THE SCIENCE BEHIND SPINAL WEIGHTS

Loss of the curve in your neck will cause the spine below it to buckle. This is because a curved neck is better able to absorb the force & stress of gravity (think of how your knees flex when you land after jumping). A straight neck will transmit forces straight down the spine.

Traditional medical science views the spine as a bridge connecting the head to the pelvis. If a bridge begins to collapse, the correct approach is to try to hold it together by fusing its structure. Chiropractors, however, view the spine as an engine. If the engine in your car starts to run funny, and you fuse the cylinders together, this might not solve the problem!

Motion is essential for proper functioning of the spine and the associated soft tissue components. One easy method of improving the curve in your neck is through the application of spinal weights, prescribed by a knowledgeable chiropractor

Does this surprise you? Have a friend hold your arms at your side while you try to raise them up; do this for a slow count of ten. Once your friend takes away the resistance, your arms will seem to float up on their own! Muscles have a memory, and adapt very quickly to stressors & additional loads.

Simply wearing a headweight for 20 minutes, twice a day, can strengthen the muscles responsible for holding the curve in your neck, and keep them working to pull that curve back long after you take it off.

Our physical environment is gravity. Humans adapt in time and need to their environment under the direction and control of the nervous system. Spinal weights are designed to utilize the neural righting mechanism in response to gravity in order to re-establish the proper agonist/antagonist relationship between the flexors and extensors.

To begin to correct forward head posture, an appropriate amount of weight is placed on the front of the patient's forehead, above the supraorbital ridge. With the head weight in place, the center of mass of the skull is shifted anteriorly. When the subject stands upright to gravity, the righting mechanism compensates in a predictable manner proportional to the new location of the center mass of the skull.

In response, the postural righting mechanism causes the cervical extensors to re-establish the center mass of the skull over the expected intersection of the spine, that being the anterior quarter of the C4-C5 interspace restoring cervical/skull form and function.

Upon contraction of the cervical extensors, the head and neck are pulled into extension, thus unleveling the head in relation to gravity, which results in activation of the ocular and other righting mechanisms.

The ocular mechanism is then satisfied by contraction of he cervical flexors, which pulls the skull inferior and posterior into flexion on atlas. Once the righting mechanisms have been satisfied, and the center mass of skull is re-oriented correctly above the cervical spine. The new stressed position results in a proportional adaptation of all the bones, muscles, and ligaments involved.

In "**Functional Re-Training and Spinal Support",** Kim Christensen, DC, DACRB, CCSP (Dynamic Chiropractic, Vol. 18, #15, July 5, 2000) discusses Specific Adaptation of Imposed Demands – SAID. He states, "The human body will predictably change in response to the demands placed on it. The spine functions differently when it is not weight bearing. The way to return the spine to normal function is to do exercises that mimic as closely as possible the real conditions under which the spine must function with daily activity."

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Individuals were x-rayed in a cervical, neutral, lateral position. They were then placed on the Active Rehabilitation Chair for 5 minutes with 3 to 5 pounds of anterior head weight. After this exercise, another cervical, neutral, lateral x-ray was taken with the anterior head weight in position.

A comparison of the measured results from the two films was made considering the cervical lordosis and FHP. Average improvements in the cervical lordosis of 34% ($p < .0001$) and in FHP 14mm ($p < .0001$) were noted after the head weighting protocol was preformed with five pounds. Improvement of cervical lordosis of 31% ($p < .001$) and in FHP 18mm ($p < .0001$) was recorded in a group using three pounds of weight.

- None of the individuals were adjusted chiropractically.
- Of the 131 individuals, one outcome was worse because of too much weight relative to the small structure of the individual.
- Over 99% improved with the anterior head weight relative to the loss of the cervical lordotic curve and forward head posture.
- The average improvement in the cervical lordosis was 33%.
- The average reduction of forward head posture was .62 inches or 21 mm.
- The hard palette line did not significantly change between the before and after x-rays, verifying proper patient positioning.
- The kyphotic and kyphotic S-curves responded better than the hypolordotic and lordotic S-curves.