

**Introduction**

Therapy wax is the most vigorous modality for applying heat to distal extremities. The conformal wax coating serves as an ideal heat transfer agent to elevate tissue temperature in small joints. This superficial heat is used to promote relaxation, relieve pain, increase blood flow, facilitate tissue healing and prepare stiff joints and muscles for exercise.

**Lower Thermal Conductivity Allows Higher Therapy Temperature**

To demonstrate why paraffin is more comfortable at higher temperatures than water, feel the steel railing on a chair and compare it with a cloth or plastic seat. Which is colder? The steel feels colder; however, the steel and cloth are the same temperature (room temperature). The difference you feel is thermal conductivity. Similarly, the lower thermal conductivity of paraffin allows higher therapy temperatures than water or Fluidotherapy.

**Therapy Temperature from 122° F to 125° F**

Therapy temperature is determined by the melting point of the paraffin or the freezing point as it solidifies against the skin releasing its latent heat. The temperature of the liquid paraffin is controlled at least 3° F above the melting point to maintain its liquid state.

**Use Only Medical Grade Paraffin**

Paraffin waxes have various melting points. Medical grade paraffin is a special low-melt-point wax unlike the paraffin used for canning or candle making. The melting point of paraffin from the grocery store will be over 130° F and can be as high as 150° F. Mineral oil, similar to the oil used in hand lotion, is added to soften the paraffin so the wax glove will remove easily after treatment. The amount of oil necessary to soften the wax is approximately ½-ounce per pound of paraffin. Most manufacturers offer pre-blended wax with the correct amount of oil added at no extra cost. We recommend medical grade wax without wintergreen fragrance since some patients have an allergic reaction this additive.

**Moisturizes Skin**

Medical grade paraffin is the most efficient occludent and emollient for protecting dry skin and allowing it to hydrate again. This counteracts the tendency of heat to dry skin. Oils left on the skin following treatment can be rubbed in as hand lotion.

**Clinical Use**

When using paraffin baths in the clinic, discard the wax glove after removal from the patient. This procedure will result in less wax consumption overall because the majority of the contamination is discarded with the wax glove. Less frequent cleaning and replacement of the wax supply will be required. Over the years, tests have proven that no bacteriologic activity occurs in the paraffin tank. Also the paraffin wax itself stays clean. Perspiration, dirt, hair, dry skin, and other contaminants will settle to the bottom of the tank keeping the paraffin clean.

**Preparation for Treatment**

Explain to your patient that the liquid paraffin will feel very warm and assure them it will never burn. With the hand relaxed and fingers slightly separated, dip into the liquid wax above the wrist. Remove the hand and allow the wax surface to solidify and lose its glossy appearance (about five seconds.) If a crack develops in the wax glove allowing liquid wax to flow into the crack, it will feel much hotter than the liquid wax felt on the first dip. The reason it feels more extreme is the application of heat heightens the patient's sensitivity to heat. Likewise, if patients wash their hands with warm water prior to treatment, the paraffin heat will feel more extreme. To reduce this sensitivity, have patients rinse their hands in cool water.

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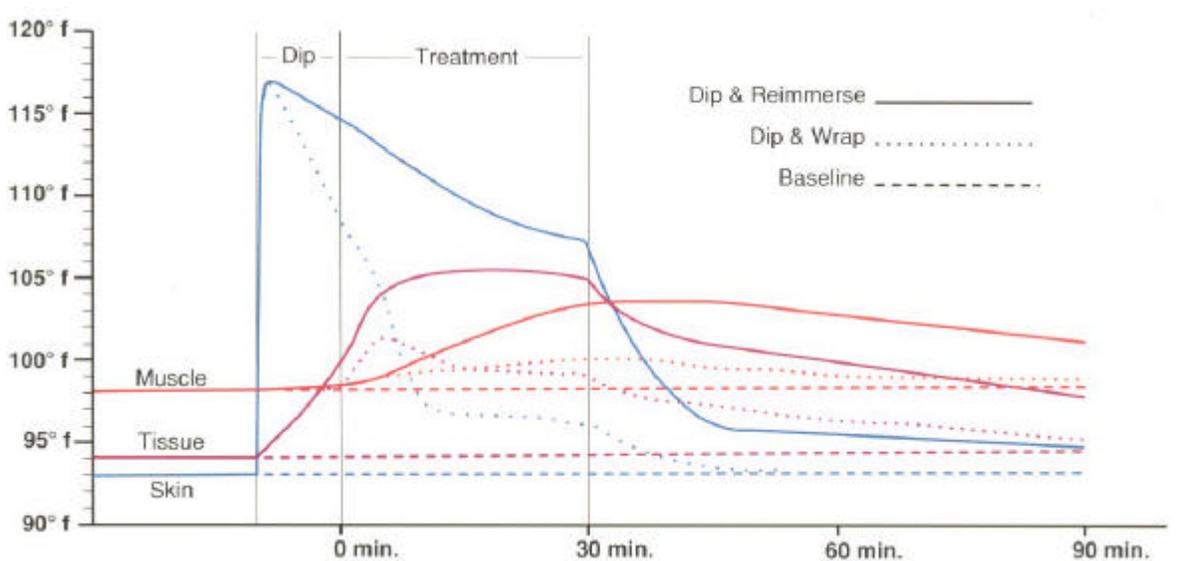
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## Dip and Reimmerse Technique

The dip and reimmerse technique provides distal extremities with the most vigorous superficial heat (see chart below). Dip the extremity six times. After forming the glove, re-immerses in the liquid paraffin continuously during the treatment so heat continues to flow from the liquid wax through the glove. Typical treatment time is 20 minutes. Five minutes prior to ending the treatment, lift the extremity from the liquid paraffin to let the glove solidify before removal.

## Dip and Wrap Technique

The dip and wrap technique is popular because it allows the patient to be in a less dependent position away from the paraffin bath. Dip at least 10 times to build a thick wax glove. The thickness of this glove determines the amount of heat that will be available. After the last dip, insert the paraffin-covered extremity into a plastic bag and wrap it with a towel to help retain heat. Insulated mitts with liners are also available for improved heat retention. Some therapists place a hot pack around the towel or mitt to simulate the dip and re-immerses technique.



Adapted from Abramson, Effect of Paraffin Bath on Local Tissue Temperatures, *Archives of Physical Medicine*, 2/64, 87-94

## Cleaning

The simplest way to clean contamination from the bottom of the paraffin bath tank is to unplug it, remove the lid and allow the wax to harden. The harder the wax, the easier it is to remove. Spread a towel on the floor, invert the paraffin bath and tap it against the floor until the solid wax block releases. Scrape the contamination from the solid wax block and clean the paraffin tank with Lysol Tub and Tile Cleaner. Return the cleaned wax block to the tank and re-melt.

## Home Use

Patients can be instructed in the use of paraffin for home allowing carry-over from the hospital or clinic setting. Before paraffin baths were commercially available for home use, many medical professionals recommended double boilers, roaster ovens, and crock-pots to their patients as devices for paraffin therapy. For economic reasons, some medical professionals still recommend these methods. This is false economy and can be very dangerous. Because kitchen appliances and consumer products are not manufactured under health care standards, they have the potential to heat the therapy wax above acceptable temperatures. This could cause patient burns. The purchase of a paraffin bath manufactured as a medical device is a wise investment.