

The Road to Rockingham: Problem Handouts



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The Road to Rockingham

Part 1

NASCAR racing is one of the most rapidly growing spectator sports in the U.S. Each week the track, and corresponding race strategy, is different. That, combined with the "down home" nature of the drivers and America's fascination with the automobile all contribute to the rapidly growing fascination with the sport. For many individuals obtaining "a ride" is their ultimate goal. As a result, they start racing at the local county dirt track, and hopefully are able to move up the ladder to the Busch Series and, ultimately, NASCAR.

Elliott is a young racer that is making it big in the local stock car circuit. He has a sponsor (Frank's Salvage Yard), and has a string of twenty consecutive top-five finishes in the Illinois-Indiana-Wisconsin-Michigan dirt track circuit. Tonight he will be driving his #101 car at the Wisconsin State Fair, and several scouts for the Busch Series will be in the crowd looking for promising young drivers to fill the anticipated vacancies in next year's circuit.

Because drivers on the dirt track circuit do not have the highly financed sponsors seen with the Busch Series or NASCAR, some high-price safety systems are omitted from the automobile or from the driver's equipment.

The race is going well for Elliott—he is currently in first place on lap 45 of the 50-lap feature race. As Elliott comes out of turn 3 and accelerates he is rapidly gaining on the last car in the field. The #99 car immediately in front of him blows a right-front tire, sending it up and into the wall, and then down towards the infield. Elliott locks up his brakes, but is unable to avoid the #99 car and broad-sides it at a little more than 110 mph., causing a rapid deceleration. The #12 car, which was in second position, also locks up its brakes, but slams into the back of Elliott's car at a little more than 90 m.p.h., and sandwiching it between the #99 and #12 cars.

When the emergency crews get to Elliott's car he is unconscious and must be extricated from the race car.

As they work to extricate Elliott from his car and place him on the stretcher and head towards the infield hospital, the EMS crew notes the following:

- Elliott is slowly regaining consciousness, but he is still semi-conscious. However, as the extrication and transfer to a stretcher progresses Elliott becomes more responsive.
- Elliott is complaining of blurred vision, and keeps asking "When does the race start?"

Elliott has obviously sustained several injuries. What might those be, and which should be of the most concern to the EMS crew and why?

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Part 2

Elliott is transferred to the infield hospital, and the attending physicians do a quick assessment of the situation. They note the following:

- Elliott is 25-years-old, 5'10" and weighs 162 lbs. He is muscular and obviously in excellent physical condition.
- As they cut the helmet off (which was not a full-face helmet), it is noted that Elliott was not wearing a HANS device.
- As the examination progresses, Elliott becomes more and more responsive.
- Cervical palpation and manipulation (extension and rotation) demonstrates significant stiffness and pain.
- Tenderness is noted on palpation, particularly over the area of the transverse processes of C4 and C5.

Elliott is med-evacuated to St. Mary's hospital in Milwaukee. In addition to the mild concussion suffered in the accident, the attending physicians are immediately concerned with the possibilities of a head and/or neck injury, so a complete neurological and orthopedic examination are conducted. An MRI is ordered. Results of the examination at St. Mary's note the following:

- A screening neurological examination, including evaluation of deep tendon reflexes and plantar responses were normal.
- MRI demonstrates a disappearance of the normal cervical lordosis.
- Evidence of slight degenerative changes at the middle cervical vertebrae, with some bony spurs (particularly around the intervertebral foramina between C4 and C5) is noted.
- No cervical fractures are noted.

Utilizing *sound anatomical logic*, consider the following questions:

1. Other than the concussion, what is your diagnosis for this patient?
2. What, if any significance would be drawn from the evidence of slight degenerative changes at the middle cervical vertebrae, with some bony spurs (particularly around the intervertebral foramina between C4 and C5)?
3. In descending order of frequency, list the cervical tissue damage that might be caused by such an accident.
4. Pick any two injuries (to cervical tissue) that might be encountered in this case, and give a detailed anatomical description of the structures involved as well as a range of damages that might be encountered (from most to least severity).

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Team and Self Assessment Form

Your name: _____

Please use the rating scale below to describe how you and your team members performed on each of the tasks listed associated with your PBL group's activities. The purpose of the grading is not to divide groups but to reward those making above average effort and to encourage those not giving their fair share to the group overall effort.

5 if Always 4 if Very Often 3 if Sometimes 2 if Rarely 1 if Never

PBL Group Number: _____

Please fill in PBL Group Members' *Last* Names (including your own)

Names _____ _____ _____ _____ _____

Completed assigned tasks _____ _____ _____ _____ _____

Contributed valuable
information to the group _____ _____ _____ _____

Attended group meetings _____ _____ _____ _____

Was honest in reporting
progress about his/her
assigned tasks _____ _____ _____ _____

Participated in writing
final report _____ _____ _____ _____



Now, ***please circle*** the rating below that you feel you would best describe your group's overall performance:

Very good

Good

Barely Acceptable

Poor

Very Poor



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PBL Self Evaluation Form

This evaluation form will not be utilized in assigning any grades. However, it is beneficial to reflect on any progress that you might have made in various areas as a result of participating in a PBL course. Therefore, please evaluate yourself utilizing the following scale.

Scale:

5 = Strongly agree

4 = Agree

3 = Neutral

2 = Disagree

1 = Strongly disagree

Your name: _____

As a result of my participation in PBL in Human Anatomy I feel that I have improved in the areas of:

1. Effective group participation _____

2. Effective group communication _____

3. Evaluation of myself (self evaluation) _____

4. Evaluation of others (peer evaluation) _____

5. Acquiring information to solve complex problems _____

6. Evaluation of the quality of information needed
to solve complex problems _____

7. Working effectively with others _____



8. Higher-order, critical thinking skills _____

Overall improvement rating of yourself: _____

5 = excellent; 4 = good; 3 = average; 2 = needs work; 1 = poor

