INVESTMENT IN RESEARCH SAVES LIVES AND MONEY

Burns

A burn is an injury caused by heat, radiation, electricity, friction, or contact with chemicals. The most common burns are thermal (heat) burns. The severity of a burn is based on how deep the burn is and how large an area it covers. First-degree burns damage the outer layer of skin (epidermis), second-degree burns extend to the deeper layer of skin underneath the outer layer (dermis), third-degree burns destroy the hair follicles and sweat glands buried deep in the dermis and extend to the underlying tissue, fourth-degree burns extend into fat, fifth-degree burns into the muscle, and sixth-degree burns to the bone.

When the body is faced with a large or deep burn, the metabolic and inflammatory responses can overreact, making the injury more severe and harming other organ systems like the heart, lungs, and kidneys. Minor burns are treated with bandages and antibiotics, but more severe burns may need treatment with fluid therapy, removal of the burned tissue, and one or a combination of skin grafts to cover the wound. Serious burns can lead to impaired physical or mental recovery.

TODAY

96.7% of patients treated in burn centers survive.

Between 2011 and 2015, about 486,000 fire or burn injuries were seen at emergency rooms.

The number of burn-related deaths has declined by over 50% in the last 40 years.

Research Delivers Solutions

Patients with serious burns often suffer severe nutrient deficiencies due to hypermetabolism, which can impair immune function and wound healing. Researchers explored the effects of the amino acid glutamine (GLN) in burn patients. One study found that patients who received intravenous GLN after a burn injury were three times less likely to have bacterial infections compared to patients who did not receive GLN treatment. This GLN treatment also significantly reduced mortality. These studies may be useful in developing GLN-based therapies in the future for patients with severe burns.

For burn survivors, an important part of the recovery is maintaining flexibility in the healing skin. One study of 23 patients tested the efficacy of using paraffin wax paired with sustained stretching to increase skin elasticity. They found that patients treated with paraffin wax and a regular stretching routine had a significantly increased range of motion compared to patients who only participated in stretching. Since many burn survivors experience functional impairment through skin stiffness, this study provides support for a simple, cost-effective therapy.

How important is it for the federal government to incentivize greater private sector investment in new treatments and cures?

Source: A Research!America poll of U.S. adults conducted in partnership with Zogby Analytics in January 2020

COST

$1.5 billion: Annual medical costs associated with burn-related injuries.

$24,000: Average cost of burn-related hospital stays, which is 2x the average cost of all other hospital stays.
Burns

Then. Now. Imagine.

THEN
In the mid-1970s, burns covering more than 20% of a person’s body were nearly always fatal.  

NOW
Those with burns covering 90% of their bodies can survive.  

IMAGINE
Even more effective post-burn therapies and treatments.

Burn Injuries in Children

Children are especially vulnerable to burn injuries. Almost 25% of all burn injuries occur in children under the age of 15. An estimated 113,108 children aged 18 and younger were treated for burns in the United States in 2014. Scald burns are the most common cause of burns in the particularly young, usually through tap water that is too hot. The CDC recommends adjusting the temperature settings on hot water heaters so that water does not leave the tap at temperatures above 120°F (48.8°C).

Number of Adult and Pediatric Burn Centers by State