# Activity: Tonus

The muscles of the body are normally in a state of continual and mild contraction. This is known as muscle tone or tonus, and can be detected by feeling a slight rigidity of the muscle. Palpate muscles (feel or massage) in the different regions of your body to detect the presence of tonus.

Tonus is concerned with the maintenance of body posture. While sitting erect, relax the abdominal muscles.

1) What is the effect on posture of voluntarily relaxing these muscles?

Next, observe the position of the mandible when it is allowed to fully relax. Hint: What usually happens to your mouth when you fall asleep while sitting up?

2) When the mandible is fully relaxed, what is its position?

3) Explain how tonus is concerned with the posture of the jaw when one is conscious and alert?

4) When do you think tonus is normally at a minimum?

# Activity: Effect of Fatigue on Muscle Action

Look at the following data collected when a student opened and closed a clothespin with their thumb and index finger for 10 trials, each trial lasting 20 seconds. Each trial was conducted in quick succession without a break or rest.

|  |  |
| --- | --- |
| **TRIAL** | **# closures / 20 sec.** |
| 1 | 42 |
| 2 | 38 |
| 3 | 41 |
| 4 | 36 |
| 5 | 34 |
| 6 | 32 |
| 7 | 31 |
| 8 | 31 |
| 9 | 29 |
| 10 | 28 |

5) What effect did fatigue have on the action of this person’s hand muscles?

# Activity: Muscle Sounds

Some muscle, such as the masseter (cheek) and the biceps bronchii, emit detectable sounds on contraction. These sounds can be heard in a perfectly quiet area (step just outside the room) when a stethoscope is placed over the area of the muscle. The stethoscope can be placed over the side of the face at about the region of the third molar (last tooth). You may also use the biceps of the anterior portion of the upper arm. Place the stethoscope on your upper arm where the muscle forms a bulge as you flex your arm. Each student should attempt this observation, taking note of the frequency of the sounds and whether or not the quality of the sound changes as these muscles are intensely contracted.

6) Describe what it sounds like to you.

7) Did you notice any difference in the sounds made by the cheek muscle as compared to the biceps?

8) Explain why sounds are made when muscles contract.

# Activity: Cool!

Stand in the doorjamb and stand straight. Abduct your arms until they hit each side of the doorjamb. Push with both arms as firmly as you can for 1 minute. Immediately after the time has elapsed, step into the classroom and consciously relax. THIS EXPERIMENT WILL NOT WORK IF YOU CONSCIOUSLY OVERRIDE THE EFFECTS OF THE ARM AT COMPLETE REST!

9) What happened when you stepped into the room and relaxed?

10) Explain why this type of reaction occurred? What caused it?