Investment in research saves lives and money

**facts about:**

**Burns**

**Today:**

- Each year, nearly 500,000 Americans receive treatment for burns, including 40,000 hospitalizations and 3,400 deaths.¹
- The average American faces a 1 in 1,442 chance of dying from exposure to fire or smoke.²
- Sixty-two percent of scald burns are sustained by children under five years of age.³
- Inhalation burns, burns to the throat and lungs, are associated with as much as a 20% increase in mortality compared with burns to the body’s surface. Patients who develop pneumonia as a result of inhalation burns face up to a 60% increase in mortality.⁴
- On average, each 1% of total body surface area (TBSA) affected by a burn equates to one day of inpatient hospitalization; for patients with inhalation burns the average length of stay is four days.⁵

**The Cost:**

- In the U.S., burn-related medical costs exceed $1.5 billion per year.⁶
- Indirect costs associated with burns in the U.S. exceed $5 billion per year.⁶
- The average cost of a burn-related hospital stay is $24,000, more than double the cost of non-burn related stays.⁷
- The total cost of burn-related emergency department visits for children ages 4 and younger is more than $300 million per year, the highest among all age groups.⁸

**HOW RESEARCH IMPROVES AND SAVES LIVES:**

- A University of North Carolina lab conducted the largest long-term study on the effectiveness of lasers in treating burn scars. The study indicated that after 30 months of treatment, patients showed a 68% improvement in scarring and a significant improvement to their quality of life.¹
- A study in severely burned children showed that over a 12-week period, rehabilitation training improved function and increased muscle mass. This training program helps counter hypermetabolism, a dramatic increase in how much fuel the body uses, that often accompanies severe burns and can last for up to two years following the injury.²

**HOW RESEARCH SAVES MONEY:**

- Researchers have shown that home-based vacuum assisted therapy improves the effectiveness of skin grafts for patients recovering from burns. This home-based treatment also reduces costs by nearly 74% compared to in-hospital treatment.³
- Research has shown that the presence of sprinkler systems in homes leads to a 27% reduction in burn-related injuries, a 53% reduction in the medical costs of treating burn injuries, and a 41% reduction in total cost associated with burn injuries.⁴

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³ MUSHIN, O. ET AL. BURNS 2017. 43(3):490-494
⁴ NATIONAL FIRE PROTECTION AGENCY <WWW.NFPA.ORG>
⁵ RANDOLPH HEARST BURN CENTER; DEPARTMENT OF SURGERY, WEIL CORNELL MEDICAL COLLEGE
⁶ AMERICAN SCALD PREVENTION CAMPAIGN <WWW.FLASHSPASH.ORG>
⁷ HCUP – AMERICAN BURN ASSOCIATION <WWW.AMERIBURN.ORG>
⁸ WEB-BASED INJURY STATISTICS QUERY AND REPORTING SYSTEM (WISQARS) DATABASE <CDC.GOV>
Hope for the Future:

- The Wake Forest Institute for Regenerative Medicine is leading a multi-organization collaboration to develop “biolinks” to print replacement tissues and organs. This would allow physicians to 3D print skin to replace skin lost due to burn wounds.1

- Harvard School of Medicine-led researchers have created a model that allows physicians to identify burn patients at increased risk for multiple infections. This model, which utilizes biomarkers to assess risk, allows researchers to predict a patient’s likelihood of future infections weeks before they take hold with nearly 85% accuracy. Refining this model and putting it into practice could dramatically reduce complications associated with burn wounds, reduce the length of costly hospital stays, and save lives.2

- Researchers at PolarityTE have developed a novel treatment that has been shown to fully regrow functional skin tissues that have been destroyed by burns in preclinical studies. This technique improves on existing skin grafts because it replaces not only the surface layer of skin cells but also the deeper layers of skin, along with hair follicles and sweat glands, and may significantly reduce visible scarring.3

The Bottom Line:
Burns are among the most common and debilitating injuries. Burn care is expensive, complex, and often cannot fully repair damaged tissue. Research into better ways to prevent and treat burns could significantly reduce the suffering of those inflicted with these terrible injuries and could reduce the high cost burden that many patients with burn injuries bear.

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1 WAKE FOREST BAPTIST MEDICAL CENTER <WWW.WAKEHEALTH.EDU>.