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# Expert Management of Complex Polytrauma

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ORTHOPAEDIC TRAUMA SERVICE

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A Combined Program of Hospital for Special Surgery and  
NewYork-Presbyterian Hospital/Weill Cornell Medical Center

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HOSPITAL  
FOR  
**SPECIAL  
SURGERY**



 **NewYork-Presbyterian Hospital**  
 **Weill Cornell Medical Center**

# Orthopaedic Trauma Service

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*The collaboration of two world-class academic hospitals maximizes outcomes for our most injured patients.*



The Orthopaedic Trauma Service is a combined service of Hospital for Special Surgery and NewYork-Presbyterian Hospital/Weill Cornell Medical Center. This collaboration brings together the resources and services that are unique to a fully dedicated musculoskeletal hospital with the multiple medical, surgical and critical care specialties that are available at a tertiary academic medical center—a relationship that maximizes outcomes for our most injured patients.

As a Level 1 Trauma Center, the Emergency Department of NewYork-Presbyterian/Weill Cornell is one of the busiest in New York City offering a full range of resources necessary to care for critically ill patients. Often, these patients require the expertise of both orthopaedic trauma and critical care surgeons who are specially trained to address multiple organ system injuries and high-risk surgical cases.

The orthopaedic trauma team provides 24-hour coverage and collaborates with specialists in critical care, plastic surgery, neurosurgery, oral and maxillofacial surgery and other disciplines, as needed, to manage complex and challenging polytrauma cases.

Emergency medicine physicians and orthopaedic surgeons throughout the country and from around the world refer patients to our program for evaluation and treatment of both acute and subacute traumatic injuries, as well as the sequelae of trauma. These include:

- complex polytrauma involving injuries to the pelvis and the acetabulum—among the most life-threatening and difficult to treat
- the repair of articular fractures
- nonunion and malunion fractures that do not heal or that have healed poorly
- fractures in the elderly
- complex osteotomies to correct deformity or congenital dysplasia
- orthopaedic infections
- complications from prior surgeries

# Expertise and Experience

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*An international specialty referral center under the direction of David L. Helfet, MD, Chief, and Dean G. Lorich, MD, Associate Director, the Orthopaedic Trauma Service draws patients with multifaceted injuries from around the world.*



## *Orthopaedic Trauma Service*

David L. Helfet, MD  
*Chief*

Dean G. Lorich, MD  
*Associate Director*

Bryan T. Kelly, MD

Joseph M. Lane, MD

John P. Lyden, MD

As a service specifically dedicated to orthopaedic trauma, we are prepared on every level to manage complex polytrauma patients. With a team of five highly experienced orthopaedic trauma surgeons, working closely with orthopaedic nurses and technicians, bone pathologists, pain management physicians, and, in particular, musculoskeletal imaging specialists, the Orthopaedic Trauma Service offers an unparalleled breadth of nationally recognized expertise.

At the same time, our operating rooms are designed with advanced technologies for performing complex orthopaedic procedures and are equipped with specially designed implants, plates and screws, clamps and other instrumentation necessary to repair injuries to the bone and soft tissue. Our use of lesser invasive approaches includes percutaneous insertion of newly designed fixation plates and screws to minimize disruption of the blood supply to the bone and lessen soft tissue injury. This, in turn, leads to improved fracture healing and a quicker rehabilitation for patients.

The 20-bed Surgical Intensive Care Unit at NewYork-Presbyterian/Weill Cornell is staffed by skilled critical care surgeons and nurses, complemented by respiratory therapists, phlebotomists, and other healthcare professionals trained to care for victims of severe trauma. Our staff follows the most stringent infection control policies and can provide patients with state-of-the-art therapies at the bedside.

Fractures in the elderly represent a high priority focus. Older adults are much more vigorous today. As a result, our service is treating not only the frail elderly who have injuries due to falls, but also those older adults who are injured pursuing sports and other high energy activities.

The Orthopaedic Trauma Service offers referring physicians direct and immediate access to our program, providing emergency transport, if required, around the clock. During all aspects of care, we communicate regularly with the referring physician about the patient's condition and any follow-up care.



### To Refer a Patient

If your patient requires an evaluation and/or treatment for an acute or subacute traumatic injury, or if you need to arrange emergency transport, please call the Orthopaedic Trauma Service at any time day or night, (212) 606-1888 or (212) 746-4509.

## Questions and Answers

*Our orthopaedic trauma team pursues new information in the laboratory and explores innovative techniques and technology in the clinical arena, always with the goal of improving patient outcomes.*

The Orthopaedic Trauma Service has a large research component incorporating both clinical and basic science initiatives that seek to answer the most challenging questions of bone healing and repair. Among the topics our researchers are studying are the quality of bone, its underlying biology, and how bone forms to heal fractures.

In the clinical arena, our clinician scientists are pursuing innovative techniques for managing nonunion and malunion fractures of the acetabulum. Multiple studies are also underway investigating ways to restore bone in the elderly and to better repair fractures in this population. These efforts focus on compounds that would restore the integrity of the bone in the area of the fracture; new designs for implants that facilitate improved fixation in poor quality bone; and the effect of pharmaceutical agents, including some hormones, that may not only promote fracture healing, but also offer restoration of bone quality in the elderly. To help us learn more about these conditions, we have established a comprehensive geriatric fracture database.

Some trauma patients with head injuries may develop heterotopic ossification in which they produce more bone than is needed. We are seeking to learn how to prevent heterotopic ossification, as well as define why it occurs and how to make it come about in people who do not heal.

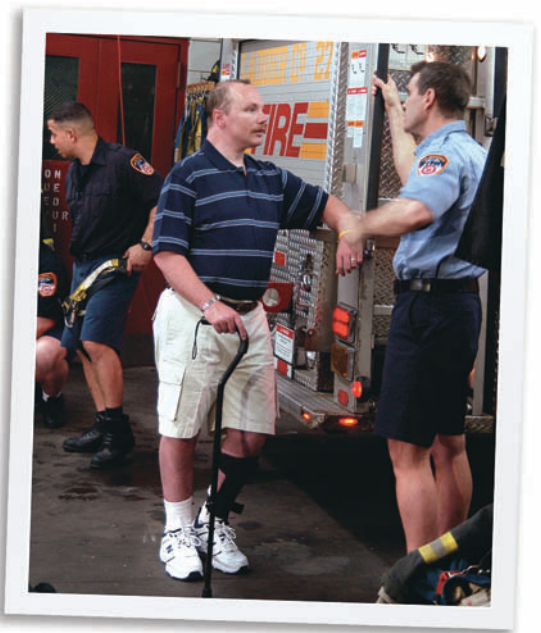
We are also working with computer navigation companies to develop software for the operating room that is tailored to the needs of orthopaedic surgeons and their patients.

# Repair and Restore

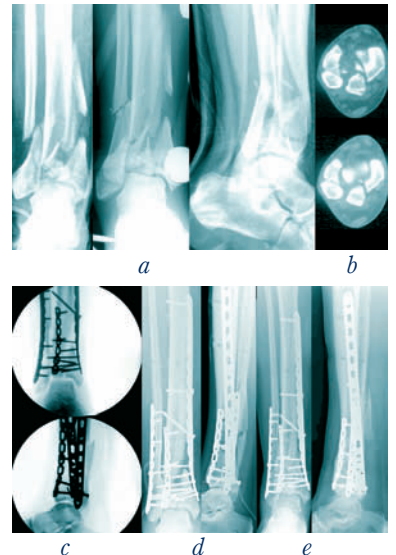
The Orthopaedic Trauma Service cares for patients of all ages and every walk of life with traumatic injuries resulting from sports-related activities, falls, automobile accidents, and other catastrophic events. We also are widely recognized for our care of firefighters and police officers injured in the line of duty.

Eugene Stolowski lived his life fighting fires. But on January 23, 2005, he found himself instead fighting for his life. The then 33-year-old member of the New York City Fire Department was on the fourth floor of an apartment building when his unit was rapidly overcome by a spreading blaze. The only way out was through the windows, and they had no choice but to jump from the building. Stolowski landed on the pavement 50 feet below sustaining multiple injuries, including an atlanto-occipital dislocation, as well as a shattered pelvis, a severe distal tibial pilon fracture and associated fibula fracture. He was given a five percent chance of survival.

NewYork-Presbyterian/Weill Cornell neurosurgeon Roger Hartl, MD, performed surgery to repair the spinal cord injury; orthopaedic trauma surgeons David Helfet, MD, and Dean Lorich, MD, addressed the pelvic fractures and the fractures in Stolowski's leg. A spanning external fixator was placed for initial fixation with concurrent fibula ORIF, including placement of a locking compression plate (LCP). Open reduction and internal fixation of the pilon fracture was performed one week later through an anteromedial approach, with placement of plates and screws—LCP medially and pelvic reconstruction plate anterolaterally. After nine surgeries and nearly eight months in the hospital, Stolowski walked out of NewYork-Presbyterian/Weill Cornell on September 14, 2005.



*Eugene Stolowski, Ladder Co. 27*



- a) Anteroposterior, mortise, and lateral X-rays of the right ankle following placement of a spanning external fixator. The radiographs reveal a severe distal tibia pilon fracture.*
- b) CT scan images delineating the articular fracture lines.*
- c) Intraoperative fluoroscopic images confirming adequate reduction and hardware placement.*
- d) AP and lateral X-rays immediately following ORIF.*
- e) AP and lateral X-rays one year following ORIF illustrating a healed pilon fracture with maintenance of joint space and hardware.*

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### **Orthopaedic Trauma Service**

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Weill Cornell Medical Center**  
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### **Hospital for Special Surgery**

535 East 70th Street  
New York, NY 10021

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### **Information and Referral**

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