
Pain and Combat Injuries in Soldiers Returning from Operations Enduring and Iraqi Freedom

Matthew J. Bair, MD, MS

Physician Scientist, Roudebush VA Medical Center of Excellence and Regenstrief
Institute, Inc

Associate Professor of Medicine, IU School of Medicine, Indianapolis

Short Video

<http://www.clermontyellow.accountsupport.com/flash/UntilThen.swf>

<http://www.youtube.com/watch?v=t9m06QFxb3o>

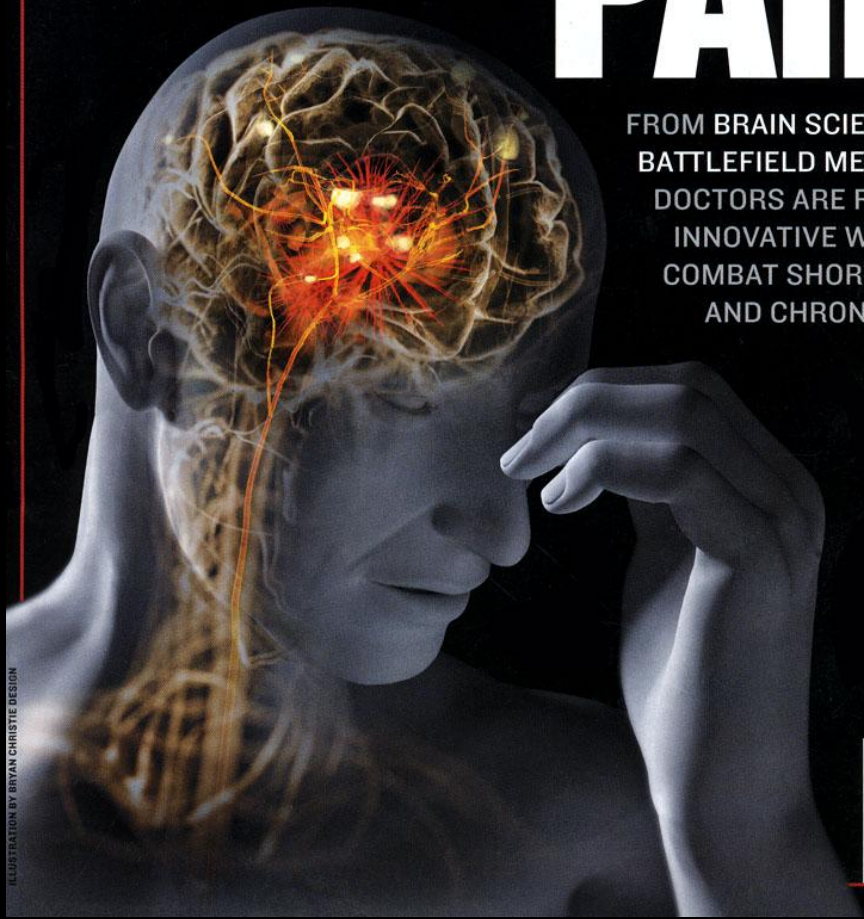
BUSH'S GONZALES GAMBLE THE GLOBAL WATER CRISIS

Newsweek

June 4, 2007

newsweek.msnbc.com

THE NEW WAR ON PAIN



FROM BRAIN SCIENCE TO
BATTLEFIELD MEDICINE,
DOCTORS ARE FINDING
INNOVATIVE WAYS TO
COMBAT SHORT-TERM
AND CHRONIC PAIN

ILLUSTRATION BY BRYAN CHRISTIE DESIGN

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Pain is a Critical Health Problem among Veterans

- ▶ **Pain is one of the most common complaints in VA primary care**
 - ▷ approximately 50% of patients
- ▶ **Expected to be even more common and problematic in OEF/OIF veterans**

The Changing Nature of Warfare



- ▶ High-explosive blast injuries, gunshot wounds, land mines, MVAs
- ▶ Higher intensity of conflicts: more casualties than in the PGW

The Changing Nature of Warfare

- ▶ Injuries changing
→ improved protective gear
- ▶ Extended duration of hostilities
- ▶ Long & repeated deployments



The Changing Nature of Warfare



"In [Iraq], more than 91 percent of all casualties have survived their wounds, the highest survivability rate of any U.S. conflict."

Maj. Gen. Joseph G. Webb, Army
deputy surgeon general

The Changing Nature of Warfare

- ▶ **Improvements in protective gear with Kevlar body armor and helmets shield vital organs, improving survival rates.**
- ▶ **The majority of combat casualties involve injuries to vulnerable extremities that can sustain extensive tissue damage:**
 - ▷ **major nerves, musculoskeletal structures, vasculature and soft tissues often resulting in mangled limbs and traumatic amputations.**

(Mabry et al., 2000; Polly et al., 2004).



The Changing Nature of Warfare

- ▶ Changing demographics
 - ▷ Large # of Reserve and National Guard
 - ▷ Women higher % deployed troops than in any previous war



Retrospective cohort study of 970 OEF/OIF Veterans (Clark, Girona, Walker)

- ▶ 47% had pain
- ▶ Of these, 28% had moderate to severe
 - ▷ Most common: low back, lower and upper extremities, cervical
 - ▷ Associated with functional limitations (pain-related disability)

**Are you seeing many Veterans in
your practice?**

**How can we welcome home our
veterans?**

Simple “Intervention”

Say: “Thank you for serving”

A Day in the life of a soldier...



Caring for Returning Veterans

- ▶ To better care for returning veterans, we must first understand
 - ▷ Where our patients have been and what they have experienced:
 - ▷ Trauma of war
 - ▷ Physical and Emotional Stressors

Caring for Returning Veterans

- ▶ Ask for details of deployment, location, exposures, injuries
- ▶ Ask about stressors and coping responses
- ▶ Ask about psychosocial factors
- ▶ Assess substance use
- ▶ Ask about interpersonal violence

Most Common Injuries in Returning Veterans

▶ Musculoskeletal –

- ▷ Sports injuries, overuse syndromes, back injuries from
- ▷ carrying weapons and backpacks, traumatic injuries

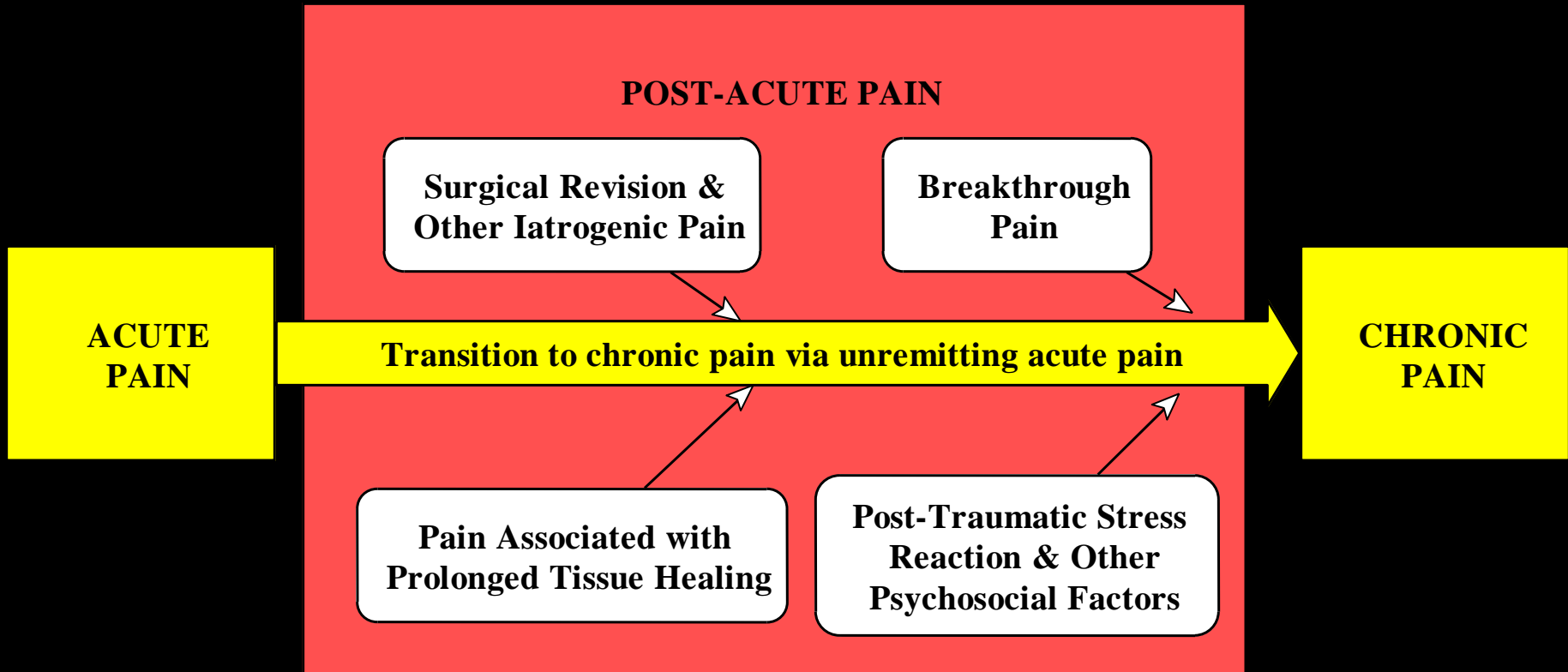
▶ Psychiatric –

- ▷ Re-integration problems, PTSD, insomnia, isolation
- ▷ traumatic brain injury, depression

Caring for Returning Veterans

- ▶ **VA & community health system must treat post-injury pain as a priority after military discharge:**
 - ▷ **To prevent pathophysiology:**
 - ▶ **Stop neuro-plastic changes, central sensitization**
 - ▶ **Arrest musculoskeletal dysfunction**

Severe Polytrauma Pain: Possible Course



Phases of Military Care: Injured soldiers

WAR ZONE EMERGENCY CARE:

Life support, stabilization



TRANSPORT CARE

SECONDARY CARE:

Initial surgery and further stabilization



TRANSPORT CARE

TERTIARY CARE:

*Definitive injury care, restorative surgery,
begin rehabilitation*

Caring for Returning Veterans

- ▶ **Prevent disability**
 - ▷ **Provide effective pain control**
 - ▷ **Rapidly restore function**



Caring for Returning Veterans

- ▶ **Post-injury pain as a priority after military discharge:**
 - ▷ **To prevent social consequences:**
 - ▶ **Job loss**
 - ▶ **Relationship loss**
 - ▷ **To prevent psychopathology**
 - ▶ **PTSD**
 - ▶ **Depression**
 - ▶ **Substance abuse**

Unique Challenges in Caring for these Veterans

- ▶ **VA and health system not accustomed to treating survivors of massive wounds from blast injuries**
 - ▷ **Head injuries causing other sensory disturbances besides pain**

Unique Challenges in Caring for these Veterans

- ▶ **Disfigurement and social stigma**
- ▶ **Cognitive and psychological damage**
- ▶ **Neuropsychiatric impairments**
- ▶ **Many pain generators**
 - ▷ **Polytrauma requiring rehabilitation**

Problems of uncontrolled pain following traumatic injury*

- ▶ Immediate suffering
- ▶ Causing or worsening of chronic pain states
 - ▷ Hyper-stimulation of central neuronal pathways
 - ▷ Neural plasticity in the spinal cord and brain
 - ▷ Neuropathological remodeling and chronic pain states

* **Early, Continuous, and Restorative Pain Management in Injured Soldiers: The Challenge Ahead**
RM Gallagher, Polomano, Pain Medicine 2006;7(4):284-286

Sequelae of uncontrolled pain in Veterans

- ▶ “Stress of prolonged uncontrolled pain and suffering and the stress of combat experiences contribute to problems in psychological adjustment and mental health disorders such as PTSD, depression and substance abuse following injury”

* **Early, Continuous, and Restorative Pain Management in Injured Soldiers: The Challenge Ahead**
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Treatment Principles

- ▶ **Evaluate Pain**
 - ▷ **Unless you ask they won't tell you! (Walker et al, 2007)**
 - ▷ **Variable symptoms**
 - ▷ **No cure, slow recovery rates**
 - ▷ **High medical co-morbidities**



Treatment Principles

- ▶ High co-morbid psychiatric disorder
- ▶ Increased risk of suicide (Tang Psych Med 2006)
- ▶ High violence risk



Treatment Principles

- **Cognitive impairments – puts premium on physical examination for pain**
- **Pain differential:**
 - **Pain generators: tissues activating nociception**
 - **Pain mechanisms: neural, visceral, nociceptive, myofascial**
 - **Pain-related functional impairments**

Treatment Principles

- ▶ **Psychosocial evaluation (Thorne 2007)**
 - ▷ **Evaluate context:**
 - ▶ **Combat vs non-combat**
 - ▶ **Re-entry into non-combat environment**
 - ▶ **Family**
 - ▶ **Work**
 - ▶ **Social supports: friendships, faith, hobbies**
 - ▶ **Changed world view**
 - ▶ **Changed self-concept**

Treatment Principles

- **Assess for:**

- **Anxiety / PTSD**

- **Depression**

- **Substance abuse**

- **Family functioning**

- **Occupational functioning**

**Recent animal and clinical evidence
suggests that better pain care after
injury leads to better outcomes**



Pain 124 (2006) 321-329

PAIN

www.iasp.com/locate/pain

CLINICAL EVIDENCE?

567 severe single extremity trauma patients

- **Predictors of poor outcome before injury include:**
 - Alcohol abuse 1 month before injury (Marker, depression & substance abuse)
 - Older age, lower education, low self efficacy (Gallagher et al *Pain* 1989)
- **Predictors of poor outcome at 3 months post-injury**
 - Acute pain intensity, anxiety, depression and sleep disturbance

BRIEF RESEARCH REPORTS

Responding to Challenges in Modern Combat Casualty Care: Innovative Use of Advanced Regional Anesthesia

Alexander Stojadinovic, MD,* Alyson Auton, BA,[†] George E. Peoples, MD,*
Geselle M. McKnight, CRNA,[†] Cynthia Shields, MD,[†] Scott M. Croll, MD,[†] Lisa L. Bleckner, MD,[†]
James Winkley, MD,[†] Mary E. Maniscalco-Theberge, MD,* and Chester C. Buckenmaier III, MD[†]

*Department of Surgery; [†]Army Regional Anesthesia & Pain Management Initiative, Department of Anesthesiology, Walter Reed Army Medical Center, Washington, DC, USA

BJA RELEASE

British Journal of Anaesthesia Page 1 of 4
doi:10.1093/bja/ael269

BJA

Continuous peripheral nerve block in combat casualties receiving low-molecular weight heparin



**C. C. Buckenmaier III, C. H. Shields, A. A. Auton, S. L. Evans, S. M. Croll, L. L. Bleckner,
D. S. Brown and A. Stojadinovic**

*Army Regional Anesthesia and Pain Management Initiative, Anesthesia and Operative Service,
Walter Reed Army Medical Center, Washington, DC, USA*

**Corresponding author: Walter Reed Army Medical Center, Building 2, Ward 44, Room 4418, 6900
Georgia Avenue, NW, Washington, DC 20307-5001, USA. Email: chester.buckenmaier@na.amedd.army.mil*

CASE DISCUSSION

Useful Web Sites

- ▶ General VA Benefits and information
http://www1.va.gov/health_benefits/ General VA site for returning soldiers with many useful links
- ▶ <http://www.seamlesstransition.va.gov/>
- ▶ <http://www.ncptsd.va.gov/topics/war.html>
 - ▷ PTSD information for clinicians and patients

Useful Web Sites

- ▶ <https://www.aw2.army.mil/>
 - ▷ Army Wounded Warrior Program-oriented more toward combat injured veterans
- ▶ Walter Reed Medical Center main site
<http://www.wramc.amedd.army.mil/>
- ▶ Post Deployment Web site
 - ▷ <http://www.pdhealth.mil/clinicians/default.asp>



QUESTIONS/COMMENTS?

mbair@iupui.edu