



JOHNS HOPKINS
MEDICINE

Division of BURN SURGERY



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The Johns Hopkins Burn Center and the Division of Burn Surgery provides a comprehensive, nationally recognized program of care for adult and pediatric burn injuries. Our goal focuses on returning patients to their highest level of function by attending to the physical, psychological, social and vocational aspects of their lives.

The Burn Center comprises the adult unit at the Johns Hopkins Bayview Medical Center and the pediatric unit located at the Johns Hopkins Children Center.

The Johns Hopkins Burn Center opened in 1968. The adult unit is verified by the American Burn Association and the Children's unit is certified by the Institute for Emergency Medical Services Systems (MIEMSS) and cares for all burn victims under the age of fifteen. Expert care from the Division's burn and reconstructive surgeons, coupled with extensive clinical and basic science research, makes the Johns Hopkins Burn Center the major referral center for burn victims in the Mid-Atlantic region.

Clinical Services

Conditions treated at the Burn Center:

- Acute burn injury
 - Flame, scald, electrical, chemical
- Late effects of burn injury
 - Burn scar deformity
 - Burn scar dysfunction
- Complex wounds
 - Toxic epidermal necrolysis
 - Necrotizing fasciitis
 - Chronic ulcers
 - Pressure sores

The complex nature of burns and their physical and psychological aspects require the expertise of a multidisciplinary team of providers which include the following:

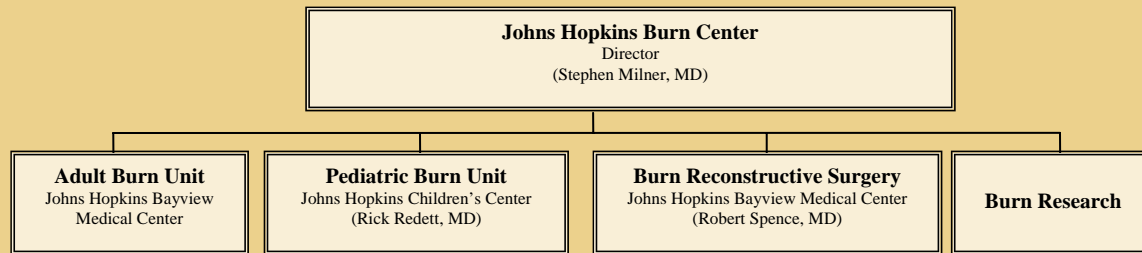
Surgery: Treatment of burns and wounds has now largely evolved into a surgical subspecialty. Early surgical intervention to remove devitalized tissue and achieve early closure of wounds is performed daily to improve survival following major thermal injury.

Intensivists: Thermal injury affects all organ systems and may lead to pulmonary dysfunction, renal insufficiency and gastrointestinal abnormalities. Board-certified burn intensivists help with the complex management of these often critically ill patients.

Psychology: The team of psychologists is uniquely positioned to promote recovery and identify and treat the psychological repercussions that typically accompany serious burn injury.

Nutrition: Nutritionists evaluate patients for their complex requirements. Replacement of key nutrients is essential for wound healing and successful recovery.

Physical Therapy: Therapists specialize in burn rehabilitation and assist the burn survivor in regaining motion and strength. The Johns Hopkins Burn Center was the first center in the country to offer individualized burn masks to reduce facial scarring.



Plastic and Reconstructive Surgery: Plastic surgeons can improve physical appearance and function, thereby increasing the burn survivor's quality of life.

Social Work: Services include family counseling, referrals to appropriate rehabilitation centers and sub-acute facilities, and follow-up care in the hospital out-patient clinics. Case managers collaborate with social workers.

Adult and Pediatric Burn Care

The adult Burn Intensive Care Unit (BICU) has ten beds and is designed to provide advanced resuscitative and monitoring techniques. In 2005, the Johns Hopkins Burn Center cared for the admission of over 400 adults and 80 children. Approximately, 250 operative procedures were performed with additional reconstructive cases.

Founded in 1912, the Johns Hopkins Children Center offers one of the most comprehensive pediatric medical programs in the country for performing emergency trauma surgery. The Children's Center burn team similarly includes specialists from several additional disciplines such as Child Life Services and Parenting Counselors.

All of these services fall under Johns Hopkins Medicine, the umbrella medical organization for all clinical, research and teaching activities.

Reconstructive Surgery Program

The Burn Center has an organized program for reconstruction and rehabilitation of burn survivors that has had a national and international reputation for nearly twenty years. The reconstruction program, directed by Dr. Robert Spence, also applies the same clinical concept of the multidisciplinary approach. Burn related deformities are improved by all modern plastic surgery techniques.

Pre and Post-surgery photos from reconstructive procedures offered at the Burn Center.



Complex Wounds

Adjacent to the Burn Intensive Care Unit are ten beds dedicated to the surgical care of complex wounds.



Director Stephen Milner, M.D. directs surgical residents in burn surgery techniques (left); The team provides acute care for a badly burned toddler (center); Occupational therapist, Michelle Ober, OTR/L instructs technician in the rehabilitation gym (right).

Community Connections

The burn service is actively involved in fire and burn prevention programs through local presentations and participates in numerous community, school and employee health fairs throughout the state each year.

In return, the Burn Center is financially supported by various community organizations including the Metropolitan Firefighters and the Phoenix Society for Burn Survivors.

Education

Clinical education is an important component of the Burn Center's mission. We provide and participate in numerous educational programs for residents, medical students and other healthcare professionals throughout the state and country.

Each year, residents and medical students from both Johns Hopkins School of Medicine and neighboring hospitals complete surgical rotations through the Johns Hopkins Burn Center. Three extended fellowship opportunities are also available (one surgical and two health psychology fellowships). Fellowships provide clinical experience as well as a strong research emphasis on all aspects of burn care.

We currently administer the Johns Hopkins Military Burn Course, which provides weekly clinical and classroom experience to military personnel. The Burn Center is also accredited to teach the American Burn Association Burn Life Support Course.

Research

The Michael D. Hendrix Burn Research Center maintains an active research program that is focused primarily on translational research. This aims to improve and develop novel therapies and achieve better patient care. Research interests of the team fall into the following areas: metabolism, sepsis, immunology of burns, wound healing, posttraumatic stress and other psychological sequelae, non-traditional pain management and burn reconstruction. The basic science burn research laboratory is housed in the Alpha Center and provides facilities for the investigation of wound healing, burn wound sepsis and the immune response.

Some 20 clinical trials are now in progress with leading pharmaceutical companies. The Burn Center has also been the ten-year recipient of the National Institute of Disability and Rehabilitation

An Extraordinary Survivor

José Suarr is just like many other 23 year olds: he is hard working, loves to eat pizza, and is very fond of



playing ball with his dog. Yet, this young man has recently re-learned how to walk, talk, and feed himself after sustaining a 95%, 3rd degree total body surface area flame burn while burning brush with gasoline at work. When Jose went to work on December 11, 2005, the Johns Hopkins Burn Center was the last place he thought he would end up that day. As a Spanish-speaking

native of Guatemala, he could barely comprehend the seriousness of his injuries, but he underwent 24 surgeries to repair his burn wounds and endured countless hours of physical therapy each day. During his eleven month hospitalization, the pain of his injury did not deter him from wanting to get better. José has displayed the utmost patience and determination throughout the whole recovery process. He is proud to be walking again and has plans to return to work soon.

Research grant to examine the long-term physical and psychological rehabilitative complications associated with burn survival. Sources of funding include the National Institutes of Health, the Department of Education, and local community grants.

In 2005 and 2006, burn center faculty were invited as guest speakers to several nationally and internationally recognized conferences in addition to collectively publishing over 50 peer reviewed articles in medical journals, 10 book chapters and 50 abstracts for national symposiums.

For a complete listing of ongoing research activities, please visit our website at <http://hopkinsmedicine.org/burn>.

The following is a list of selected publications from 2005 and 2006.

Milner SM, Bhat S, Gulati S, Gherardini G, Smith E, Bick RJ. **Observations on the microcirculation of the human burn wound using orthogonal polarization spectral imaging.** *Burns.* 2005;31(3):316-319.

Ferguson M, Byrnes, C, Sun L, marti G, Bonde P, Duncan M, Harmon JW. **Wound Healing enhancement: electroporation to address a classic problem of military medicine.** *World J Surg.* 2005;29S:55-91.

Fauerbach JA, Lezotte D, Cromes GF, Kowalske K, de Lateur BJ, Goodwin CW, Blakeney P, Herndon DN, Wiechman S, Engrav LH, Patterson DR. **2004 American Burn Association Clinical Research Award. Burden of Burn: A Norm-Based Inquiry into the Influence of Burn Size and Distress on Recovery of Physical and Psychosocial Function.** *Journal of Burn Care & Rehabilitation.* 2005;Jan-Feb;26(1):21-32.

Thombs BD, Fauerbach JA, McCann UD. **Posttraumatic stress disorders following injury: Assessment and treatment.** *Primary Psychiatry.* 2005;12(5):51-55.

Poindexter BJ, Bhat S, Buja ML, Bick RJ, Milner SM. **Localization of antimicrobial peptides in normal and burned skin.** *Burns.* 2006;32(4):402-407.

Thombs BD, Singh VA, Milner SM. **Children under 4 years are at greater risk of mortality following acute burn injury: Evidence from a national sample of 12,902 pediatric admissions.** *Shock.* 2006;26(4):348-352.

Esselman PC, Thombs BD, Fauerbach JA, Magyar-Russell G. **Burn rehabilitation: State of the science.** *American Journal of Physical Medicine & Rehabilitation.* 2006;85(4):383-413.

Wolf SE, Edelman LS, Kemalyan N, Donison L, Cross J, Underwood M, Spence RJ, Noppenberger D, Palmieri TL, Greenhalgh DG, Lawless M, Voigt D, Edwards P, Warner P, Kagan R, Hatfield S, Jeng J, Crean D, Hunt J, Purdue G, Burriss A, Cairns B, Kessler M, Klein RL, Baker R, Yowler C, Tutulo W, Foster K, Caruso D, Hildebrand B, Benjamin W, Villarreal C, Sanford AP, Saffle J. **Effects of oxandrolone on outcome measures in the severely burned: a multicenter prospective randomized double-blind trial.** *J Burn Care Res.* 2006 Mar-Apr;27(2):131-9; discussion 140-1.

Laffan AM, Bellatoni MF, Greenough WB 3rd, Zenilman JM. **Burden of Clostridium difficile – associated diarrhea in a long-term care facility.** *J Am Geriatr Soc.* 2006;54(7):1068-73.

Banks ND, Milner SM. **Persistence of human skin allograft in a burn patient without exogenous immunosuppression.** *Plast Reconstr Surg.* 2006;In press.

Thombs BD, Singh VA, Halonen J, Diallo A, Milner SM. **The Effects of Pre-existing Medical Comorbidities on Mortality and Length of Hospital Stay in Acute Burn Injury: Evidence from a National Sample of 33,543 Adult Patients.** *Ann Surg.* 2006;In press.

Singh VA, Bhat S, Milner SM. **The Pathogenesis of Burn Wound Conversion.** *Ann Plast Surg.* 2006;In press.

Thombs BD, Haines J, Bresnick MG, Magyar-Russell G, Fauerbach JA, Spence R.J. **Depression in burn reconstruction patients: Symptom prevalence and association with body image dissatisfaction and physical function.** *General Hospital Psychiatry.* 2006;In Press.

de Lateur BJ, Magyar-Russell G, Bresnick MG, Bernier FA, Ober MS, Krabak BJ, Ware L, Hayes MP, Fauerbach JA. **Augmented exercise in the treatment of deconditioning from major burn injury.** *Archives of Physical Medicine and Rehabilitation.* 2006;In Press.

Thombs BD, Notes LD, Lawrence JW, Magyar-Russell G, Bresnick MG, Fauerbach JA. **From survival to socialization: A longitudinal study of body image in survivors of severe burn injury.** *Psychotherapy and Psychosomatics.* 2006; In press.



The Johns Hopkins Hospital

Faculty

(To view a full CV, visit our website at <http://hopkinsmedicine.org/burn>)

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