Types of burn injuries

Burn Syndrome

The skin is a very important organ system that protects the body from the outside environment. When the skin is severely injured many imbalances take place that increase the burn victimôs vulnerability for complications, including death. Burn syndrome involves bacterial and fungal invasion, electrolyte and fluid imbalances, metabolic derangement, and organ system dysfunction or failure. Multiple organ failure is a common cause of death in burn victims. The burn team constantly adjusts the care and treatment for burn victims to minimize fluctuations in electrolyte imbalance, fluid needs, bacterial and fungal invasion and organ system dysfunction.

Burn descriptors

There are many different types of burn injuries including scalding burns, flash-burns, direct-flame burns, grease burns, flammable liquids, combustible gas, electrical and chemical burns. The classification of burns has been traditionally referred to as first, second, third or fourth degree burns. However, the use of terms such as superficial, superficial partial-thickness, deep partial-thickness and full thickness descriptors are common. Once a burn injury is sustained, different clinical factors present and the victimôs condition may change from day to day. Sometimes these changes make a burn wound worse and may require more treatment in the days following the original injury. So it is hard to tell how extensive an injury is until time goes by and the degree of injury becomes better understood. The degree of injury guides clinical practice and treatment. In general, a child is hospitalized if a superficial burn injury, or worse, exceeds 9% of the total body surface area or if abuse is suspected. And if a full-thickness burn involves 2%, or more of the body surface area the child will be hospitalized. The anatomical location of the injury is also considered while making treatment decisions. Burns to the face, perineum, hands and feet require hospitalization. If

1% body surface area with second-degree burns, or greater, of these surface areas the child will likely be hospitalized. Also requiring special attention are joint areas of limbs affected by burn injury. Scarring could cause significant disability and these injuries must be handled carefully. Serious burn injuries require extensive therapies to help victims recover functionality of the injured body part.

Scalding burns (hot liquids/hot steam)

A majority of the victims, under 4 years of age, suffer scald burns or contact burns. Sixty-five percent are scald burns because hot water causes more hospitalizations and death than any other hot substance. There is a risk for children to sustain scald burns if their residential water heaters are set above 120 degrees. Exposure to 140 degree water for greater than ten seconds will cause full thickness burns.

Electrical burns (electricity)

Electrical burns may appear superficial and not serious. But in fact, electrical burns are very serious. Electrical Injuries may adversely affect the heart conduction system, especially in older victims. Injuries to extremities usually require surgical intervention to prevent loss of the limb. Please seek medical attention if your child has been electrocuted, even if the wound appears mild. Electrical burns appear less severe on the external surface of the body. Remember the external appearance of a burn injury does not reflect the actual tissue damage that may be inside the body. Toddlers with electrical burn injuries should always be evaluated by a physician. Your child may need a series of EKGs, among other imaging and blood tests, to check for damage to the heart muscle if electrocution has occurred. Often children with electrical burns will require surgery on the burned limb to relieve pressure within the muscle compartments. If your child complains of tingling in the extremity that was electrocuted, get your child to the emergency department quickly. The human body conducts electricity readily. To remove someone from an electrocution

source, you must use a wood or rubber device to protect yourself from electrocution also. Do not hastily approach someone that has been electrocuted unless the immediate area is safe. So not touch fences or other metal items where wires are down. Electrocution can make the heart stop suddenly. Burn centers may administer various tests to reveal the extent of nerve, muscle and bone damage an electrocution victim has sustained. Electrocution results from electrical current from electrical wires, electrical outlets and lightening.

Chemical burns (strong acids/bases)

Chemical burns may be caused by exposure to strong acid or alkaline products. The problem with chemical burns is injuries continue to progress despite removal from contact with the burn source due to ion exchange. These burns may be deeper than they initially appear at first encounter. Large amounts of irrigation with water or normal saline is indicated on the burn wound. Chemical burns may be sustained after exposure to household and industrial cleaning products, drain products, battery fluid or other chemicals.

Thermal burns (any heat source)

Flash burns (radiation/sunlight)

Flash burns result from radiation absorption in the exposed areas of the skin or close exposure to combustion with intense heat or electrical arching. Flash burns are not common in children unless the child is occupying a very unsafe play or living area. Flash burns are more likely to occur as occupational or wartime hazards and while tanning or receiving radiation treatment.

Direct-flame burns (open fire)

Direct-flame burns result from contact with fire.

Grease burns (hot oil and grease)

Grease burns are usually sustained while cooking in the kitchen or during outdoor cooking activities. Children should be restricted from these areas while cooking is taking place.

Combustion burns (gasoline/paint thinner/natural gas)

Combustion burns may result when the victim is adjacent to an explosion, where combustion is spontaneous. Such as what may occur in a residence when natural gas has accumulated in a room and someone turns the light switch on.

Radiation burns

Radiation burns may result from prolonged exposure to solar sources such as sunlight or tanning beds. Also, radiation sources such as x-ray equipment may cause injury.