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**THE
VISIBLE
APE
PROJECT**

3D Anatomy Activity

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What are the major muscular differences between the head and neck muscles of apes?

There are two muscular differences among the head & neck muscles of the apes.

Omohyoideus

Bonobos, gorillas, orangutans, and gibbons have a single belly of the omohyoideus, compared to the two bellies that are usually present in both common chimpanzees and modern humans. In common chimpanzees (and humans) the omohyoideus is divided into two bellies by an intermediate tendon. This difference can be observed in the neck muscles labeled 16a and 16b on the head/neck muscle reconstructions.

Digastricus anterior

Digastricus anterior is absent in orangutans, but present in all the other ape species. This difference can be observed in the muscle labeled 7 (under the mandible) on the head/neck muscle reconstructions.

Occipitalis, the muscle labeled number 15 on the back of the cranium on the common chimpanzee and bonobo, are also always present in the other apes. They are not included in the reconstructions of the gorilla, orangutan, and bonobo for visual clarity.

What are the muscular differences between the upper limbs of common chimpanzees and bonobos?

There is one main muscular difference between the common chimpanzee and the bonobo upper limbs. In the hand, the common chimpanzee has intermetacarpales and flexores breves profundi muscles, while these muscles are not there in bonobos. The bonobos instead have dorsal interossei, which result as a fusion of the intermetacarpales and flexores breves profundi muscles. Dorsal interossei is a feature that bonobos share with modern humans.

Some other minor muscular differences between common chimpanzee and bonobo upper limbs is that bonobos have a stout tendon of the flexor digitorum profundus attaching to digit 1, and an attachment between the pectoralis minor and the coracoid process of the scapula

What are the muscular differences between the lower limbs of the common chimpanzees and bonobos?

There is one main difference between the common chimpanzee and the bonobo lower limb musculature. In the posterior leg, bonobos have a scansorius muscle while the common chimpanzee does not. Lacking a scansorius is common in both humans and common chimpanzees.

Some other minor muscular differences between common chimpanzee and bonobo lower limbs is that bonobos have popliteus to fibula and extensor hallucis longus to proximal big toe phalanx attachments.