

Introduction

- A burn is a type of injury to human flesh caused by heat, chemicals, electricity, sunlight or radiation. Scalds from hot liquids and steam, building fires and flammable liquids and gases are the most common causes of burns.
- Another kind is an inhalation injury, caused by breathing smoke.



Prevalence in India

- According to the World Health Organization (WHO), 10 Lakh Indians suffer from burns every year.
- As per the 2012 data of Union health ministry of India, - India records 70 lakh burn injury cases annually of which 1.4 lakh people die of burns every year. Around 70% of all burn injuries occur in the most productive age group (15-40 years).
- Around four out of five burnt cases are women and children.
- As many as 80% of cases admitted are a result of accidents at home (kitchen-related incidents)

Who is/are affected or at risk?

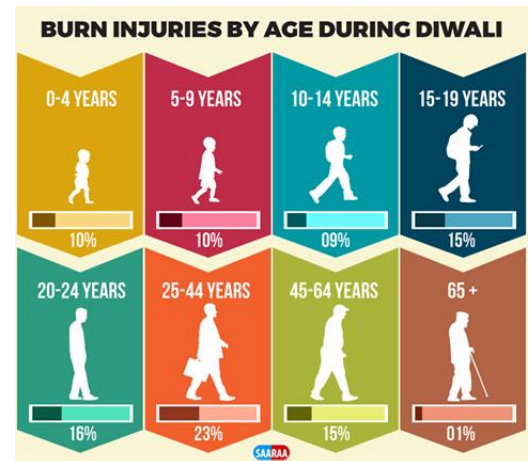
Every single person in the world is at risk but there's more to it than that.

Gender

- Female and male have broadly similar rates for burns according to the most recent data.
- Open fire cooking, or inherently unsafe cook stoves can ignite loose clothing.
- Flames used for heating and lighting also pose risks.

Age

- Children are particularly vulnerable to burns. Burns are the 11th leading cause of death of children aged 1–9 years and are also the fifth most common cause of non-fatal childhood injuries.
- While a major risk is improper adult supervision, a considerable number of burn injuries in children result from child maltreatment.



Type of Burns

- First degree – these are injuries that are localized to the epidermis. These are superficial burns affecting the top layer skin.
- Superficial second degree – these are injuries that affect the epidermis and superficial papillary dermis
- Deep second degree – these are injuries that go through the epidermis and deep up to reticular dermis
- Third degree – this is a full thickness injury through the epidermis and dermis into subcutaneous fat
- Fourth degree – this is an injury that goes through the skin and subcutaneous fat into underlying muscle and ligaments.
- Fifth degree – the burn that penetrates the muscle and begin to burn bone
- Sixth degree – Most severe burns which have charred bone

Burns can cause swelling, blistering, scarring and in serious cases, shock and in the most tragic of cases, death. They can lead to infections as they will damage the skin's protective barrier. Treatment for burns depends on the cause of the burn, how deep it is, and how much of the body it covers. Antibiotic creams are a simple method to prevent or treat infections. For more serious burns, treatment is needed to clean the wound, replace the skin, and make sure the patient has enough fluids and nutrition.

Causes of Burns:

Thermal Burns – Dry heat – Contact Burn, Flame Burn

Moist Heat – Scald Burn

Smoke and inhalational injury

Chemical Burns – acids & alkali

Electrical Burns – High & low voltage

Cold Burns – Frostbite

Emergency care – Do's and Don'ts

Here's the thing about burn injuries. They can happen at any place at any time. You never know where it's going to come from. It could be in your home, school, place of business or even in the playground.

Imagine a scenario where you're cooking in the kitchen and then suddenly, oil is splashed on the surface of your arm. It is scorching hot which luckily doesn't catch an actual spark on the stove. But what do you do in such a case? You have to react quickly and steadfast. That's why we have arranged a series of do's and don'ts that you should follow when a burn injury happens.



Do's

- Stop the burning process by removing clothing and irrigating the burns.
- Extinguish flames by allowing the patient to roll on the ground, or by applying a blanket, or by using water or other fire-extinguishing liquids.
- Use cool running water to reduce the temperature of the burn.
- In chemical burns, remove or dilute the chemical agent by irrigating with large volumes of water.
- Wrap the patient in a clean cloth or sheet and transport to the nearest appropriate facility for medical care.

Don't's

- Do not start first aid before ensuring your own safety (switch off electrical current, wear gloves for chemicals etc.)
- Do not apply ice because it deepens the injury. Avoid prolonged cooling with water because it will lead to hypothermia.

- Do not open blisters until topical antimicrobials can be applied, such as by a health-care provider.
- Do not apply any material directly to the wound as it might become infected.
- Avoid application of topical medication until the patient has been placed under appropriate medical care.

Trauma care/ Rehabilitation

1. Amongst all traumas, burn cases have the highest duration of any hospital bed occupancy. The cost of a hospitalized burn injury case management is extremely high which may cost several lakhs of rupees hurting the financial backbone of the country.
2. Physically and cosmetically debilitating scars are the most common after-effects of extensive burns. Such scars often require additional plastic surgery—sometimes years after the initial skin grafting—to release contractures over joints and to achieve acceptable cosmetic results.
3. Realistically, the results are almost never as good as the patient's pre injury condition. Most burn scars are unattractive, and, though the patient may realistically hope for improvement, complete restoration is usually not possible.
4. Many victims of severe burns face years of painful physical therapy as they work to regain or maintain mobility in damaged joints. The psychological adjustment to disfigurement may be traumatic, and many patients require extended counselling to come to grips with their altered appearance and physical disabilities. Yet, with the help of understanding family, friends, and professionals, even severely injured burn victims can make successful adjustments and lead productive lives.
5. There are currently huge gaps in terms of the required infrastructure, communication and policies to manage trauma care in India. There is a need for a national trauma policy, which will help strengthen the care given to patients who have suffered from these types of injuries.

How to prevent burns safely

Burns are preventable. High-income/Developed countries have made considerable progress in lowering the rates of deaths attributed to burn injuries, through a combination of prevention strategies and improvements in the care of such affected people. Most of these advances in prevention and care have not been completely applied in low- and middle-income countries/developing nations. They have been unproductive in some cases. An increased effort to commit to such a cause would likely lead to significant reductions in rates of burn-related death and disability.

Prevention strategies should address the hazards for education for vulnerable populations and training of communities in first aid. An effective burn prevention plan should be multispectral and include broad efforts to:

- Improve awareness
- Develop and enforce effective policy
- Describe burden and identify risk factors
- Set research priorities with promotion of promising interventions
- Provide burn prevention programmes
- Strengthen burn care
- Strengthen capacities to carry out all of the above.
- Enclose fires and limit the height of open flames in domestic environments.
- Promote safer cook stoves and less hazardous fuels, and educate people in regards to loose clothing
- Apply safety regulations to housing designs and materials, and encourage home inspections.
- Improve the design of cook stoves, particularly with regard to stability and prevention of access by children.
- Lower the temperature in hot water taps.
- Promote fire safety education and the use of smoke detectors, fire sprinklers, and fire-escape systems in homes.
- Promote the introduction and compliance with industrial safety regulations, and the use of fire-retardant fabrics for children's sleepwear.
- Avoid smoking in bed and encourage the use of child-resistant lighters.
- Encourage further development of burn-care systems, including the training of health-care providers in the appropriate triage and management of people with burns.
- Support the development and distribution of fire-retardant aprons to be used while cooking around an open flame or kerosene stove.