

### Activity 3

1) *It is immunization day at the health center. The first patient is a 2-month old well female infant who is scheduled for the following vaccinations: pneumococcal conjugate vaccine (PCV), pentavalent vaccine (Penta) and oral polio vaccine. PCV and Penta are given via intramuscular route. Where are the sites of injection? What muscle is targeted in the injection? Write down its origin, insertion and action. How do you locate this area?*

- Since the patient is only 2 months old, it is preferable to administer vaccines into the lateral side of the thigh in the midportion of the **vastus lateralis muscle** which originates from the greater trochanter and linea aspera of the femur. It inserts into the patella via the quadriceps tendon and then the tibial tuberosity via the patellar ligament. This muscle helps in extending the leg at the knee joint as well as flexing the thighs at the hip joint via the rectus femoris muscle.

2) *The baby's 65-year-old grandfather also came to the center because influenza vaccine is being offered to senior citizens. The flu vaccine is given intramuscularly. Which muscle is the preferred site for IM injection in this case? Write down its origin, insertion and action. How do you locate this area?*

- For adults, the advisable site for administering a vaccine is in the **deltoid muscle**. It is found in the shoulder and it covers the shoulder joint and forms a rounded contour of the shoulder. It originates from the acromial extremity of the clavicle, acromion of the scapula, and spine of the scapula. Deltoids are inserted into the deltoid tuberosity of the humerus. This muscle produces actions such as abducting the lateral fibers arm at the shoulder joint, flexing of the anterior fibers, and rotating the arm medially at the shoulder joint. Also, the posterior fibers extend and laterally rotate the arm at the shoulder joint.

#### Source:

Tortora, G. J., & Derrickson, B. (2017). Tortora's Principles of Anatomy and Physiology. In *John Wiley & Sons, Inc. eBooks*. <https://ci.nii.ac.jp/ncid/BB23861293>