**Dissection of muscle fibres from chicken wings STUDENT**

**Introduction**

In this activity, you will be looking at the external appearance, function and internal structures of a chicken wing. In doing this, you will be able to relate certain structures to those in the human arm and gain experience of observing and drawing scientific diagrams. You will also improve your dissection skills.

**Aim**

* To examine the muscles, bones and tendons of the chicken wing*.*
* To produce scientific annotated drawings of the dissected chicken wing*.*

**Intended class time**

* 45 minutes

**Equipment**

* Chicken wing
* Tray lined with tissue / dissection board
* Scalpel
* Mounted needle
* Scissors
* Disinfectant in beaker for discarded dissection instruments
* Discard bin for gloves and dissected specimen
* Disposable gloves (non-latex)
* 30 cm ruler

**Procedure**

*Note: Take care when using the sharp dissecting instruments. Non-latex gloves are provided. Please follow the guidelines given to you by your teacher as to how to dispose of the waste from this practical.*

1. Spend some time examining the wing and flex it to identify the two pivots in the structure. Do not make any cuts at this stage.
2. Identify the upper wing, the lower wing and the wing tip – the three sections of the wing. Remember that these correspond, in the human, to the upper arm (shoulder to elbow), the lower arm (elbow to wrist) and the hand respectively.
3. Use your scissors to cut through the skin. Be careful not to damage the underlying musculature by angling the scissors so that they do not cut too deep. Remove the skin from the wing. This can be difficult. Work carefully to preserve the musculature beneath the skin. Note the yellowy fat deposits lying beneath the skin and above the pinkish muscle.
4. Focus on the muscles in the wing. They are pale pink and are bundled together to form identifiable muscle groups that will contract in unison to move the limb.
5. Find the muscles that bend and straighten the wing around the ‘elbow’ joint i.e. the pivot between the upper wing and the lower wing.
6. Tendons are tough, flexible rope-like connective tissues that attach muscles to bones. They are white in colour and stringy or cord-like in appearance. Try to identify the tendons connecting the muscles responsible for bending and straightening the wing to the bones. Pull on the tendons to check they really do move the wing as you would expect.
7. Closely examine the joint between the upper and lower wing. This corresponds to the elbow in humans. Look for the ligaments that stabilise this joint. These are similar in appearance to tendons (white, shiny, stringy) but rather than attaching muscle to bone they attach bone to bone.
8. Make a drawing of the intact musculature and joint with the skin removed. Label bones, tendons, ligaments and muscles. Make measurements and include a scale bar on your drawing. In addition you could take a photo for your records.
9. Carefully cut the tendons attaching the muscles while leaving the ligaments intact. You should now find that the wing cannot be moved by pulling on the muscles but the joint should still remain stabilised by the ligaments.
10. Cut the ligaments at the joint between upper and lower wing. Carefully dislocate the joint and observe the smooth white cartilage covering the adjacent bone surfaces to prevent friction.
11. Cut through one of the muscles transversely and observe the fibrous nature of the cut surface. Contrast this with a longitudinal cut along the line of the muscle fibres.
12. Dispose of the chicken wing and the gloves into the discard bin provided. Place the dissection instruments into the beaker of disinfectant ready for washing. Wash your hands.

**Extension questions**

1. Evaluate the dissection of a chicken wing as a way of learning about the musculoskeletal system of vertebrates.
2. What other structures are necessary, in addition to bones, muscles, tendons, ligaments and cartilage, to allow the wing (or arm) to function correctly? Were any of these visible during dissection?
3. Name the bones and muscles of the human arm and describe the function of each muscle.

**To submit**

For this piece of work to count towards Practical Activity Group 2 of the Practical Endorsement, you should have evidence of annotated drawings of the chicken wing. If you have taken photos, include these. You also need to have considered the above questions as the answers to these questions will aid you in preparation for your written examinations.