Do Cranial Bones Move?

by Alice D. Lindsey, MS, LMT, CST

Your cranial bones are fused. During childhood they grow to fill the fontanelles and become a hollow globe after about the age of 12 with solid bone at the sutures. Did you learn that in biology or anatomy class? If you did, you're not alone. In fact, most MDs and other medical professionals today are taught that. Even many osteopaths and chiropractors learn that the cranial bones are fused.

However, as an Upledger Institute-trained CranioSacral therapist, I have felt these bones move, and I've seen many clients with head trauma who have experienced dramatic improvements after cranial bone restrictions were released and more normal physiologic movement was restored. Doctors often want to know what happened. I start by citing some of the objective evidence that cranial bones move.

First, let's look at the bones themselves. The human skeleton is an amazing piece of engineering. Every bone has features that support the attachment of muscles and ligaments, and most of them have features that allow them to articulate with other bones. (The hyoid bone is an exception; it attaches to muscles, but not to other bones.) It's possible to guess how two bones articulate by observing their shapes.

For example, the knee joint is designed specifically to operate like a door hinge with movement primarily in one plane. The ball-and-socket mechanism at the shoulder is apparent from shape of the head of the humerus and the glenoid fossa of the scapula, features which allow for rotation.

Another example of form that predicts function is the structure of the occiput-C1-C2 articulations. The occipital condyles and the superior facets of the C1 predict a rocking motion, and the inferior facets of C1 and the superior facets of C2 predict a rotation. The articulations of these three bones clearly allow for normal head movements.

Now let's look at just one cranial bone, the temporal bone. It has a beveled edge that meets the beveled edge of the parietal bone that is superior to it. Dr. William Sutherland, founder of cranial osteopathy, noticed that the bone was shaped like the gill of a fish, and he hypothesized that the temporal bones move in a manner similar to the gills of fishes. That is exactly the motion that CranioSacral therapists feel when this bone is moving freely.

Next, let's look at the cranial sutures. In the 1970s, Dr. John E. Upledger began to put together his theories and a system of CranioSacral therapy techniques that are now taught around the world. One of his colleagues offered to study sutural material. For the first time, it was documented that sutural tissue contains nerves and blood vessels. In other words, the sutures do not consist of solid bone.

Finally, let's look at one of the things that Dr. Sutherland noticed. In medical college anatomy labs, students often used disarticulated skulls, in which the cranial bones have been separated and individually mounted on wires in an "exploded" view. Dr. Sutherland learned that the way these disarticulated skulls were created was that a skull was filed with kidney beans and soaked overnight. The expansion of the beans caused the bones to separate. He wondered how the bones could separate if they were solidly fused.

For all these reasons - the shape of the bones, the sutural material, and the fact that a skull can be disarticulated - we can say that since form follows function, then cranial bones do indeed move.

References:


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