

Name _____

Variation in the Axial Skeleton

Take-home portion of Human Anatomy Lab Exam 1

Complete this exercise by visiting the on-line text *Illustrated Encyclopedia of Human Anatomic Variation* at <http://www.anatomyatlases.org/AnatomicVariants/AnatomyHP.shtml>, then scroll down to the “Skeletal System Listed by Region”.

Cranium (Note Figures available at bottom.)

_____ 1. What percentage of individuals have sutural bones at the lambdoid suture?

Frontal bone

_____ 2. What is the frequency of persistence of a complete metopic suture into adulthood in American Caucasians?

_____ 3. What is the frequency of persistence of the metopic suture in American Blacks?

Maxilla (Note graphic illustrating variation in sinuses.)

_____ 4. According to Kadanoff et. al., how frequently is the infraorbital foramen doubled?
(Note associated graphic in Cranium section.)

Mandible (True or False)

___ 5. Unerupted teeth have been found in both the mandibular ramus and coronoid process.

___ 6. The mental foramen is usually positioned inferior to the 1st molar tooth.

Numerical Variation in Vertebral Column

_____ 7. According to these authors, what percentage of individuals have a “normal” (7-12-5-5-4) vertebral distribution?

_____ 8. Which region exhibits the greatest variation?

_____ 9. Which region exhibits the least variation?

_____ 10. What percentage of whites had an increase to 6 sacral vertebrae due to fusion of the 1st coccygeal?

Sacrum & coccyx

_____ 11. Note the occasional persistence of a tail, a reflection of our vertebrate ancestry. What is the longest reported occurrence of a tail in humans?

Cervical vertebrae

- _____ 12. Your text author (Saladin) says that C₂-C₆ are typically bifid. Do these authors agree?
- _____ 13. On which vertebrae have cervical ribs been observed?
- _____ 14. The 7th cervical vertebra is often termed the “vertebra prominens” because it forms the palpable prominence at the dorsum of the neck. How frequently is it really the most prominent?

Thorax - Sternum

- _____ 15. Gideon Oliver, famed fictional forensic anthropologist, is examining a sternum unearthed at a crime scene and makes the following measurements: body: 9.9 cm, manubrium 5.1 cm. Does he conclude that the skeleton is male or female?

Visit <http://www.ajronline.org/cgi/content/full/186/4/956> to see current research on anatomic variation. Be sure to scroll down and view the CT images. According to these authors:

- _____ 16. How frequently was a foramen/formina observed in the xiphoid process?
- _____ 17. How often were suprasternal bones/tubercles found?