

# Burns

When the skin comes in contact with something hot, it may be damaged, with death of cells in the skin. The severity of the injury depends on the intensity of the heat and the length of time that it is in contact with either heat or certain chemicals.

## Degrees of burns

Burns are classified by the depth of injury, which helps determine the appropriate treatment (**Figures 1 and 2**).

- **1st Degree:** Superficial - redness of skin without blisters
- **2nd Degree:** Partial thickness skin damage – blisters present
- **3rd Degree:** Full thickness skin damage – skin is white and leathery
- **4th Degree:** Same as third degree but with damage to deeper structures such as tendons, joints and bone

## Treatment

Initial first aid measures include removing the hand from the source of heat and keeping it clean. Treatment focuses on preventing further problems with stiffness and infection. The treatment depends on the severity of the burn. Burns over a major percentage of the body require hospitalization and care in special burn units. Burns just on the hand may be treated on an outpatient basis if the pain can be adequately controlled.

### **1st Degree (Superficial)**

These are treated primarily for comfort with local pain killers. They usually heal within a week.

### **2nd Degree (Partial Thickness)**

Blisters on the hand may or may not be trimmed. The hand and forearm should be splinted in a position of safety to prevent later stiffness. If there are open and raw surfaces, cleaning, frequent dressing changes, and the application of local topical antibiotics should be performed until the wounds are healed. Wound healing occurs within two to three weeks.

### **3rd Degree (Full Thickness)**

The dead skin will need to be removed and replaced with skin grafts, which is a surgical procedure. After surgery, the hand is splinted (**Figure 3**) until the skin is healed. Ideally this is within two to three weeks after the injury.

Many patients with severe burn injuries will require more than one operation. Many burned hands will develop contractures, which cause stiff and constricted muscles, months or years after the original injury. Long-term follow up with your hand surgeon should be planned to evaluate for potential future surgery that could improve your hand function.

### **Therapy and Rehabilitation**

Superficial burns generally will not need any formal hand therapy. Deeper burns or those that occur in conjunction with other injuries may require extensive therapy and rehabilitation. Your hand surgeon will coordinate with a therapist if he or she feels that you would benefit from rehabilitation.

