Cervigard Forward Head Posture Neck Collar

Cervigard FHP Neck Pain Collar

Forward Head Posture also known as “Text Neck” and FHP is becoming an epidemic problem that causes neck pain, cervical arthritis, disc herniations, headaches, arm and shoulder pain, lower lumbar disc and joint pathology, and upper extremity radiculitis. The vertebral artery is also compromised by loss of cervical lordosis which leads to decreased arterial homodynamics. The cervical lordosis or normal neck curve is adversely affected when the human head projects forward of the shoulders.

According to research published by Kenneth Hansraj M.D., in the National Library of Medicine and Surgical Technology International, the human head weighs approximately 12 pounds. However, when the head and the neck projects forward and bends downward, the relative head weight can increase incrementally up to 60 pounds. This is like having a 60 pound child on your neck and shoulders for several hours a day! Over time this causes abnormal chronic stretching of muscles, ligaments, and discs resulting in plastic deformations and chronic neck pain as well as the aforementioned pathologies.

According to Dr. Hansraj, billions of smart phone users spend an average of 2 to 4 hours per day with their heads forward reading emails, text messages, and using lap tops at work. This physical strain on the neck is cumulative and can lead to joint pathology that may eventually require surgical intervention. “More than thirty percent of people suffer from neck pain each year” (US News World Report).

The Cervical Lordotic Curve

The cervical lordosis works in tandem with the thoracic and lumbar curves to form a support and energy modulating system in the human frame. It is the head and cervical portion of the spinal column that is the subject of this paper as it relates to the Cervigard neck protection device. The normal cervical lordotic curve can be closely modeled with a circle described as a smooth arc of circular proportions from the atlas vertebra to the seventh cervical vertebra. A normal range of 56-69 degrees was determined by use of the Dalmas Index. This cervical lordotic curve will have direct effects on the entire spine when its shape is permanently altered by forces that straighten out the curve. One such force is chronic forward head posture. This loss of proper curvature seen with Forward Head Posture (FHP) leads to long term muscle strain, disc herniations, arthritis, and pinched nerves. With the mass of population using electronic
devices that induce the FHP condition the long term effect is to cause a pandemic increase of neck pain. Neck pain is associated with permanent joint damage to the cervical spine as well as back pain, fibromyalgia, headaches and possibly many other conditions.

The cervical vertebrae are designed by nature to be in a forward arc. When looking at the cervical lordosis the anterior vertebral bodies experience a tension force and the posterior vertebral bodies experience a compressive body force when compared to the ventral portion. Viewing the trabecular bone formation of the C3 through C7 segments there is an increased density of the trabecular pattern posteriorly, which would better support the compressive loading at a concave portion of natural lordosis (Figure 2). The entire vertebral body has vertical columns but the posterior areas have additional oblique columns that reveal a sturdier support structure. This posterior portion needs to withstand the increase compressive loading on the concave side of the lordotic arc. When the neck is straightened, the compressive loading transfers to the anterior portion of the body of the vertebra where the bone is less dense. If this becomes a chronic posture, bone and ligament deformation remodeling will occur over time to produce the pain described in this document.

FHP is sometimes referred to as Text Neck. Text neck occurs when looking down at an electronic device like a computer, smart phone, tablet, or smart watch. This posture can be mitigated with the use of the Cervigard Neck Protection Device.

Clinical Usage

The chronic breakdown of the cervical curve will result in segmental dysfunction of one or more of the vertebral units. Sometimes this is so severe that clinical intervention is needed. One form of treatment is to repair the proper alignment. Reparation of the cervical lordosis can be observed by the clinician utilizing the features of this neck collar. The FHP displacement can be corrected by adjusting the head position so that the ears are more aligned over the shoulders.
This will reduce the loads on the anterior portion of the vertebrae and upper thoracic spine. Secondly, after later cervical x-rays are taken to identify misaligned vertebral segments, fulcrum supports located at the posterior portion of the collar can be used to induce the forward translation force to “push” the vertebra back into a more normal cervical lordosis (Figure 3) the fulcrum at the rear of the collar positioned at the identified cervical vertebra in this example.

The patient will wear this device 20 minutes or more per day to create repositioning of misaligned vertebra and remodeling of soft tissues over time to a more normal alignment. This process is similar to the utilization of dental braces to realign teeth. The big difference of course is it requires much less time and cost.

Solutions to FHP/Text Neck Epidemic Pathologies

Once the chronic symptoms of FHP/Text Neck have developed the condition generally described as neck pain needs to be addressed. Aside from pain medication, a new pain and pathology mitigation device has been developed to simultaneously correct Forward Head Posture and improve cervical lordosis.

The device is a neck collar that is worn by the patient or individual for a minimum of 20 minutes per day to hours/day if desired because the collar has a user-controlled setting for comfort. Viewing a diagram of the collar you place in around your neck and shoulders, connect the front cheek pads and chin support. Then adjust the two knobs/track handle rearward until your head is approximately over your shoulders. This can be done incrementally over several weeks to accommodate severe pain starting points while moving the head rearward gradually to a more normal position. Older patients with arthritis or patients with joint and disc pathology may want this more gradual approach. These patients will be guided by a physician, chiropractor, or physical therapist.

The utility of the new collar is enormous. The range of users can be from children who want to prevent neck pain to adults experiencing neck pain and want relief and pain prevention by wearing the collar while viewing or working on their electronic devices. Physicians, chiropractors, and physical therapists can utilize it when treating FHP/Text Neck, whiplash, and sports injuries. Post-surgical application would ensure proper head position which would avoid adverse unnatural FHP weight-bearing loads on the vertebra and avoid impairment of vertebral artery hemodynamics caused by arterial stretching associated with loss of cervical lordosis.
FHP Therapy™ Collar

1 – The chin and cheek pad assembly is adjustable to the user’s face size and holds the supported mandible at a level angle so that the user does not put their head in a flexion position (looking downward). This, together with the cheek pad assembly, will hold the head level so that next part, the track assembly can translate the now stabilized head/neck rearward. The dual cheek pad assembly acts to push the head rearward over the track.

2 – Dual posts connected to the dual-track assembly. The posts connect the aforementioned cheek pad and mandible support to the dual tracks.

3 – The dual tracks and large knobs are the mechanism to collectively translate the head rearward with the goal of realigning the head over the shoulders. Head back chest out appearance is what it is trying to achieve.

4 – Occipital support holds the head level so the head does not extend or flex. The results in keeping the head and neck stable while moving both structures simultaneously rearward over the shoulders.

5 – The dual position fulcrum support at the rear contacts the neck to support the normal cervical lordosis (neck curve).

6 – Thumb screw advances the fulcrum forward and backward to ideally support the normal neck curve.
FHP Therapy™ Collar Features

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Works Cited


4. Dr. Mehmet Dinis Bulnt, Medical Science Monitor 2/15/16 “The Effect of Adding Forward Head Posture Corrective Exercises in the Management of Lumbosacral Radiculopathy: A Randomized Controlled Study by Ibrahim M. Moustafa, PT, PHD, Aliaa A, Diab, PT, PhD


