

**DEHYDRATION IN EMBALMING: CAUSES, EFFECTS AND SOLUTIONS****Part 2**

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A superior alternative is to embalm sufficiently without overembalming using less astringent, less harsh and more controlled and buffered arterial injection chemicals. Glutaraldehyde-based fluids and glutaraldehyde/formaldehyde mix fluids meet this criteria by maximizing embalming and deep tissue saturation through a slower, more controlled reaction while not exerting a significant dehydration effect. If extra strength solutions are needed, then glutaraldehyde additives should be used to increase preservative action and increase net embalming. If glutaraldehyde is not available as a preservative arterial chemical, then at least add significant amounts of a co-injectant buffering-control agent so as to moderate the excess reaction of formaldehyde.

Make certain that arterial injections contain humectants and moisturizing modifiers to help minimize dehydration and increase moisture retention in sensitive skin tissue areas. The maximally effective humectants are aloe-based additives that are stabilized and buffered. Aloe exerts an enormous humectifying action on embalmed tissues through its ability to carry a high content of water molecules in a relatively small molecular package. The result is a maximizing of moisturizing to embalmed tissues.

Lanolin-based fluids are also effective along with older style humectant additives that were based on cellulose-type hydrated polymers. With the use of aloe, however, the chances of capillary clogging and other unwanted reactions are virtually eliminated due to the more effective penetration and moisture carrying capability of the smaller aloe molecular aggregate coupled with its increased solubility attributes. Any moisturizing additive should always be added at the beginning of injection rather than used only at the end of injection during the last gallon or so. This technique will result in more net moisture being retained in the tissues.

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Cavity treatment can also contribute to unwanted dehydration effects. The use of harsh, high index formaldehyde-based cavity chemicals in larger quantities and injected into the higher areas of the chest and neck area will result in unwanted dehydration and browning of sensitive lip and facial tissues. So called drying cavity chemicals that are formaldehyde based and high in alcohol content particularly cause this type of dehydration. Unfortunately, no significant increase in embalming is noted by these fluids but they do live up to their reputation as a dehydrating agent. The trade-offs in the use of these type fluids is great —increased alcohol and fuming action does not increase embalming but does cause a dehydration effect on close proximity sensitive tissues and safety and exposure is compromised by the increased exposure to formaldehyde vapors.

A superior alternative is a multi-based liquid-type low-fuming cavity chemical that contains a synergistic mix of preservatives such as glutaraldehyde and other aldehydes with phenol or phenolics that exert a maximum embalming effect while minimizing the exposure hazard and not significantly contributing to dehydrative action if used properly.

**POST-EMBALMING:** This is an often over-looked area of dehydration control that can have serious impact on the presentability and cosmetic appearance of the remains. Failure to practice sufficient preventative and curative moisturizing after embalming and prior to interment or final disposition can result in unacceptability of the embalmed body.

Always use a spray emollient or a high grade aloe/water based massage cream on viewable areas of the body after embalming and prior to dressing/cosmetizing. A spray moisturizer is superior to massage creams (especially old style lanolin type) as it will not clog pores, does not need to be removed prior to cosmetizing and is easier to apply lightly. Avoid Vaseline or other petroleum based products — they are dehydrative over time due to the volatile carriers in them and are only a temporary moisture barrier. If any areas need special attention, concentrated packs of aloe humectant or other additive should be used.

Always cover the body with a plastic sheet during the interim between embalming and dressing. This will allow no air currents to accelerate dehydration of the skin surfaces and act as a barrier to natural evaporative action. Do not use cotton or other absorptive type sheet — this will wick moisture from the skin surfaces and hasten dehydration.

For cosmetizing, utilize aloe-based water soluble type cosmetics to maximize moisturizing, a lifelike look and suppleness to the tissues. Avoid the use of old style oil-based grease paint theatrical type make-ups. These are less lifelike and require harsh dehydrating solvents for mixing, softening, removal and application. Also, they are much more difficult to clean up if spilled.

If a topical gel or pack was used on sensitive or viewable tissue areas, remove and clean the area, then reapply a moisturizing spray or concentrated humectant topically, prior to using humectant cosmetics.

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Attempt to control dehydration prior to visitation and between visitation times by the use of plastic covering for the face and hands. This can be a significant environmental cause of post-embalming dehydration prior to burial or final disposition. Monitor your heating and air conditioning system and make certain that air flow patterns are not pointed directly at the remains.

In cases of delayed interment, cover critical areas with plastic and close but do not seal the casket and check periodically for signs of dehydration. If these are noted, reapply humectant based products to minimize and slow the dehydration process.

**CONCLUSION:** Extensive field research by the Champion Company has verified that following the above protocols and recommendations will reduce or virtually eliminate unwanted dehydration effects in over 75% of all embalmed cases. Other than having no control over the pre-embalming condition of the body — most dehydration is embalming procedure induced and eminently controllable by the embalming professional.

It appears that fully 2/3 to 3/4 of all dehydration problems encountered in the field are created or exacerbated by the poor choice of embalming chemicals and accessory products and the quantities of these that are used coupled with the failure to utilize preventive techniques by embalmers.

The avoidance of dehydration causing chemicals and techniques with the implementation of proven superior methodologies and the use of products that enhance hydration effects or minimize dehydration effects of embalming will significantly increase the acceptability of the average embalmed body.

These techniques, procedures and chemicals will allow the embalmer to consistently preserve, sanitize and restore bodies to a high level of acceptable lifelikeness and viewability.

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