.

1. The range of collision speed in most (nearly 80%) rear impact whiplash injuries occur is:
 - a. 10-25 mph.
 - b. 15-30 mph.
 - c. 1-5 mph.
 - d. 6-12 mph.

2. Early human volunteer crash testing simulating real world rear impact collisions was conducted at UCLA and demonstrated the following relationship:
 - a. The volunteer's head was subjected to 2 1/2 times the acceleration as the vehicle itself.
 - b. The volunteer's head was subjected to about 1/2 the acceleration as the vehicle itself.
 - c. The volunteer's acceleration was roughly equivalent to stepping off a curb.
 - d. In low speed collisions (under 8 mph), no acceleration of the human head can be measured.

3. Regarding the outcome of whiplash injuries, which of the following statements is most accurate?
 - a. The vast majority of whiplash injuries resolve in about 6 weeks.
 - b. The vast majority of whiplash injuries resolve in 6-12 weeks.
 - c. About 25-50% of whiplash injuries fail to resolve completely.
 - d. Whiplash injuries rarely resolve completely.

4. Which of the following variables are not considered to be risk factors for poor outcome in whiplash trauma?

- a. Female gender.
- b. Prior emotional problems.
- c. Advanced age.
- d. Nonawareness of impending impact.
- e. All the above have been shown to be risk factors for poor outcome.

5. Which of the following health assessment instruments have been shown to be useful in the evaluation of whiplash (neck injury) related disability?

- a. The Roland Morris Index.
- b. The revised Oswestry.
- c. The SCL-90-R.
- d. The Neck Disability Index.
- e. Both c and d.

6. Which of the following answers is most correct and current concerning the risk of injury to children in rear impact motor vehicle collisions?

- a. Children have been shown to have about 2/3 the risk of injury of adults.
- b. Children have been shown to have about 1/6 the risk of injury of adults.
- c. Children and adults are at equal risk, but children are injured much less frequently because they are more frequently rear seat passengers and rear seats are generally safer.
- d. Children are more likely than adults to be injured in whiplash trauma.
- e. None of the above.

7. Although a fairly large percentage of persons will have symptoms on a permanent basis following whiplash injury, what proportion of whiplash patients will have disability? Select the one best answer.

- a. 2%.
- b. 5%.
- c. 18%.
- d. 59%.
- e. 10%.

8. A structural lesion that has come to be known as a "rim lesion" consists of:
- a. An injury to the reticular inhibitory mechanism.
 - b. An injury in which the intervertebral disc is separated from the body of the vertebra at the margin.
 - c. An injury to the epiphysis of a long bone.
 - d. A type of deformation of bumper isolators that suggests offset collision mechanisms.
 - e. None of the above.
9. When a vehicle that is stopped (target vehicle), is struck from the rear by another vehicle (bullet vehicle) and moved forward at a speed of 4.5 mph, 4.5 mph represents the target vehicle's:
- a. Barrier equivalent velocity (BEV).
 - b. Energy equivalent speed (EES).
 - c. Delta V.
 - d. Acceleration.
 - e. Who cares? We all know you can't get hurt at this speed.
10. The majority of modern passenger cars behave relatively stiffly in low speed rear impact collisions. Permanent damage to bumper systems begins to occur at which range of collision speeds?
- a. 20-25 mph.
 - b. 2-7 mph.
 - c. 8-12 mph.
 - d. 25-30 mph.
11. According to the authors of the latest full scale rear impact crash tests using human volunteers, the threshold for cervical spine soft tissue injury (expressed in delta V, or change of velocity) is:
- a. 12 mph.
 - b. 5 mph.
 - c. 2 mph.
 - d. 15 mph.

Answers to whiplash quiz:

1. D
2. A
3. C
4. B
5. E
6. A
7. E
8. B
9. C
10. C
11. B

Rate yourself: how did you do?

- If you answered 10 or 11 correctly, you are either a very accomplished guesser or an expert in whiplash.
- If you answered 8 or 9 correctly, you have an above average level of knowledge in whiplash traumatology.
- If you answered 6 or 7 correctly, you can consider yourself average.
- If you answered 4 or 5 correctly, you need to bone up on the subject if you are treating many of these patients.
- If you answered only 3 or less correctly, you might consider going into forestry or shrimp farming.

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