Semester IV GE (PE)

**POSTURE ATHLETIC CARE AND FIRST AID**

**Unit1.4 How poor posture provokes back pain:** One may not feel any ill-effects after sitting with poor posture for a few hours, but over time the stress that poor posture places on spine can lead to anatomical changes. This in turn can provoke back pain through the constriction of blood vessels and nerves. In addition, the stress from poor posture can lead to back pain by causing problems with muscles, discs, and joints.

**Typical Anatomical Problems that Cause Back Pain:** Many of the intricate structures in the spine can lead to pain, and pain can be concentrated the neck or back, and radiate to the extremities or be referred to other parts of the body. For example:

* The large nerve roots that go to the legs and arms may become irritated or pinched
* The smaller nerves that innervate the spine may be irritated due to inflammation or degeneration
* The large paired back muscles (erector spinae) may be strained due to overuse or an injury
* The bones, ligaments or joints themselves may be injured
* The disc space in between the vertebrae may become painful. Any of the various joint complexes in the spine may degenerate and lead to pain.

**Common Causes of Neck Pain**

The most common cause of neck pain is a muscle strain, in which a muscle is stretched too far and tears. Neck muscle strain is typically caused by poor posture or support, such as sleeping with the neck in awkward positions.

More than 20 muscles are connected in the neck. These muscles work together to help support the head’s upright position and facilitate movements of the head, neck, jaw, upper back, and shoulders. A healthy muscle is comprised of numerous muscle fibers. Within each of these fibers are bundles of myofibrils that contain contractile proteins, which perform the actual contractions for muscle movements. When the muscle overexerts or stretches too far, small tears can form in the muscle, tendon, or connective tissue between the muscle and tendon, which is usually the weakest part. More extensive neck strains involve more inflammation, which leads to more swelling, pain, and a longer recovery period. The strained muscle’s strength while the injury is healing largely depends on how many muscle fibers were torn. Two long neck muscles that are at an increased risk for strain are:

* **Levator scapulae.** This muscle travels down the side of the neck, from top of the cervical spine to the scapula (shoulder blade). The levator scapulae plays a key role in bending and rotating the neck to the side, and these movements can be hindered if the muscle is strained.
* **Trapezius.** This [kite-shaped (trapezoidal) muscle](https://www.spine-health.com/image-gallery/images/trapezius-muscle-and-shoulders) runs from the base of the skull and goes more than halfway down the back, as well as out to the shoulders. The upper trapezius muscle helps facilitate many movements, including head tilts and neck extension (looking up).

Other neck muscles can also become strained, and it is possible for more than one neck muscle to become painful at the same time.

**Step-by-Step Guide for the Levator Scapulae Stretch: Here** is a version of the levator scapulae stretch that can be performed while seated:

1. Sit up straight with both hands at the sides.
2. Raise the right arm forwards and reach over the back with the hand grasping the right shoulder blade and applying downward pressure. (This step rotates the shoulder blade downward, which helps lengthen the levator scapulae muscle even more before it is stretched. If raising the elbow above the shoulder is too complicated at first, this step can be skipped.)
3. While keeping everything else still, rotate the head to the left about 45 degrees (which is about halfway toward the shoulder).
4. Tilt the chin downward until a good stretch is felt on the back right side of the neck.
5. To increase the stretch further, the left hand can be brought up to the back of the head to gently pull down a little more.
6. Hold for 30 to 60 seconds, or as tolerated.
7. Repeat on other side.