

JTACS AUGUST TABLE OF CONTENTS

'BEST OF' AUGUST ARTICLES

BEST OF TRAUMA ARTICLE

High-Ratio Plasma Resuscitation Decreases Mortality in Moderate Traumatic Brain Injury

Study Population	Results	Conclusions
 Patients age 18 years or older  Suspected TBI  Received 1 to 5 blood product units	High FFP proportions ↓ 6-hour mortality for moderate and severe TBI ↓ 30-day mortality for moderate TBI Low FFP proportions ↓ 6-hour mortality for moderate and severe TBI Not associated with 30-day mortality	 Effect of FFP on mortality varies with TBI severity and proportion of FFP given  Moderate TBI patients may benefit most from high proportions of FFP

Arcieri T et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.00000000000005032

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HIGH-RATIO PLASMA RESUSCITATION DECREASES MORTALITY IN MODERATE TRAUMATIC BRAIN INJURY

[HTTPS://WWW.OVID.COM/JNLS/JTRAUMA/ABSTRACT/10.1097/TA.00000000000005032-HIGH-RATIO-PLASMA-RESUSCITATION-DECREASES-MORTALITY-IN-MODERATE-TRAUMATIC-BRAIN-INJURY?REDIRECTIONSOURCE=FULLTEXTVIEW](https://www.ovid.com/jnls/jtrauma/abstract/10.1097/TA.00000000000005032-HIGH-RATIO-PLASMA-RESUSCITATION-DECREASES-MORTALITY-IN-MODERATE-TRAUMATIC-BRAIN-INJURY?REDIRECTIONSOURCE=FULLTEXTVIEW)



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Every Hour Counts: Venous Thromboembolism Prophylaxis After Spinal Trauma

Spinal Trauma Increases Risk Of VTE	46,868 PATIENTS GROUPED BY TIME FROM ADMISSION TO FIRST DOSE VTEp	Early VTEp Was Associated With:
 Optimal VTEp Timing Remains Unclear	NO VTEp EARLY (<24 HOURS) INTERMEDIATE (24-72 HOURS) LATE (>72 HOURS)	 33-35% Lower VTE Risk  Preoperative VTEp Was Associated With: 35% Lower Mortality

Campbell A et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.00000000000004952

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EVERY HOUR COUNTS: VENOUS THROMBOEMBOLISM PROPHYLAXIS AFTER SPINAL TRAUMA

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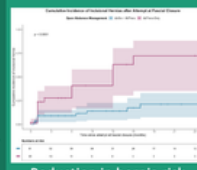
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BEST OF EGS

Non-invasive Fascial Traction Improves Primary Fascial Closure and Reduces the Incidence of Incisional Hernia in Open Abdomens.

Retrospective Cohort Study	Two management strategies, 143 patients:	
Trauma and Emergency General Surgery Patients Outcomes: Primary Fascial Closure and Delayed Incisional Hernias	Negative Pressure Wound Therapy (NPWT) only vs. NPWT + Non-Invasive Fascial Traction. 72.4 % Closure with NPWT only vs. 94.1% Closure with NPWT + Non-Invasive Fascial Traction.	 Reduction in hernia risk 60.7% RRR and 24.8 ARR.

Fellows T et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.00000000000004990

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NON-INVASIVE FASCIAL TRACTION IMPROVES PRIMARY FASCIAL CLOSURE AND REDUCES THE INCIDENCE OF INCISIONAL HERNIA IN OPEN ABDOMENS

[HTTPS://WWW.OVID.COM/JNLS/JTRAUMA/FULLTEXT/10.1097/TA.00000000000004990-NONINVASIVE-FASCIAL-TRACTION-IMPROVES-PRIMARY-FASCIAL-CLOSURE-AND-REDUCES-THE-INCIDENCE-OF-INCISIONAL-HERNIA-IN-OPEN-ABDOMENS](https://www.ovid.com/jnls/jtrauma/fulltext/10.1097/TA.00000000000004990-NONINVASIVE-FASCIAL-TRACTION-IMPROVES-PRIMARY-FASCIAL-CLOSURE-AND-REDUCES-THE-INCIDENCE-OF-INCISIONAL-HERNIA-IN-OPEN-ABDOMENS)

Combined N-acetylcysteine and Tranexamic Acid Attenuate Acidosis and Fibrinolysis in a Swine Polytrauma Model

Experimental Polytrauma Model	Key Findings	Conclusion
 36 Males Swine Polytrauma (Femur Fx)  Shock 60% Blood Volume Loss  Intervention RI Vs Nac Vc: Txa Vs: Nac+txa  Protocol Resuscitation + Liver Injury ("2nd Hit")	Metabolic Recovery (pH & Base Excess)  Fibrinolysis (ROTEM Max Lysis) 	 Combined NAC + TXA during early resuscitation improved acid-base status and attenuated fibrinolysis compared with isolated therapies, supporting further evaluation as an adjunct in damage control resuscitation.

Cardoso J et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.00000000000004965

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COMBINED N-ACETYL-CYSTEINE AND TRANEXAMIC ACID ATTENUATE ACIDOSIS AND FIBRINOLYSIS IN A SWINE POLYTRAUMA MODEL

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WHAT YOU NEED TO KNOW PNEUMATOSIS INTESTINALIS: BENIGN OR DIRE?

PNEUMATOSIS INTESTINALIS: BENIGN OR DIRE? WHAT YOU NEED TO KNOW

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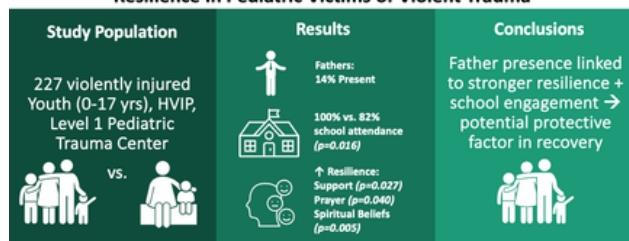
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The Impact of Fathers and Male Role Models on Recovery and Resilience in Pediatric Victims of Violent Trauma



Lang K et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.00000000000004951

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THE IMPACT OF FATHERS AND MALE ROLE MODELS ON RECOVERY AND RESILIENCE IN PEDIATRIC VICTIMS OF VIOLENT TRAUMA

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From Fellowship to the Frontline: A Survey of Military Trauma Training Experience by the Military Deployment Readiness Assessment of Fellowship Training (DRAFT) Task Force



Dilday J et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.00000000000004953

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FROM FELLOWSHIP TO THE FRONTLINE: A SURVEY OF MILITARY TRAUMA TRAINING EXPERIENCE BY THE MILITARY DEPLOYMENT READINESS ASSESSMENT OF FELLOWSHIP TRAINING (DRAFT) TASK FORCE

[HTTPS://WWW.OVID.COM/JNLS/JTRAUMA/ABSTRACT/10.1097/TA.00000000000004953-FROM-FELLOWSHIP-TO-THE-FRONTLINE-A-SURVEY-OF-MILITARY-TRAUMA?REDIRECTIONSOURCE=FULLTEXTVIEW](https://www.ovid.com/jnls/jtrauma/abstract/10.1097/TA.00000000000004953-FROM-FELLOWSHIP-TO-THE-FRONTLINE-A-SURVEY-OF-MILITARY-TRAUMA?REDIRECTIONSOURCE=FULLTEXTVIEW)

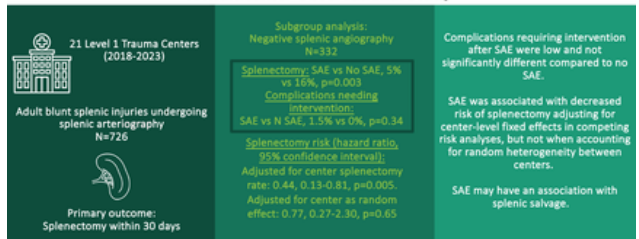
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WHAT YOU NEED TO KNOW MODERN MANAGEMENT OF ABDOMINAL AORTIC INJURIES

MODERN MANAGEMENT OF ABDOMINAL AORTIC INJURIES: WHAT YOU NEED TO KNOW

[HTTPS://WWW.OVID.COM/JNLS/JTRAUMA/ABSTRACT/10.1097/TA.00000000000004984-MODERN-MANAGEMENT-OF-ABDOMINAL-AORTIC-INJURIES-WHAT-YOU-NEED-TO?REDIRECTIONSOURCE=FULLTEXTVIEW](https://www.ovid.com/jnls/jtrauma/abstract/10.1097/TA.00000000000004984-MODERN-MANAGEMENT-OF-ABDOMINAL-AORTIC-INJURIES-WHAT-YOU-NEED-TO?REDIRECTIONSOURCE=FULLTEXTVIEW)

Is Splenic Artery Embolization Beneficial When Splenic Angiography is Negative? A Multicenter Observational Study



Yoo, Rachel et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.00000000000004974

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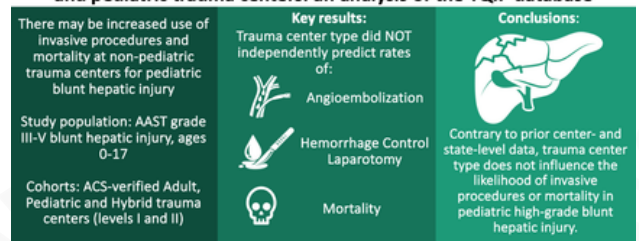
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IS SPLENIC ARTERY EMBOLIZATION BENEFICIAL WHEN SPLENIC ANGIOGRAPHY IS NEGATIVE? A MULTICENTER OBSERVATIONAL STUDY

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Management of pediatric high-grade blunt hepatic trauma at adult and pediatric trauma centers: an analysis of the TQIP database



Wallace M et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.00000000000005031

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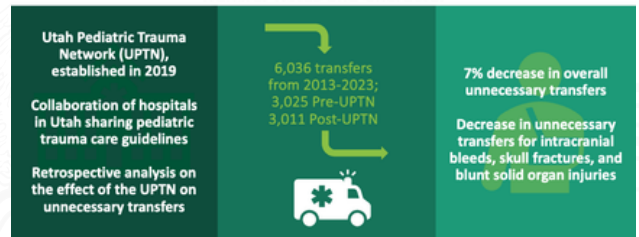
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MANAGEMENT OF PEDIATRIC HIGH-GRADE BLUNT HEPATIC TRAUMA AT ADULT AND PEDIATRIC TRAUMA CENTERS: AN ANALYSIS OF THE TQIP DATABASE

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Effect of a Statewide Pediatric Trauma Collaborative on Preventable Transfer Rates and Character



Scaife, J. et al. *Journal of Trauma and Acute Care Surgery*. DOI: 10.1097/TA.00000000000004922

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EFFECT OF A STATEWIDE PEDIATRIC TRAUMA COLLABORATIVE ON PREVENTABLE TRANSFER RATES AND CHARACTER

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Fragmentation of care (FOC): unplanned readmission to a non-index hospital

2019 Nationwide Readmissions Database

142,584 older adult trauma patients

27% had fragmented care

Lower income quartiles
Rural residence

90-day FOC

- 90-day mortality
- Readmission hospital length of stay
- Total hospital costs

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[HTTPS://WWW.OVID.COM/JNLS/JTRAUMA/ABSTRACT/10.1097/TA.00000000000004942-SOCIOECONOMIC-DISPARITIES-AND-ACCESS-TO-CARE-FRAGMENTATION?REDIRECTIONSOURCE=FULLTEXTVIEW](https://www.ovid.com/jnls/jtrauma/abstract/10.1097/TA.00000000000004942-socioeconomic-disparities-and-access-to-care-fragmentation?redirectionsource=fulltextview)

Study Population	Results	Summary
Unconventional War MASCAL Prolonged evacuation time 4-6 hours Deployment of far forward surgical unit 46 Casualties → 6 DOA 12 Casualties w/ 14 TQs 28 Casualties w/o TQs	Results 14 Tourniquets 93% TQs Converted 7% TQ Transitioned 31% Surgical Hemostasis 69% No surgical Intervention <i>All wounds "Pack and Press" before evacuation</i> <i>No deaths due to hemorrhage or PTAS</i>	- 31% of tourniquets applied required surgical intervention for hemostasis prior to a 4-6 hour transport - Far-forward surgical capability within a prolonged evacuation chain may reduce morbidity and mortality from tourniquet use

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<https://www.ovid.com/jnls/jtrauma/abstract/10.1097/TA.00000000000004949-high-and-tight-to-pack-and-press-prioritization-of?redirectionsource=fulltextview>

Current postoperative complication grading systems rely on treatment intensity rather than physiologic impact. Moreover, the baseline patient conditions are not considered. This may lead to a misclassification and overestimation of morbidity in general surgery

The Extended Post-operative Complication Score (EPCS) is a dual-axis framework that integrates baseline patient condition with the physiologic severity of postoperative events.

Extended Post-operative Complication Scoring-system (EPCS)

PATIENT BASELINE CONDITION SCORE (Y-axis):

- 1: Excellent
- 2: Good
- 3: Fair
- 4: Poor
- 5: Very poor

POST-OPERATIVE COMPLICATIONS (X-axis):

- GRADE I: Insidious
- GRADE II: Mild
- GRADE III: Moderate
- GRADE III: Severe
- GRADE IV

POST-OPERATIVE MORBIDITY (Top Left):

All these events are consequences that may result from a surgical procedure but are not causing disease or harm to the patient. Not representing a post-operative complication.

COMPLICATION SEVERITY (Diagonal):

DEATH (Far Right):

PHYSIOLOGIC IMPAIRMENT (Bottom):

- None
- Without physiological impairment
- With physiological impairment
- With physiological impairment and with potential impact on patient quality of life
- With physiological impairment and with potential impact on patient quality of life
- With the threshold of physiological impairment
- Relevant to the patient's quality of life

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Oxygen therapy and escalation of respiratory support in chest trauma

NIV vs HFNC
OR 0.72
95% CI 0.58–0.89

NIV vs COT
OR 0.42
95% CI 0.20–0.85

HFNC vs COT
OR 0.58
95% CI 0.29–1.16

NIV associated with lower escalation than COT and HFNC

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[HTTPS://WWW.OVID.COM/JNLS/JTRAUMA/ABSTRACT/10.1097/TA.0000000000004987-NONINVASIVE-RESPIRATORY-SUPPORT-STRATEGIES-IN-CHEST-TRAUMA-A?REDIRECTIONSOURCE=FULLTEXTVIEW](https://www.ovid.com/jnls/jtrauma/abstract/10.1097/TA.0000000000004987-noninvasive-respiratory-support-strategies-in-chest-trauma-a?redirectionsource=fulltextview)

Background

SkM has procoagulant phenotype.

Decrease in SkM levels has been observed in animal models of tissue injury.

Study population

Orthopedic Trauma patients (n = 10)
Sample collection at: Admission and 6 weeks later

Pig muscle-injury model (n = 12)
Sample collection at: Before and 24 hours after trauma

Results

After injury

SkM ↓
Myoglobin ↑

SkM binds to fibrin

Legend: SkM: skeletal myosin

Clot

- Immunoblotting
- Fluorescence imaging
- Fibrinolysis assay

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[HTTPS://WWW.OVID.COM/JNLS/JTRAUMA/ABSTRACT/10.1097/TA.00000000000004946-CHARACTERIZATION-OF-THE-BINDING-OF-SKELETAL-MUSCLE-MYOSIN-TO?REDIRECTIONSOURCE=FULLTEXTVIEW](https://www.ovid.com/jnls/jtrauma/abstract/10.1097/TA.00000000000004946-characterization-of-the-binding-of-skeletal-muscle-myosin-to?redirectionsource=fulltextview)

The proportion of trauma patients on prehospital anticoagulant or antiplatelet (AC/AP) therapy is increasing.

Patients with high-grade, blunt splenic injuries
TQIP, 2017-2021

↓

Compared FNOM rates

Stratified by:
Observation only
Early (<6 hrs) angioembolization
Late (>6 hrs) angioembolization

Patients on prehospital AC/AP had a higher FNOM rate but prehospital AC/AP alone was not a predictor for FNOM.

Prehospital AC/AP status alone should not preclude a trial of NOM for patients who are otherwise candidates for this pathway.

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[HTTPS://WWW.OVID.COM/JNLS/JTRAUMA/ABSTRACT/10.1097/TA.00000000000004981-WHEN-BLOOD-RUNS-THIN-A-NATIONAL-ANALYSIS-OF-FAILURE-OF?REDIRECTIONSOURCE=FULLTEXTVIEW](https://www.ovid.com/jnls/jtrauma/abstract/10.1097/TA.00000000000004981-when-blood-runs-thin-a-national-analysis-of-failure-of?redirectionsource=fulltextview)

End-tidal carbon dioxide, measured noninvasively and continuously, reflects the integrated balance of ventilation, perfusion, and aerobic metabolism.

Several studies highlight the prognostic value of capnography in trauma patients.

Hypothesis: We hypothesize that prehospital ETCO₂ monitoring improves triage accuracy and enhances early patient management.

44 studies screened → 8 studies included

2407 patients

732 Low End-Tidal CO₂ 1675 Normal/High End-Tidal CO₂

- Lower end-tidal CO₂ levels were associated with a markedly increased risk of all-cause mortality.
- Lower end-tidal CO₂ levels were associated with increased odds of transfusion.
- Current literature suggests a potential role for end-tidal CO₂ in trauma risk stratification.

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[HTTPS://WWW.OVID.COM/JNLS/JTRAUMA/ABSTRACT/10.1097/TA.00000000000004968-END-TIDAL-CARBON-DIOXIDE-AS-A-PREDICTOR-OF-MORTALITY-IN?REDIRECTIONSOURCE=FULLTEXTVIEW](https://www.ovid.com/jnls/jtrauma/abstract/10.1097/TA.00000000000004968-END-TIDAL-CARBON-DIOXIDE-AS-A-PREDICTOR-OF-MORTALITY-IN?REDIRECTIONSOURCE=FULLTEXTVIEW)

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READ THE ARTICLE

**AMERICAN ASSOCIATION FOR THE
SURGERY OF TRAUMA/AMERICAN
COLLEGE OF SURGEONS-COMMITTEE
ON TRAUMA CLINICAL CONSENSUS
STATEMENT ON THE MANAGEMENT
OF PATIENTS WITH RIB FRACTURES**

[HTTPS://WWW.OVID.COM/JNLS/JTRAUMA/ABSTRACT/10.1097/TA.00000000000005008-AMERICAN-ASSOCIATION-FOR-THE-SURGERY-OF-TRAUMAAMERICAN?REDIRECTIONSOURCE=FULLTEXTVIEW](https://www.ovid.com/jnls/JTRAUMA/ABSTRACT/10.1097/TA.00000000000005008-AMERICAN-ASSOCIATION-FOR-THE-SURGERY-OF-TRAUMAAMERICAN?REDIRECTIONSOURCE=FULLTEXTVIEW)

READ THE LETTER TO THE EDITOR

VIDEO VERSUS DIRECT LARYNGOSCOPY FOR TRACHEAL INTUBATION IN TRAUMA: A SECONDARY ANALYSIS OF THE DEVICE TRIAL

VIDEO VERSUS DIRECT LARYNGOSCOPY FOR TRACHEAL INTUBATION IN TRAUMA: A SECONDARY ANALYSIS OF THE DEVICE TRIAL

[HTTPS://WWW.OVID.COM/JNLS/JTRAUMA/ABSTRACT/10.1097/TA.00000000000005021-VIDEO-VERSUS-DIRECT-LARYNGOSCOPY-FOR-TRACHEAL-INTUBATION-IN?REDIRECTIONSOURCE=FULLTEXTVIEW](https://www.ovid.com/jnls/jtrauma/abstract/10.1097/TA.00000000000005021-video-versus-direct-laryngoscopy-for-tracheal-intubation-in?redirectionsource=fulltextview)

READ THE ARTICLE

DISPARITIES IN TRAUMA CARE: A WESTERN TRAUMA ASSOCIATION PANEL DISCUSSION ON SEX, FINANCIAL AND GEOGRAPHIC DISPARITIES IN TRAUMA CARE.

DISPARITIES IN TRAUMA CARE: A WESTERN TRAUMA ASSOCIATION PANEL DISCUSSION ON SEX, FINANCIAL, AND GEOGRAPHIC DISPARITIES IN TRAUMA CARE

[HTTPS://WWW.OVID.COM/JNLS/JTRAUMA/ABSTRACT/10.1097/TA.00000000000004983-DISPARITIES-IN-TRAUMA-CARE-A-WESTERN-TRAUMA-ASSOCIATION?REDIRECTIONSOURCE=FULLTEXTVIEW](https://www.ovid.com/jnls/jtrauma/abstract/10.1097/TA.00000000000004983-disparities-in-trauma-care-a-western-trauma-association?redirectionsource=fulltextview)

READ THE ARTICLE

REFINING NORMOXEMIA TARGETS IN ACUTE BURN CARE: OPPORTUNITIES BEYOND SUPPLEMENTAL OXYGEN-FREE DAYS

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