

MODULE BIOMECHANICS OF SPINE

Didactic Unit B: Biomechanical alterations of the spine

Activity 1

Select missing words: Students select a missing word or concept from a dropdown menu. Items may be grouped and used more than once.

- 1) According to the Anderson and Montesano (1988) classification of fractures of the occipital condyles, fracture results from axial loading.

Type I Tipe II Tipe III

- 2) With respect to the Atlantooccipital dislocation, the main mechanism of injury is the force on the cervical spine.

Compression **Distraction** Flexion

- 3) The application of axial loading and flexion of the head causes a fracture of the Atlas vertebra, specifically on the .

Lateral mass **Anterior arch** Posterior arch

- 4) The Atlantodental interval is the horizontal distance between the dens of the axis and the , used in the diagnosis of injuries of the atlas and axis.

Lateral mass **Anterior arch** Posterior arch



5) In odontoid fractures, the stability of the C1-C2 complex is altered by about 40%. However, when the odontoid injury involves the , stability increases and the injury may require surgery.

Alar and transversal Flavam ligament Intertransverse ligament

6) Axial loading of the cervical spine with the neck in neutral position will cause a compression fracture or a fracture of the vertebral body.

Stable **Burst** Unstable

7) One type of injury to the lower cervical spine is the fracture, and occur when a combination of flexion and axial compression forces acts on the spinal column simultaneously.

Teardrop Burst Jefferson

8) The kinematic sequence of the whiplash-associated disorder starts with flexural deformation of the neck and the lordosis .

Changes to kyphosis **Become straight** Increase

9) Seat-belt injury are typical lesions of the thoracolumbar junction as a result of a hyperflexion centered in said area that at the same time causes a force from the most posterior area of the vertebra.

Shears Compression **Distraction**

10) When spinal fusion is required in the lumbar spine, the fused levels that most limit extension and lateral flexion movements are .

L1-L2/L2-L3

L2-L3/L3-L4

L4-L5/L5-S1

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