

MILITARY BURN RESEARCH PROGRAM



MISSION: Identify and close gaps in combat burn trauma care through military-focused research

**Congressional Appropriations
FY11-FY24:
\$120M total**



“Burns are one of the most devastating injuries. Disfigurement, chronic pain, and

the constant medical procedures can lead to depression, then suicidal ideation, which Service Members/Veterans are more likely to act on. Knowing that we can not only save lives, but also provide a better quality of life after injuries, is why I will continue to serve the burn community.”

*Staff Sgt. James West,
U.S. Army Retired, FY17-FY24
Programmatic Panel Member*



SCOPE OF THE PROBLEM

Severe burns often lead to **complications** such as

- hypovolemia
- sepsis
- lung injury
- organ failure²



95% of burn patients *suffer from*

- scarring
- limitations in physical mobility
- depression
- anxiety
- PTSD³



RELEVANCE TO MILITARY HEALTH

- Thermal, blast, electrical, frostbite, chemical, directed energy and radiation/nuclear exposure represent **formidable burn threats** to Service Members.
- **Burn injuries represent 7.3% of the 86,857 casualties** in the Joint Theater Trauma Registry, the vast majority due to IED/explosives.
- **Burned Service Members receive greater Injury Severity Scores** than their civilian peers with increased potential for more extensive, deep-partial and full-thickness burns, inhalation injury and complications of critical injury.
- Compared with civilians, **deployed Service Members are twice** as likely to suffer a burn injury⁴

PROGRAM PRIORITIES

- Assess, treat and/or prevent the progression of **atypical burns** resulting from cold exposure, radiation, directed energy, chemical, or electrical injuries
- Innovate best practices and develop **burn knowledge products** in the acute burn care continuum
- Development and/or validation of methods to prevent, assess and/or treat **burn injury-related complications**

¹World Health Organization. Burns. <https://www.who.int/en/news-room/fact-sheets/detail/burns>.

²Heard J, et al. J Burn Care Res 44, no.4, 2023:925-930.

³http://ameriburn.org/wp-content/uploads/2018/01/nlc_militaryburnresearchprogram-leavebehind_012218.pdf.

⁴Engel CC, et al. 2020. RAND Corporation. www.rand.org/pubs/research_reports/RRA807-1.html.



For more information, visit: <https://cdmrp.health.mil/mbrp>

PROGRAM IMPACT AND OUTCOMES

FY11-FY23 MBRP RESEARCH FUNDING RESULTED IN:

73
awards

14
clinical
trials

\$96M
follow-on
funding efforts

230
publications

6
patents and
inventions

HIGH-IMPACT RESEARCH BREAKTHROUGHS

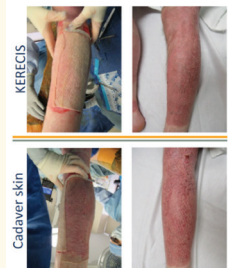
Kerecis GraftGuide®

Temporary coverage for acute burns

- A mesh skin grafting product made from fish skin
- Stable at room temperature
- Usable in austere forward military operational settings
- 90-day outcomes show healed skin and improved skin appearance versus traditional treatments
- Safe and efficient alternative to cadaver skin as an early cover before permanent skin grafting



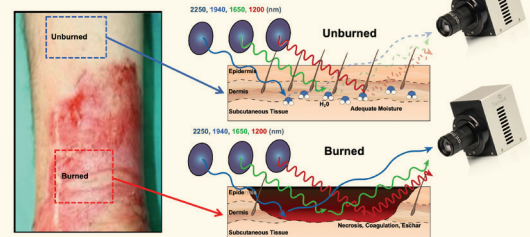
Early cover D90



Short-Wave Assessment Tool (SWAT)

Portable burn wound assessment

- Portable handheld camera-based system
- Assesses burn wound depth
- Predicts wound health outcomes
- Guides more precise treatment debridement



Vitamin C in Thermal Injury – Intravenous high-dose vitamin C for improving burn outcomes

- Ongoing clinical trial
- Evaluates effect of vitamin C administered in early postburn period on reducing organ dysfunction, mortality, and hospital length of stay, as well as improving quality of life six months after burn injury
- Explores effects of inexpensive, readily available and safe vitamin C to reduce inflammation and oxidative stress
- Results expected to impact clinical practice

Novel Use of TXA

TXA to limit burn injury severity

- FDA-approved to treat heavy menstrual bleeding and hemorrhage prevention in hemophilia patients
- Explores use as a therapeutic treatment to reduce burn wound progression
- Currently being tested in a preclinical animal model



IDENTIFYING GAPS IN BURN RESEARCH AND CARE

In 2022, MBRP invited over 100 key stakeholders, including researchers, clinicians, military experts and patient advocates, to assess gaps in research and patient care in

- Point of injury care
- Acute hospital care
- Subacute care and rehabilitation
- Long-term challenges

Meeting Summary



Point of Contact: CDMRP Public Affairs

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