

# Paramedic – Evidence Based Medicine (P-EBP) Program

## Paramedic CAT (Critically Appraised Topic) Worksheet

**Title:** Formation of pressure ulcers (PU) in patients who required spinal immobilization

**Report By:** Stephen Ryan

**2<sup>nd</sup> Party Appraiser:** Jen Greene

### **Clinical Scenario:**

Paramedics arrive at the emergency department with a healthy 24 year old female who was involved in a motor vehicle accident. She received minor injuries but had been immobilized due to positive MOI. Staff states that there will be an offload delay of about 6 hours as there are critical patients waiting. The patient begins to complain that the collar is hurting her neck....

### **PICO (Population – Intervention – Comparison – Outcome) Question:**

In trauma patients, does the extended use of immobilization devices increase chances of pressure ulcer occurrence, severity and formation compared to non immobilized patients.

**Search Strategy:** (Pressure Ulcers) AND (Immobilization) AND (Trauma Patients)

**Search Outcome:** 41 search results

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## Relevant Papers:

AUTHOR, DATE	POPULATION: SAMPLE CHARACTERISTICS	DESIGN (LOE)	OUTCOMES	RESULTS	STRENGTHS/ WEAKNESSES
W, Ham., 2013	Nine experimental studies with healthy volunteers and in four clinical studies with trauma patients.	Systematic Review LOE 1	Formation of pressure ulcers PU's with the use of immobilization devices	6.8% - 38% Incidence of PU formation between stages 1-4 of PU development.	<p>+Study was reported following PRISMA guidelines</p> <p>+search strategy, study selection and quality appraisal were performed by two independent reviewers</p> <p>-literature searched not limited by publication dates</p> <p>-5 studies included that were published more than 15 years ago</p> <p>-generalizability of the result from studies with healthy volunteers to the population of trauma patients is limited</p>

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## Comments:

- none of the studies examined the effect of lateral head blocks on tissue interface pressure
- No studies that described the occurrence of pressure ulcers related to the application of spinal immobilization devices such as backboards or vacuum mattresses were found

**Consider:** *Why would you NOT change practice, based on this article?*

Although there is an increase risk of PU formation from prolonged use of immobilization devices. The benefits of the use of the equipment outweigh the risks. For example the use of a C-collar to protect a patient from a serious spinal cord injury would be more beneficial than preventing a PU by not placing a C-collar insitu.

## Clinical Bottom Line:

Immobilization with devices increases the risk for PU development. The incidence for C-collar PU's varies between 6.8% and 38% and the severity of the PU ranges from stages 1 to 4. Preventative interventions for the formation of PU's should include regular skin assessments, skin care and frequent positioning.

## References:

Wietske Ham, RN, CEN, MSc, Lisette Schoonhoven, PhD, RN, Marieke J. Schuurmans, PhD, RN, and Luke P.H. Leenen, PhD, MD, Utrecht, the Netherlands (2013): Pressure ulcers from spinal immobilization in trauma patients: A systematic review. J Trauma and Acute Surg. 76:4; 1131-1141