

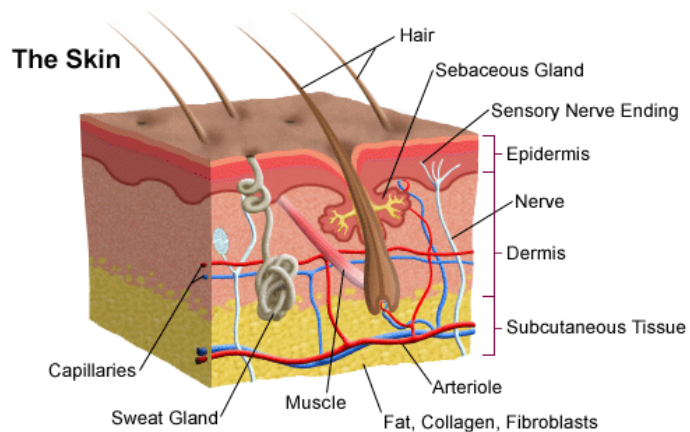
## The Skin

The skin is the largest organ in the body. It provides 1) protection from infection and injury, 2) prevention of loss of body fluids, 3) regulation of body temperature, and 4) sensory contact with environment.

### Skin Anatomy

Understanding the anatomy of skin is required for burn injury classification. The largest organ of the body, the skin consists of three layers:

- Epidermis: the outermost layer that serves as a waterproof barrier.
- Dermis: the middle layer that contains hair follicles, blood vessels, nerves, and sweat glands.
- Hypodermis: the deeper subcutaneous tissue that contains fat and connective tissue.



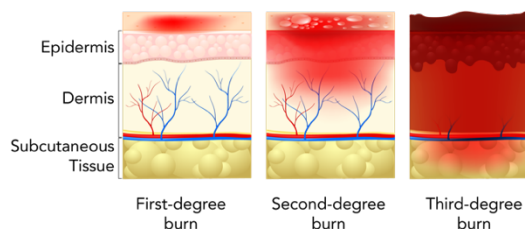
## Burn Classification

Burn classification is important in determining the level of care a patient will need, but it is often difficult to assess initially. Moreover, burn injuries are dynamic in nature, and even minor-appearing injuries can worsen with time. This drives the need for burns to be reassessed in 24 to 72 hours.

The American Burn Association classifies burns by depth:

- First Degree: superficial
- Second Degree: partial thickness
- Third Degree: full thickness

### Burn Classification



### First Degree Burns

First degree burns involve only the epidermis and cause reddening of the skin due to dilation of superficial blood vessels. First degree burns are painful, dry, and blanching. They do not blister and generally heal in three to six days.



#### First Degree burns:

- Involve the epidermis
- Seldom require medical intervention
- Heal spontaneously

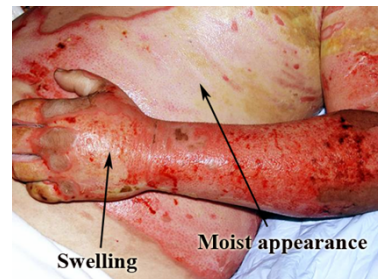
#### The injured site is characterized by:

- Redness
- Mild swelling
- No blisters
- Hypersensitivity
- Pain

### Second Degree Burns

In second-degree burns (also known as partial-thickness burns), the entire epidermis and the dermal layer are injured. Partial-thickness burns are subclassified as superficial or deep.

- Superficial partial-thickness burns are characterized by:
  - Redness
  - Swelling
  - Thin-walled blisters
  - Hair in the injured site remains intact
  - Moist appearance
  - Extreme pain
  - Blanching with pressure (fast capillary refill)
  - Pinprick can be felt
  - Most heal within three weeks
- Deep partial-thickness burns are characterized by:
  - Redness with whiter/mottled appearance
  - Swelling
  - Blister formation
  - Hair in the injured site intact
  - Moist appearance
  - Pain
  - Blanching with pressure (slow capillary refill)
  - Decreased pinprick sensation
  - Take more than three weeks to heal
  - These types of burns may require surgery



### Third Degree Burns

Full-thickness burns destroy the entire dermis and into underlying fat and connective tissue. These injuries require referral to a burn center.

Third degree burns are characterized by:

- Leathery white, dark red, brown, or charred appearance
- Swelling
- No blister formation
- No hair in the injured site
- Dry and hard appearance
- Painless
- Does not blanch when pressure is applied (no capillary refill)
- No pinprick sensation
- Need for treatment at a burn center

