

LESSON 3

Understanding the Spine

Timing:
2 x 45 minute blocks



CROSS-CURRICULAR: Sciences, Fine Arts, Health and Career Education

LEARNING OUTCOMES: Sample Grade 5, see p 76

OVERVIEW: This lesson examines the spinal cord, related injuries and how these injuries occur.

CURRICULUM SKILLS / KNOWLEDGE / VALUES:

Students will:

- study the spine and learn how an injury at certain levels of the spine results in specific disabilities
- learn how some spinal injuries occur

TEACHING MATERIALS:

- Spinal Cord Worksheet (photocopy 1 per student and make a transparency) and Answer Key
- Spinal Cord Injuries (see Teacher Backgrounder)
- Glossary (see p 81) — refer to as needed
- website for prevention of spinal cord injuries:
– www.thinkfirst.ca

Teaching Activities

- 1 With the class, share and discuss the diagram of the spine on an overhead. Hand out the Spinal Cord Worksheet for the students to complete.
- 2 With the class, brainstorm how spinal cord injuries can occur. Discuss the difference between a paraplegic and a quadriplegic.
- 3 With the class, discuss how we can participate in activities safely and what students can do to prevent spinal cord injuries (e.g. seat belts, not diving in shallow water).
- 4 In small groups or individually, create a safety poster/brochure that demonstrates an understanding of at least one of the safety aspects discussed.

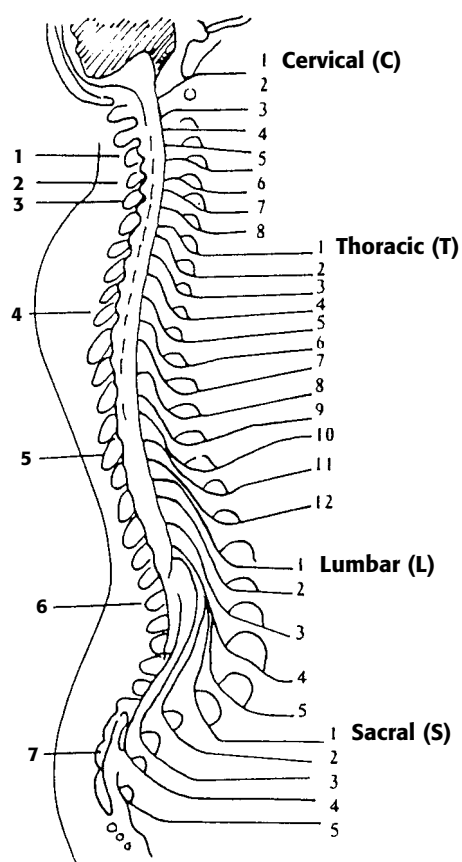
SPINAL CORD INJURIES

The diagram of the spinal cord and vertebrae locates the point of injury (or break) and then describes the disabilities and abilities associated with that level of injury. There are two types of spinal injuries: complete and incomplete. People with complete spinal injuries do not

have movement or sensation below their injury. People with incomplete spinal injuries, however, often retain some movement or sensation below their break. C6 relates to Cervical 6 of the neck and refers to the section of the human spine comprised of seven bony segments, typically referred to as C1 to C8. The neck

supports the weight of the head and protects the nerves that carry sensory and motor information from the brain down to the rest of the body. Review the remaining thoracic, lumbar and sacral areas of the spine and note the difference between a quadriplegic and a paraplegic.

- 1 Quadriplegic – C6 and above**
 - Cannot grip
 - Requires support to sit
- 2 Quadriplegic – C7 and above**
 - Can lift arms above head against resistance
 - May be able to grip
 - Requires support to sit
- 3 Quadriplegic – C8-T1**
 - Can lift arms above head against resistance
 - Can grip firmly
 - Needs support to sit
- 4 Paraplegic – T1-T5**
 - Can sit freely, inclusive balance is poor
 - Full use of arms
- 5 Paraplegic – T5-T10**
 - Can sit freely and inclusive keep balance, but will lose balance if pushed
- 6 Paraplegic – L1-L3**
 - Can sit freely inclusive with reasonable balance
 - Lacking full use of trunk muscles
- 7 Paraplegic L3-S2**
 - Can sit freely, has good balance
 - Full use of trunk muscles



THE INJURED

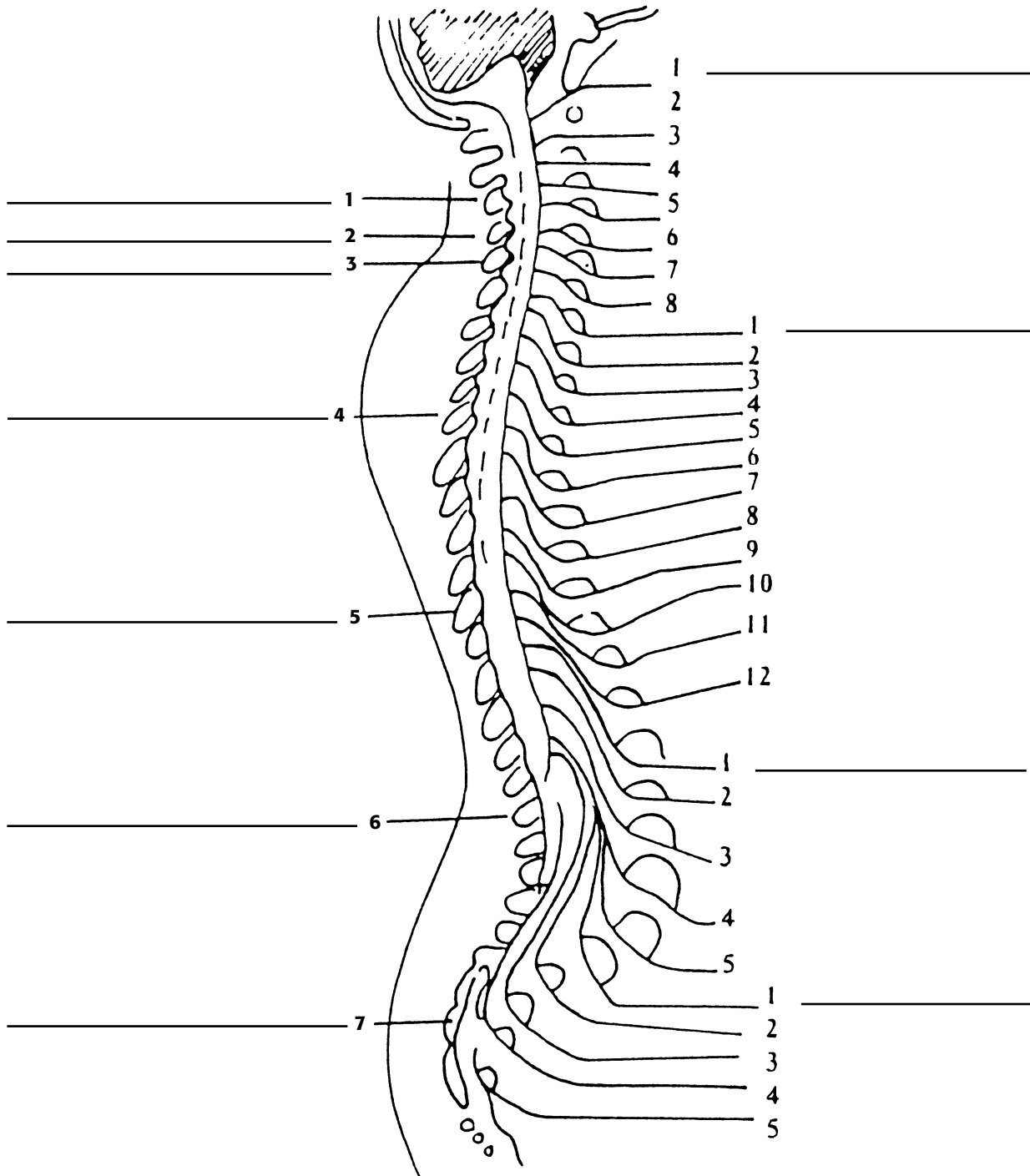
Most spinal cord injuries occur from either motor vehicle accidents (37%) or violence (28%). Falls such as diving accidents (21%) or sports injuries (7%) are the other two leading causes of spinal cord injuries. Most injuries occur to

men between the ages of 16 and 30. The average age for a spinal cord injured person is 31.

Interestingly, 82% of people who sustain spinal cord injuries are male. No one knows why this is, but some researchers suspect that men engage in

more high-risk behaviours and are therefore more likely to be injured. Because there are so few female quadriplegics (and even fewer female quadriplegics who are interested in playing such a high-contact sport), wheelchair rugby is a co-ed sport.

Spinal Cord Worksheet



Spinal Cord Worksheet

