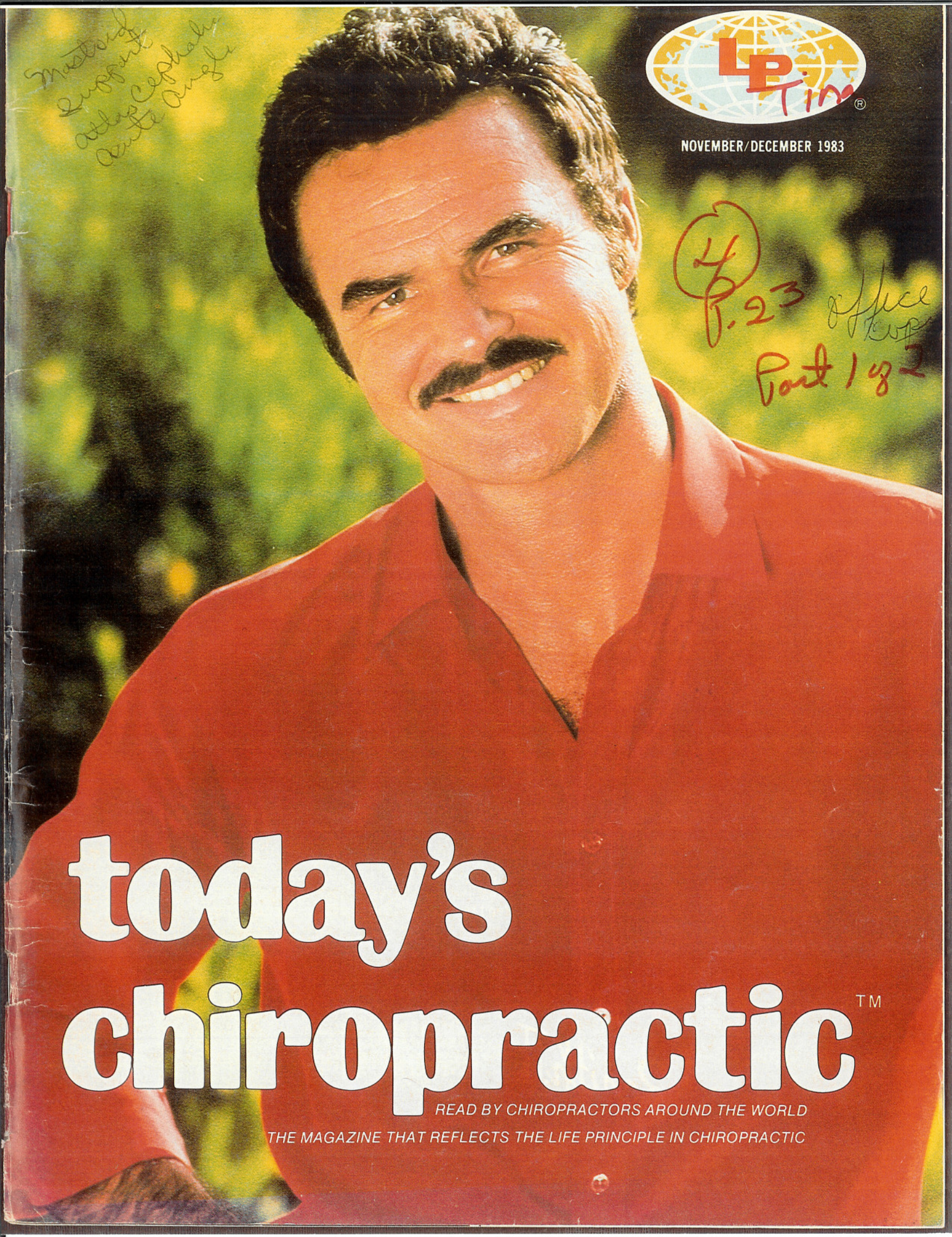

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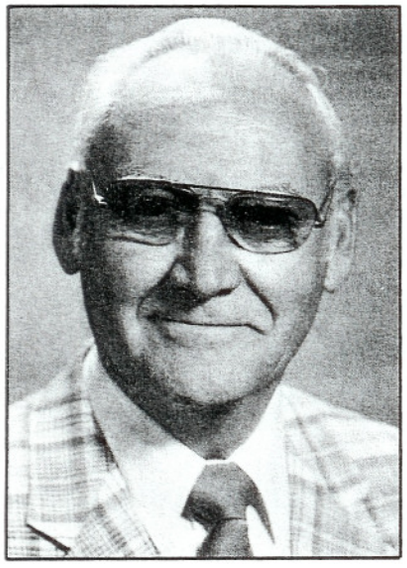

Atlas Orthogonal Mastoid Support

Atlas-Cephalic Acute Angle

Part One of Two

by Roy W. Sweat, D.C.

About the Author: Dr. Roy W. Sweat's practice is in Atlanta, Georgia. He is a graduate of Palmer College. In 1952, he began a course of study specializing in the upper cervical occipital-atlanto-axial complex under Dr. John F. Grostic. Dr. Grostic chose him as an instructor at his seminars. Sweat completed a three-year program in chiropractic orthopedics from the National College. He is an associate professor at Life College.

Dr. Sweat designed the cervical analysis instrument. In 1981 he created the program of chiropractic Atlas Orthogonality and wrote a series of five books. Dr. Sweat has designed a chiropractic adjusting instrument and also a series of x-ray analysis instruments and attachments for the x-ray machines and the orthogonal adjusting tables.

Dr. C.H. Suh, Ph.D., of the University of Colorado has again chosen Dr. Sweat to speak at the Annual Bio Mechanics Conference (14th) on the spine. Dr. Sweat's orthogonal programs have also been approved by the CCE(Canada) through the Canadian Memorial Chiropractic College.

The center skull line is measured from vertical and, in relationship to, the atlas plane line. When the atlas moves laterally on the occipital condyles, the center skull line and the atlas plane line will create an acute angle on the side of laterality. We always adjust on the side of the acute angle to move the atlas around the occipital condyle to return it to it's neutral position under the foraman magnum.

All of the line of drive factors are designed to return the cranium to vertical, the atlas plane line to horizontal, and the cervical spine to vertical. It is possible to adjust low plane lines on the opposite side of the acute angle and return the atlas plane line to neutral and the cervical spine to vertical, but it will not remove the acute angle between the occipital condyle and the atlas.

Positive Mastoid Support

The mastoid is circular, shaped similar to a spoon, and can vary from ten degrees from vertical to sixty degrees. The mastoid is our most direct support for the occipital condyles. The inferior tip of the mastoid must be supported to prevent the head from moving when the adjustment is given (Fig. 1).

When the mastoid is not supported and the support is under the center of the head three to four inches above the occipital condyle and the atlas, this means we have an anchored point at the shoulders and the middle of the head. This creates a pinching or closing effect on the occipital condyles and the superior facets of the atlas. This closes the articulation that we are attempting to move within their articular beds.

When the shoulder and the middle of the head are supported and the mastoid is unsupported, this creates a floating effect between the occipital condyles and the atlas facets. When driving a nail in the center of a board with the supports on each end of the board, as the hammer hits the nail the board will deflect down and receives much of the energy. This causes a kinetic reaction which will cause the board to spring back upward.

As we move the support as close to the nail as possible, the board becomes more static in it's reaction, causing little or no movement, thus, all the energy is then received by the nail (Fig. 2). This same principle holds true for the occipital condyles and the atlas. When the mastoid does not have a positive support, there is an excess of movement in the sub-occipital area which will put more stress and strain on the sub-occipital muscles. There is a deflection action which creates an excessive amount of movement in the entire cranial-cervical area.

As stated in my previous article, most authorities agree that there is an average of five degrees of lateral movement between the occipital condyle and the superior atlas facets. Ninety percent of the condylar circles are three to four inches in diameter. With a three-inch diameter, a 1½-inch radius and five degree movement on

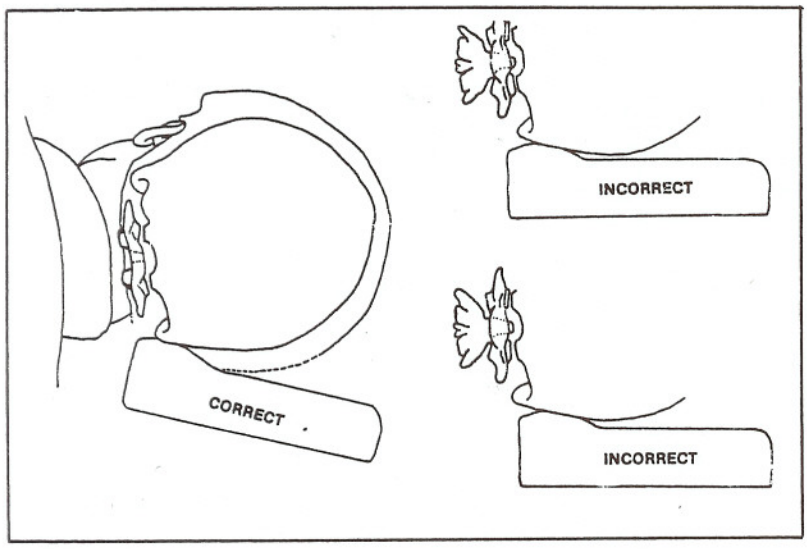

Fig. 1

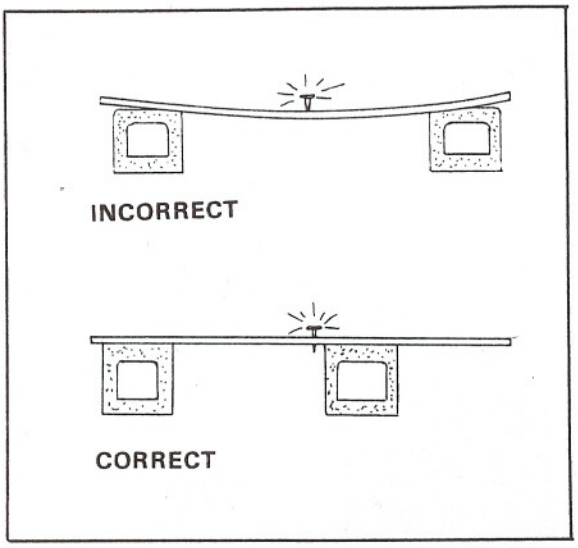

Fig. 2

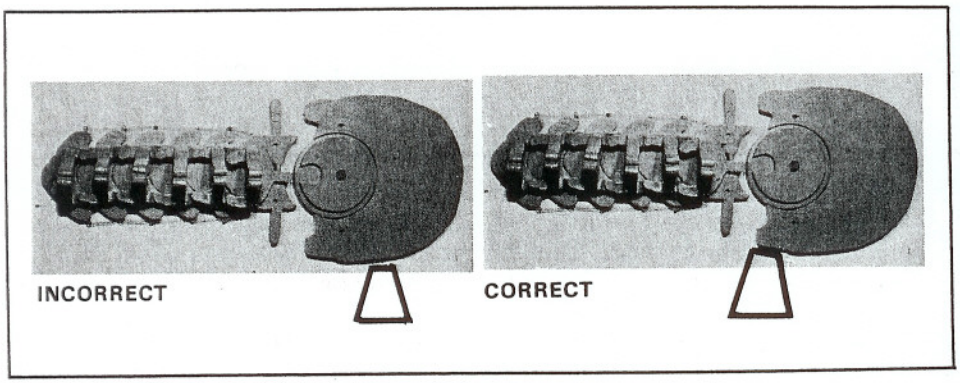

Fig. 3

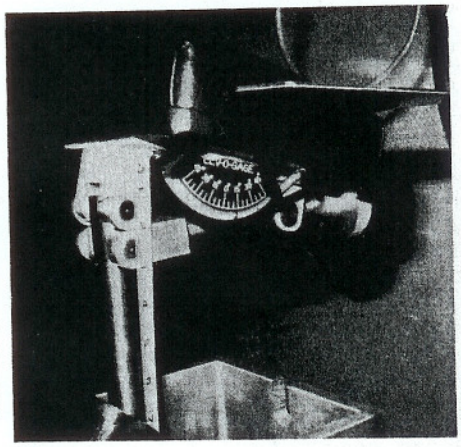

Fig. 4

a 1½-inch radius will equal ⅛-inch lineal movement. So, the maximum movement between the occipital condyles and the superior atlas facet will average ⅛-inch.

Rocking The Head

In the cervical analysis, the cranium is related to having moved from vertical, which means that in the standing position the cranium has moved from the vertical position and is leaning to the right or left toward the feet. When the patient is placed on a side posture table, the head has moved from vertical and is leaning toward the feet. When the adjustment is hard or forceful, or with no mastoid support, and the head rocks more toward the feet during the adjustment the head is then being taken farther from vertical which will increase its disrelationship to the atlas, or will remain in its disrelationship with the atlas as they both rock toward the feet together (Fig. 3).

Sometimes this will lower atlas plane lines and reduce opposite lower angles, but will not remove or reduce the acute angle between the cranium and the atlas. Thus, when adjusting with the cervical spine angle on the same side as the upper cephalic angle, it can increase the lower angle, making it move more from vertical. The head should always remain stationary as the atlas moves around the occipital condyles and, in some subluxations when the lower angle is on the same side as the laterality, the headpiece is set at a steeper angle with the tip of the mastoid still being supported but with less of the mastoid being supported so that the weight of the head, which is nine to fourteen pounds, creates a gravitational pull toward the floor to help prevent the head from rocking downward and giving the mechanical advantage of the condyles moving upward as the atlas moves down and around the condyle.

The occipital condyles are used as a fulcrum to move the cervical spine. If the mastoid moves, the head moves and this moves the occipital condyles and you lose the mechanical advantage of fulcrums and levers.

Table Support Directly Under The Mastoid

The old Grostic tables had a scissors-type mechanism to raise and lower the table. Raising the table, they were quite satisfactory, but, when lowering the table, the scissors would remain up and the doctor had to press his hand down on the mastoid support before the adjustment to make sure there was no loose movement in the headpiece. The mastoid support was distended and acted as a cantilever with the support not directly under the mastoid itself. Dr. Hugh Crowe designed our headpiece by moving the support rod directly under the mastoid to make the support firmer and without any loose movement (Fig. 4).

In his article titled "Head Pieces for Side-Posture Adjusting", Dr. Hugh L. Crowe states. . ."We found that with a proper mastoid support, a more shallow adjustment would reduce the subluxation. It was also found that some of the mastoid supports being installed on new tables were too soft and too rounded. It was then that, in cooperation with Dr. Roy Sweat, we started to replace some of these defective supports trying to improve on the design of the old mastoid support." ■