

The Plastinating Process and the Educational Advantages of Long Term Preservation of Prosections

ROLANDO T. LAZARO; D.A. UMPHRED

*1335 N Hunter
Stockton, CA 95202
United States Of America*

PURPOSE: Faculty try to preserve prosections that are either exceptional representations of functional anatomy/ neuroanatomy or are difficult for students to conceptualize until a prosection is presented. Long term preservation of unique and outstanding anatomical and neuroanatomical prosections is limited in many universities. **RELEVANCE:** Development and implementation of a mechanism for preservation of prosections was identified. The outcome of the project was the preservation of multiple prosections which faculty can utilize as adjuncts in improving and enhancing student learning. **DESCRIPTION:** The S-10 Standard Procedure for plastinating was selected because it employed silicone for impregnation of the formaldehyde-fixed specimens, making them resilient, flexible, and opaque and could be used for both large and small prosections. Materials and equipment were identified including specific freezer with remote compressor, stainless steel vacuum chamber, valve-system network, vacuum gauges, manometer and the specific chemicals. Once construction was completed, the process of plastinating was begun. There were six essential steps involved in the S-10 procedure: fixation, flushing, dehydration, forced impregnation, and gas curing. The entire process takes between 6 weeks and 4 months depending upon the size of the prosection. **RESULTS:** the process of S-10 plastination for tissue preservation in which tissue fluid was replaced with a curable polymer has now provided for long-term teaching tools for faculty and students. These plastinated materials are safe to handle, representatives of the exact human prosection selected, durable, transportable and do not degrade with exposure to air. A plastinated prosection of the intact peripheral and central nervous system, and plastinated slices of the brain are now available to be used in the academic setting. This specific prosection allows students to view and handle the entire nervous system three-dimensionally. **CONCLUSION:** The results of this process have far reaching implications for faculty and students within all academic programs in physical therapy. Plastination of the central and peripheral nervous systems is an innovative, effective and cost-efficient method of preserving prosections, and will assist the physical therapy educator in enhancing the educational experiences of the students.