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REIZLAFF, Ernest, John UPLEDGER\*, Fred MITCHELL, JR.\*, and Jane WALSH\*. Department of Biomechanics, Michigan State University, East Lansing, Michigan. *Aging of Cranial Sutures in Humans.*

Gross and microscopic examination of the parieto-parietal and parieto-temporal cranial sutures obtained by autopsy from 17 human cadavers with age range of 7 to 78 years shows that these sutures remain as clearly identifiable structures even in the oldest samples. In no instance was there evidence of sutural obliteration by ossification. There are morphological changes in both the cranial bones and sutures which can be correlated with the aging process. The cranial bones in young humans appear as flat plates consisting of external cortical bone with a limited central diploe. As the human cranium ages the cavities in the diploe increase in size and number; the cortical bone plates decrease in thickness.

Myeloid activity is evident in many of the cavities. The ends of the approximated bones are bound together by the collagenous, elastic and reticular connective tissues which form the sutural ligament. This is the basic sutural structure at all ages. There appears to be a reduction in the total number of collagenous fiber bundles as a function of the aging process. In the mid-age and older age specimens the approximated edges of the cranial bones become irregular due to the proliferation (and possible resorption) of bony spines which are seen to extend into the suture. Nerve fibers are present in all specimens examined. These fibers accompany the collagenous bundles throughout the suture and into the cranial bones along with the Sharpey's fibers. Also there are nerve fibers which course along with the blood vessels in the suture. The structure of the cranial suture is such that movement of the cranial bones is possible at all ages as the result of normal physiological processes such as respiration, cardiac activity and alterations in cerebrospinal fluid pressure. It is probable that the nerve fibers and their receptors are responsible for functional alterations controlled by cranial bone movement. Supported in part by a grant from the Cranial Academy.