



THE NTI NEWS

VOL. 2 NO. 1 WINTER 2010

MESSAGE FROM THE CHAIRMAN ▶



It has been clear to me for many years that clinical research is severely underfunded. Government agencies and organized medicine clamor for evidence-based medicine, and surgeons are acutely aware that there is still very little reliable research data to justify the way we practice. You can't have evidence-based medicine if you don't have the evidence, and you can't have the evidence without investing in clinical research!

This is why the National Trauma Institute is so important. There is no other organization solely dedicated to the mission of supporting clinical research efforts in trauma. In its short existence, NTI has already developed a financial base to fund research, developed a list of priorities on which to concentrate its efforts, and is working with national professional organizations to organize the research platforms necessary to provide the evidence for clinical decision making. Such focus and leadership has been sorely needed.

Collaborating with professional organizations whose major mission is to advance trauma care, NTI expects to make important advances in the way and the rate at which research is conducted. Most importantly, developing consortiums of investigators to perform multi-institutional trials will streamline research and enable quicker results.

In a major milestone, we opened our first Request for Proposals in October, which garnered more than 80 submissions. This is an outstanding response for the inaugural RFP and points not only to the expediency of NTI's model, but to the severity of the need for more funding. We expect these proposals to result in some very important projects that will advance trauma care by providing some of the missing evidence we so desperately need.

I believe successful completion of these studies will confirm NTI's role in facilitating trauma research and will result in substantial increases in funding for ongoing research activity. The ball has begun to roll!

Timothy Fabian, MD, FACS
Chairman of the Board, National Trauma Institute

ABOUT THE NATIONAL TRAUMA INSTITUTE ▶

The National Trauma Institute (NTI) is a national non-profit organization that:

- assembles funds from a variety of public and private sources to support trauma research across the country
- supports military and civilian innovation and collaboration in trauma care and research, and
- sets a national trauma research agenda.

NTI's goal is to reduce death and disability resulting from traumatic injury.

2010 NTI SCIENCE COMMITTEE ▶

NTI's Science Committee is the engine behind the research activity of the organization, beginning with establishing the organization's research priorities. The committee developed the policies and procedures for administering grants and issued NTI's first RFP in October. After reviewing the pre-proposals, committee members will invite researchers with the most promising studies to submit full proposals. Final awards will be announced in early 2010.

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ANNUAL TRAUMA SYMPOSIUM ILLUMINATES MASS CASUALTY, SCORES OF CURRENT MEDICAL ISSUES ▶



LTG Schoomaker, the U.S. Army Surgeon General, addresses the Symposium crowd.

More than 800 trauma care professionals from across the country participated in NTI's 15th Annual Trauma Symposium held in San Antonio in August and September 2009. With 120 educational sessions in a variety of disciplines to choose from, physicians, nurses and other medical personnel from both military and civilian care settings found the symposium to be one of the widest ranging and most comprehensive medical conferences available.

LTG Eric B. Schoomaker, U.S. Army Surgeon General, delivered a keynote speech during which he lauded joint military-civilian collaborations that have yielded medical

breakthroughs in areas such as orthopaedic extremity trauma, regenerative medicine and burn treatments. In the preliminary session, military experts from the U.S. Institute of Surgical Research and Wilford Hall Medical Center and civilian physicians from Israel and Florida discussed innovations in mass casualty response.

Rigorously researched and debated topics over the two-day meeting included optimal damage control resuscitation, portable ultrasound usage in pre-hospital settings, use of hypothermia in treating brain injury and cardiac arrest, the viability of hemostatic agents, tourniquet usage, identifying and treating PTSD, and much more. Live demonstrations and a vendor showcase added to the informative nature of the event.

To read and comment on blog postings from the Symposium, visit the News & Information page on NTI's website: www.nationaltraumainstitute.org.

The 2010 Annual Trauma Symposium will be held August 30 – September 1 in San Antonio; further details will be available on the website in the spring of 2010.

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RESEARCH PRIORITY HIGHLIGHT: NONCOMPRESSIBLE HEMORRHAGE ▶



COL Brian Eastridge.

“Current hemorrhage treatments are only useful for extremity or superficial truncal injuries,” indicates COL Brian Eastridge, Director of the Joint Theater Trauma System. Compression works well on extremity wounds to stop bleeding, and new tourniquets (see story on the Combat Application Tourniquet) and advanced bandages have had a major impact on the decline in combat deaths due to hemorrhage in the arms and legs.

But Eastridge cites research showing that approximately 80 percent of hemorrhagic combat deaths are from wounds to the torso that are not compressible and, therefore, are treatable only with surgical interventions. Patients who have penetrating wounds to the trunk are at risk for severe injuries to major vessels, and therefore, massive hemorrhage. These patients are most likely to die during the acute phase of care.

There is no active intervention for noncompressible hemorrhage available to military or civilian medics, who, along with other first responders, have only the tools their predecessors had in the early 20th century.

“Controlling bleeding and limiting blood loss are the only means of avoiding the problems associated with massive hemorrhage in trauma,” says Dr. Timothy C. Fabian, head of the Department of Surgery at the University of Tennessee Health Science Center and NTI board chairman. “If we hope to decrease the mortality of severely injured patients, one of our objectives must be the development of simple, rapid and field expedient techniques for non-surgeons to stop truncal hemorrhage.”

Eastridge and Fabian believe several pilot studies show promise. Recent animal studies of an agent containing collagen and thrombin, introduced into a closed body cavity, offer encouraging results and show that such an agent reduces blood loss when applied immediately and directly to a bleeding tissue. Other studies testing Recombinant factor VIIa add to the growing pool of data supporting the use of this substance as a stabilizing adjunct in the treatment of life-threatening hemorrhage. Last, research showing that a hemostatic foam sprayed directly on the injured liver surface decreases blood loss suggests another potential treatment for noncompressible hemorrhage.

Yet, much more research is needed before any of these potential treatments is confirmed effective and safe. By prioritizing and seeking research funding specifically for non-compressible hemorrhage, the National Trauma Institute hopes to play a role in the introduction of a viable lifesaving treatment into medical practice.

THANK YOU ▶

NTI enjoys the support of the following commercial vendors who participated in the 2009 Trauma Symposium. We look forward to seeing you in 2010.

Argentum Medical, LLC

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Combat Medical Systems

CSTARS

DVBIC

Elsevier

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**United States Army Institute
of Surgical Research**



IRAQ WAR VETERAN AND TRAUMA SURVIVOR OFFERS GUIDE TO PAIN MANAGEMENT IN FREE BOOK ▶



NTI's special guest at the 15th Annual Trauma Symposium, Iraq war veteran Derek McGinnis, released a new book, *Exit Wounds: A Survival Guide to Pain Management for Returning Veterans and Their Families*.

McGinnis, who sustained a traumatic brain injury, extensive shrapnel wounds, damage to his eye and amputation of his left leg above the knee from an Improvised Explosive Device (IED), struggled with horrific pain related to his injuries, but found there was no map to steer him through the minefield toward recovery. "Exit

Wounds contains the information my family and I desperately needed back in 2004," he said.

The book is both a guide to pain management for veterans and their family members, and the inspiring story of how one man fought to survive and even thrive despite his traumatic injuries and painful path to recovery. *Exit Wounds* offers information about:

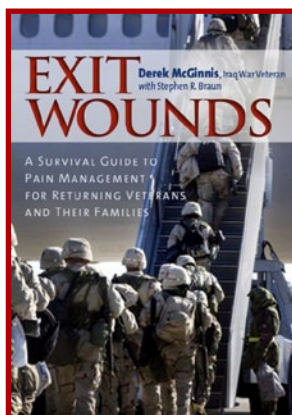
- Acute and chronic pain syndromes afflicting veterans
- Treatment options, including medications, procedures, complementary therapies and other interventions
- Strategies for self-advocating for optimal pain care
- Medical resources inside and outside the Veterans Administration (VA) system
- Caregiver needs, perspectives and resources

Hundreds of thousands of military personnel will return from the wars in Iraq and Afghanistan over the next few years, many struggling with acute pain and facing the possibility of a lifetime of chronic pain. "They and their families deserve a resource to help them navigate through the barriers and obstacles that can prevent effective pain care," said McGinnis.

Exit Wounds is currently being distributed to veterans and service members for free through the Wounded Warrior Project and the Injured Marine Semper Fi Fund. McGinnis is searching for partners to support the printing of the book so that it can be given for free to every service member, veteran, or family member who needs one. It is available to civilians through Amazon

McGinnis now serves as the Military/Veterans Initiative Amputee Outreach Advocate with the American Pain Foundation and travels the country advocating for the pain management needs of veterans, military personnel and their caregivers. He competes in endurance races to raise money for the Semper Fi Fund.

To read an excerpt of *Exit Wounds* or to learn more about where you can obtain a copy or be a printing sponsor, visit www.exitwoundsforveterans.org.



ON THE BLOG ▶

NTI's Blog—found on the News & Information page of the website—covers everything from Trauma Symposium lectures to media coverage of traumatic events to announcements of available grant funding. Visit often, give your input and suggest other topics: www.NationalTraumaInstitute.org. Here's a sample of some recent posts:

December 2: Good News for Economy is Good News for Trauma Survivors

Last week, a news release from the Millennium Research Group (MRG) caught our eye. Despite a sluggish forecast for many industries, MRG projects rapid growth over the next five years for the trauma fixation devices market...

November 18: NTI Board Member to Become ACS Executive Director

A nationally known trauma surgeon and a member of our own Board of Directors, Dr. David B. Hoyt will succeed Dr. Thomas R. Russell as executive director of the American College of Surgeons in January...

November 6: New Rear Seatbelts the Result of Trauma Research

With its introduction of the air-bag rear seat belt, Ford Motor Company continues the practice of adapting trauma research to improve vehicle safety...

October 30: Painting of Burned G.I. – A Reminder of How Far We Have to Go

Retired Army Sgt. Richard Yarosh will be the first Iraq war veteran to be immortalized at the National Portrait Gallery in Washington D.C., a fitting tribute to a man who gave everything but his life for his country...

October 29: MSNBC.com Posts Rarely Seen Photos from Military Trauma Centers

In an online feature called Behind the Front Lines, MSNBC.com sheds light on the realities of war trauma...

MILITARY TOURNIQUET SUCCESS ENDS CONTROVERSY, INFORMS CIVILIAN PRACTICE ►

A paramedic educator in rural Wilson county, southeast of San Antonio, Shirley Schriber had been trained to stay away from tourniquets. Conventional wisdom said their dangers outweighed their utility: that was reflected in the protocols, and that's what she taught her paramedics.

Indeed, tourniquets have a long and sordid history.

In a pro/con debate conducted during NTI's Trauma Symposium in early September, LTC Christopher White, Assistant Director of Clinical Research at the U.S. Army Institute of Surgical Research at Fort Sam Houston, expounded on the evils of tourniquets. While the ancient Hindus used them in the treatment of snakebites and the Greeks figured out that they could stop bleeding, they also recorded that tourniquets caused gangrene. The Romans found them useful for surgical amputations, but noted that they could cause more bleeding.

More modern advances gave no closure to the debate, leading to the no-tourniquet protocol to which Schriber and EMS educators across the country adhered. White said gangrene and tissue damage are possible if the tourniquet is left on too long, and that paradoxical bleeding is still a concern. Asymmetric or poorly designed tourniquets, or those placed over clothing or pocket items can loosen and cause problems, and those applied after the onset of shock result in 100 percent mortality.

"Is the tourniquet an instrument or a weapon?" White asked rhetorically.

But a military redesign of the maligned medical device that takes physics into account, combined with extensive field testing in the current conflicts in Iraq and Afghanistan, seem to have tilted the debate permanently in favor of tourniquet usage.

Speaking on behalf of tourniquet use in the Symposium pro/con session, Dr. Mauricio Lynn, Director of Mass Casualty Preparedness and Response at the University of Miami, cited both Israeli and U.S. studies that found recent tourniquet applications to be effective in preventing both loss of limbs and death. They can be used reasonably safely, he said, especially to stop hemorrhage on injuries where it's difficult to apply direct pressure such as mangled extremities.

The Combat Application Tourniquet (CAT), which is now standard issue for American soldiers, is 38 mm wide, optimal for both stopping bleeding and preserving tissue.

"It has been used successfully thousands of times during the current conflicts," said Lynn.

Abandoning his contrary stance, White agreed, saying that with the increased knowledge



Shirley Schriber is a paramedic educator and volunteers with Eagle Creek Emergency Services in Wilson County, a rural area southeast of San Antonio.

RESEARCH UPDATE ►

NTI's First Request for Proposals Yields Submission Windfall

In October, NTI's first RFP for clinical or translational trauma research—made possible with Congressional funding support championed by Sen. Kay Bailey Hutchison and Rep. Lamar Smith—yielded 85 pre-proposals for projects that have a high potential to change medical practice and save lives.

"We're thrilled to have received such an enthusiastic response to the RFP," said Sharon Smith, NTI's executive director. "Clearly this announcement was welcomed by the trauma research community, and the overwhelming response is an indication of a pent up demand for more resources for these types of projects." NTI's goal, she said, is to reverse the historic under-funding of trauma research.

The Science Committee will invite a number of researchers to submit full proposals, and will award at least \$600,000 by March 2010 for the most promising projects. Proposals that focus on one or more of NTI's priority areas will be given priority in the selection process: hemorrhage control, resuscitation, control of shock, coagulopathy, burn treatment, elimination of hospital-acquired infection, airway and ventilation management, new technology for trauma, and disaster preparedness.

For more information about NTI's research program, visit: www.nationaltraumainstitute.org/research.

that has come from using tourniquets frequently, most of the criticisms have been addressed. “We now know that they can be used safely for up to six hours, that they are ineffective if placed below the site of injury, that venous tourniquets should not be used to stop bleeding (this type of tourniquet increases blood flow), and that the optimal width is 38 mm.”



Photo by Ron Losefsky

The Combat Application Tourniquet (CAT), now standard issue for American troops, incorporates the best medical knowledge about effective width and application. Its simplicity—composed only of a self-adhering band and a windlass strap, clip, and rod—makes it virtually foolproof. It has saved thousands of lives and limbs in the current conflicts.

White also debunked the myth that tourniquets cannot be used successfully below the knee or elbow. “They may actually work better on two bone segments,” he said. And he added that they work more effectively in colder climates.

Sitting in the Symposium audience, Schriber had already come to her own conclusions several months earlier after a friend of hers in the Air Force who works with combat medics showed her a CAT during a trauma lecture. He had just returned from Iraq and told her about how well the new tourniquets were working; and he demonstrated it for her, so she knew how to use it.

A few weeks afterward, she happened to be carrying the CAT in her pocket when she was called to respond to an emergency in north Wilson County. Arriving at the scene, she found an unconscious man with a major arterial bleed—the result of a blown shunt inserted in his arm the day before for dialysis. His family members were desperately but unsuccessfully trying to stanch the flow with direct pressure.

“The car they were in looked like a battle zone,” she remembered. “There was blood everywhere.” Far from a hospital and grasping the severity of the situation immediately, Schriber reached in her pocket for the contraband tourniquet. Recalling what she’d recently learned, and considering the patient’s dire situation, she quickly slipped it on. “It was really easy, and it worked perfectly,” she said. She was struck by both its simplicity and the fact that it had been useful in a non-trauma situation.

Schriber’s personal experience combined with the weight of the Symposium arguments led her EMS service to redesign its protocols, which went into effect the first of October. Working in a community with close ties to the military, Schriber said information sharing between military and civilian medical settings happens more quickly than it might in other parts of the country. “With everything that we’ve learned from the military, there is no reason not to use them,” she said.

White cautioned that since civilian tourniquet use is relatively light, it’s more likely that mistakes will be made in their application. But with changes in protocols like those implemented by Schriber’s EMS service, and proper training, there’s no reason why tourniquet use on the home front cannot be as successful as it has been in combat.

Closing the session, White said the tourniquet, like many medical interventions, is a

NTI Website is Your Resource

As the National Trauma Institute grows, so does our online presence and the resources we are able to share with you. Visit NTI’s dynamic new website today to:

- Sign up to receive announcements of research funding opportunities
- Read about NTI’s research priorities and the most likely avenues for clinical improvement
- View a comprehensive trauma calendar that puts the dates of all national and regional trauma-related meetings at your fingertips
- Monitor the progress of NTI’s requests for federal funding of trauma research
- Learn the results of research funded by NTI
- Read NTI’s newsletter archives
- Find out about NTI-hosted professional meetings and conferences and download presentations and follow-up materials
- Watch a growing archive of amazing trauma survivor stories that both inspire and educate
- Find the latest statistics related to trauma in the United States
- Follow NTI’s blog and participate in discussions related to NTI’s activities, trauma events and media coverage
- Give online to support NTI’s mission

As NTI’s research agenda progresses, look for more functionality! Add NTI’s website to your bookmark bar today: We want to be your most trusted, timely and convenient source of information related to trauma research.

www.NationalTraumaInstitute.org





Dr. Mauricio Lynn speaks at the 15th Annual Trauma Symposium in favor of using tourniquets in both military and civilian settings.

double-edged sword. "It can save your life; it can defend you, but it must be used appropriately." His recommendations for treatment of hemorrhage are:

- Apply direct pressure and elevate
- Apply hemostatic dressing, elastic bandages
- Have a new tourniquet at the ready if the first steps do not stop the bleeding

Dr. Lynn added that tourniquet use was just included in the new edition of the Advanced Trauma Life Support (ATLS) civilian certification course for trauma care providers, solidifying the military-civilian transfer of knowledge and demonstrating how evidence-based studies can change practice. "The curse is gone!" he exclaimed.

Honor A Loved One Give to the National Trauma Institute

Your generous support of the National Trauma Institute allows us to fulfill our commitment to funding trauma research, changing trauma practice and creating awareness about the devastating effects of trauma.

Millions of Americans are touched by trauma every year, both at home and in overseas military operations—help us reduce the impact of trauma and alleviate related suffering.

Make your gift mean more:

If desired, donors may give in memory of or in honor of a physician, hospital or loved one.



To make a donation to the National Trauma Institute online, visit www.NationalTraumaInstitute.org and choose from a variety of giving levels. If donating by mail, checks may be sent to the National Trauma Institute, 16500 San Pedro, Suite 350, San Antonio, TX 78732.

Contact NTI's Development Office for more information:

Giving@NationalTraumaInstitute.org
or 210-233-6162



MAY 2010 IS NATIONAL TRAUMA AWARENESS MONTH

First proclaimed in **1988** by President Ronald Reagan, **National Trauma Awareness Month** is our opportunity to let lawmakers know that more funding is needed for **trauma research** and to help our communities understand the importance of **excellence** in trauma care.

For ideas about what you can do to recognize National Trauma Awareness Month, visit NTI's website:
www.NationalTraumaInstitute.org



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LEARN AND SAVE LIVES ►

16th Annual Trauma Symposium

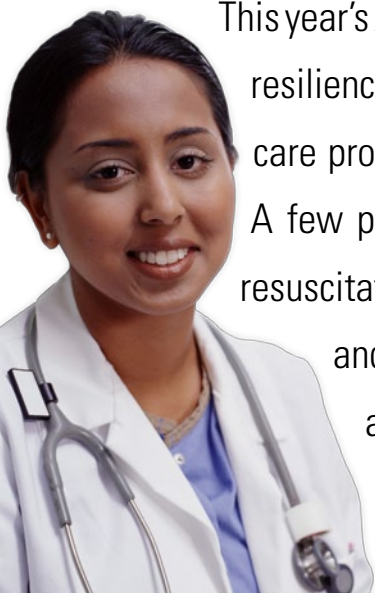
August 30 – September 1, 2010

Marriott River Center – San Antonio, Texas

SAVE THE DATE

This year's Annual Trauma Symposium will open with a general session on PTSD and provider resiliency, recognizing that the psychological health of both trauma survivors and their care providers is as important to long-term rehabilitation as any physical intervention. A few proposed topics of our more than 120 sessions include traumatic brain injury, resuscitation and orthopedic research. NTI's unique blend of military and civilian speakers and topics makes our Annual Symposium unlike any other medical conference in the country.

Look for further details on the website beginning in spring 2010.



www.NationalTraumaInstitute.org