

9 REVIEW SHEET

EXERCISE The Axial Skeleton

Name Shani NGINTYE Lab Time/Date _____

The Skull

1. First, match the bone names in column B with the descriptions in column A (the items in column B may be used more than once). Then, circle the bones in column B that are cranial bones.

Column A

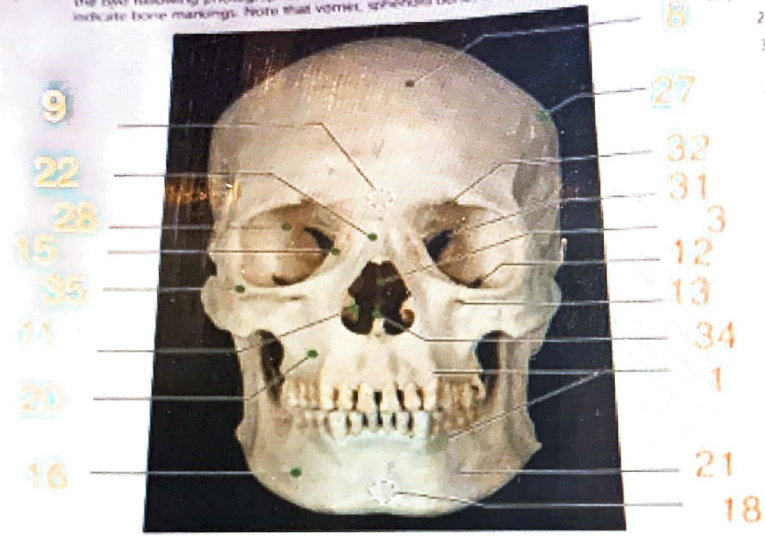
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|-----------------------|--|
| Frontal <u>B</u> | 1. forms the anterior cranium |
| Zygomatic <u>O</u> | 2. cheekbone |
| Nasal <u>H</u> | 3. bridge of nose |
| Palatine <u>J</u> | 4. posterior bones of the hard palate |
| Parietal <u>K</u> | 5. much of the lateral and superior cranium |
| Sphenoid | 6. single, irregular, bat-shaped bone forming part of the cranial base |
| Lacrimal | 7. tiny bones bearing tear ducts |
| maxilla | 8. anterior part of hard palate |
| ethmoid | 9. superior and middle nasal conchae form from its projections |
| Temporal | 10. site of mastoid process |
| occipital | 11. has condyles that articulate with the atlas |
| hyoid | 12. small U-shaped bone in neck, where many tongue muscles attach |
| Temporal | 13. organ of hearing found here |
| Vomer | 14. two bones that form the nasal septum |
| inferior nasal concha | 15. forms the most inferior turbinate |

Column B

- a. ethmoid
- b. frontal
- c. hyoid
- d. inferior nasal concha
- e. lacrimal
- f. mandible
- g. maxilla
- h. nasal
- i. occipital
- j. palatine
- k. parietal
- l. sphenoid
- m. temporal
- n. vomer
- o. zygomatic

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2. Using choices from the numbered key to the right, identify all bones and bone markings provided with various views of the skull in the two following photographs. A colored dot at the end of a leader line indicates a bone. Leader lines without colored dots indicate bone markings. Note that vomer, sphenoid bone, and zygomatic bone will each be labeled twice.



- Key:
- 1 alveolar process
 - 2 carotid canal
 - 3 ethmoid bone
 - 4 external occipital protuberance
 - 5 foramen lacerum
 - 6 foramen magnum
 - 7 foramen spinosum
 - 8 foramen transversarium
 - 9 foramen transversarium
 - 10 incisive fossa
 - 11 inferior nasal concha
 - 12 inferior orbital fissure
 - 13 infraorbital foramen
 - 14 jugular foramen
 - 15 lacrimal bone
 - 16 mandible
 - 17 mandibular fossa
 - 18 mandibular symphysis
 - 19 mastoid process
 - 20 maxilla
 - 21 mental foramen
 - 22 nasal bone
 - 23 occipital bone
 - 24 occipital condyle
 - 25 palatine bone
 - 26 palatine process of maxilla
 - 27 parietal bone
 - 28 sphenoid bone
 - 29 styloid process
 - 30 stylomastoid foramen
 - 31 superior orbital fissure
 - 32 supraorbital foramen
 - 33 temporal bone
 - 34 vomer
 - 35 zygomatic bone
 - 36 zygomatic process of maxilla

3. Define suture. Fibrous joint between skull bones

4. With one exception, the skull bones are joined by sutures. Name the exception.

Joints between the mandible and temporal bones

5. What bones are connected by the lambdoid suture?

occipital and parietal

What bones are connected by the squamous suture?

parietal and temporal bones

6. Name the eight bones of the cranium. (Remember to include left and right.)

frontal occipital left parietal right parietal
left temporal right temporal ethmoid sphenoid

7. List the bones that have sinuses, and give two possible functions of the sinuses.

Maxillary, frontal, sphenoid, ethmoid

1. Lighten the skull

2. Improve the voice & produce mucus to moisturize inside the nose.

8. What is the bony orbit?

The socket of the eye.

What bones contribute to the formation of the orbit?

Ethmoid, frontal, sphenoid, zygomatic, lacrimal, maxillary, palatine.

9. Why can the sphenoid bone be called the keystone bone of the cranium?

It's in contact with the other cranial bones.

The Vertebral Column

10. The distinguishing characteristics of the vertebrae composing the vertebral column are noted below. Correctly identify each described structure by choosing a response from the key.

- Key: a. atlas
 b. axis
 c. cervical vertebra—typical
 d. coccyx
 e. lumbar vertebra
 f. sacrum
 g. thoracic vertebra

Atlas 1. vertebra type containing foramina in the transverse processes, through which the vertebral arteries ascend to reach the brain

Cervical Vertebra-Typical 2. dens here provides a pivot for rotation of the first cervical vertebra (C₁)

Thoracic Vertebra 3. transverse processes faceted for articulation with ribs; spinous process pointing sharply downward

Sacrum 4. composite bone; articulates with the hip bone laterally

Lumbar Vertebra 5. massive vertebra, weight-sustaining

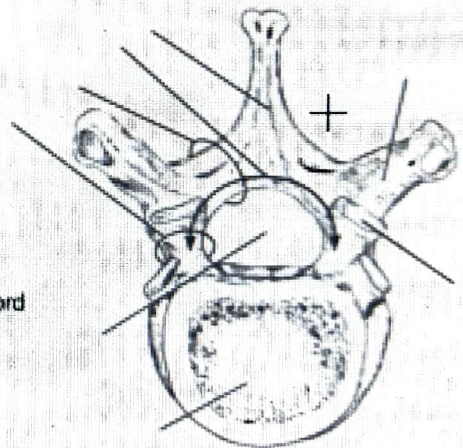
Coccyx 6. "tail bone" fused vertebrae

Axis 7. supports the head; allows a rocking motion in conjunction with the occipital condyles

11. Using the key, correctly identify the vertebral parts/areas described below. (More than one choice may apply in some cases.) Also use the key letters to correctly identify the vertebral areas in the diagram.

- Key: a. body
 b. intervertebral foramina
 c. lamina
 d. pedicle
 e. spinous process
 f. superior articular facet
 g. transverse process
 h. vertebral arch
 i. vertebral foramen

- I 1. cavity enclosing the spinal cord
A 2. weight-bearing portion of the vertebra
E G 3. provide levers against which muscles pull
G F 4. provide an articulation point for the ribs
B 5. openings providing for exit of spinal nerves
H A 6. structures that form an enclosure for the spinal cord
D C 7. structures that form the vertebral arch



12. Describe how a spinal nerve exits from the vertebral column. _____

The spinal nerve exits through the intervertebral foramen

13. Name two factors/structures that permit flexibility of the vertebral column. _____

Discs

and

S-shape of the vertebrae column

14. What kind of tissue makes up the intervertebral discs? _____

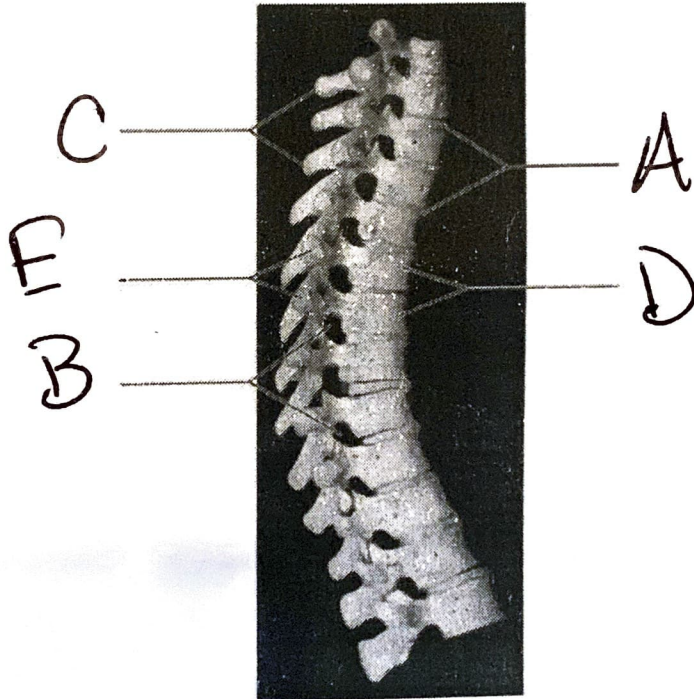
Fibrocartilage

15. What is a herniated disc? A ruptured disc in which a portion of the disc protrudes outward. It can compress a nerve, leading to paralysis.
 What problems might it cause?

16. Which two spinal curvatures are obvious at birth? ~~Torso~~ Cervical and ~~Thoracic~~ Lumbar
 Under what conditions do the secondary curvatures develop? Cervical curvature happens when babies start raising their head themselves and lumbar curvature happens when babies start to walk.

17. Use the key to label the structures on the thoracic region of the vertebral column.

- Key:
- a. intervertebral discs
 - b. intervertebral foramina
 - c. spinous processes
 - d. thoracic vertebrae
 - e. transverse processes



The Thoracic Cage

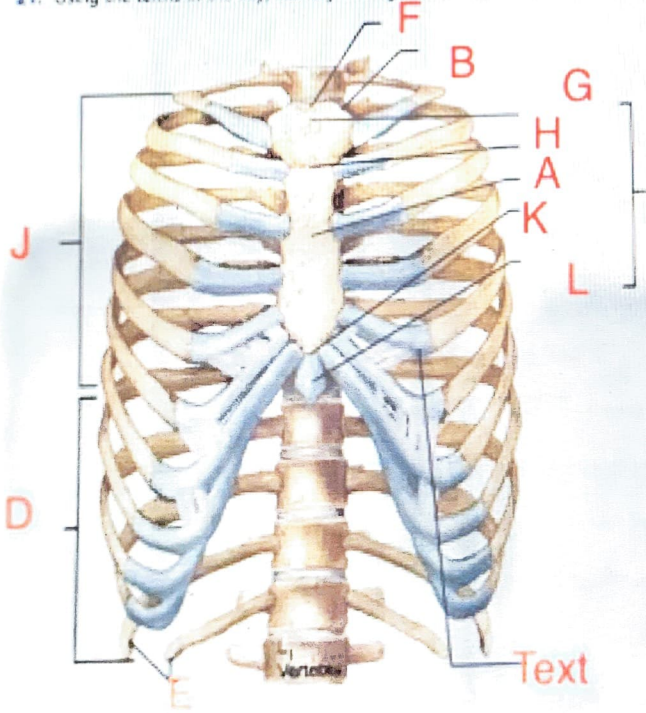
18. The major bony components of the thorax (excluding the vertebral column) are the Ribs and the Sternum

19. Differentiate between a true rib and a false rib. True ribs are the top 7 pairs that are connected to the sternum and the False ribs are the bottom 3 pairs of ribs.

is a floating rib a true or a false rib? It's neither because indirectly attached to the sternum.

20. What is the general shape of the thoracic cage? Cone shaped

21. Using the terms in the key, identify the regions and landmarks of the thoracic cage



- Key
- a. body
 - b. clavicular notch
 - c. costal cartilage
 - d. false ribs
 - e. floating ribs
 - f. jugular notch
 - g. manubrium
 - h. sternal angle
 - i. sternum
 - j. true ribs
 - k. xiphisternal joint
 - l. xiphoid process

Text

The Fetal Skull

22. Are the same skull bones seen in the adult also found in the fetal skull? ~~no~~ Yes
23. How does the size of the fetal face compare to its cranium? It compares because it gets shortened and overshadowed by a larger cranium.
How does this compare to the adult skull? in the adult skull, the bones in the face are bigger and the skull bone is shorter.
24. What are the outward conical projections on some of the fetal cranial bones? Growth centers
25. What is a fontanelle? It's the space between the bones of a infant skull.
What is its fate? The fate is 6-18 months in age.
What is the function of the fontanelles in the fetal skull? Its to mold the fetal head during the passage through the birth canal.
26. Craniosynostosis is a condition in which one or more of the fontanelles is replaced by bone prematurely. Discuss the ramifications of this; early closure.
The ramifications of early closure can cause moderate to major issues with skull and brain growth.
27. As we age, we often become shorter. Explain why this might occur. The spinal ~~column~~ column shortens and the cartilage inbetween our joints gets worn down.
28. The xiphoid process is often missing from the sternum in bone collections. Hypothesize why it might be missing.
Because it doesn't fit with other bones and it's small.