

REACT to Chest Trauma

The 5 main goals in managing a patient with chest injuries:

1. **R**apid appropriate referral
2. **E**arly mobility
3. **A**voidance of future problems
4. **C**ontrol of pain
5. **T**argeted nutrition

High risk features (go to step 3 below)

- ◆ Flail segments and multiple rib fractures (3+)
- ◆ Pneumothorax / Haemothorax
- ◆ Respiratory disease
- ◆ Obesity (BMI > 35)
- ◆ Nutritionally deficient
- ◆ Uncomplicated sternal fractures
- ◆ High energy impacts
- ◆ Uncontrolled pain
- ◆ Frailty scores > 4 (see over)
- ◆ Chest injury score >16 (see over)

Patient Sticker

If rib or sternal fractures identified **OR** a history of chest trauma with pain or difficulty in breathing suggests likely #, ACTION:

- FBC, U&E, coagulation, and a chest X-ray.
- Consider ordering a CT of the chest if there are 2 or more suspected rib fractures to help evaluate lung contusions.
- If considering admission, then refer to the appropriate team (e.g. orthopaedics/general surgical/care of the elderly).
- Admitted patients should be nursed on a ward capable of looking after block infusion pumps under the care of the admitting team.
- If a flail segment is present, refer to the cardiothoracic team at UHNM (Tel: 01782 715444).
- See the *Sheffield rib fracture management guideline* overleaf to use as a guide on who should be considered for rib fixation surgery. Contact the cardiothoracic team at UHNM (Tel: 01782 715444).
- Physiotherapy input as soon as analgesia is established. Call the on call physiotherapist if urgently required out of hours (Bleep 825 or via Switchboard).
- Record pain scores, respiratory rate and oxygen saturations.
- The aim is for the patient to be able to cough, deep breathe and mobilise with no more than mild pain.

Ongoing daily pain management - to be assessed every day

- Check that the analgesic plan continues to be adequate
- Check that the patient is comfortable enough to sleep adequately
- Check that the patient can comply with physiotherapy needs
- Ensure that oxygen requirement (if any) is improving
- If the clinical picture is deteriorating, or new requirements develop, then consider the development and management of lung contusions (early) or pneumonia (later).

STEP 1: No high risk features and mild to moderate pain

- Inform acute pain team
- Consider oxygen especially with the use of opioids.
- Consider the use of anti-emetics and laxative with the use of opioids
- Oral analgesia as per WHO analgesic pain ladder:
 - * Paracetamol 1g QDS PO or IV
 - * Ibuprofen 400mg TDS/QDS (avoid if age >70 or renal disease)
 - * Codeine 30-60mg QDS (avoid if age >70 or renal disease)
 - * Oral morphine 10-20mg 4 hourly **or** Oral IR Oxycodone (age >70, eGFR <45) 5-10mg 4 hourly

STEP 2: Moderate to severe pain

- Inform acute pain team
- Consider oxygen especially with the use of opioids.
- Consider the use of anti-emetics and laxative with the use of opioids
- Analgesia:
 - * Step 1 analgesia
 - * Initial: Morphine or Oxycodone 0.1mg/kg IV PRN titrated to effect
 - * Continuing: PCA morphine or fentanyl (as per Trust guidelines). Refer to ICU Registrar (Bleep 845 or ext. 1148) for consideration of regional analgesia (ensure coagulation and platelet counts available for anaesthetist's information)

STEP 3: High risk features and/or severe pain

- Refer to ICU Registrar (Bleep 845 or ext. 1148) for assessment of pain management (to include regional block if possible) and potential admission to ICU
- Inform acute pain team
- Consider transfer to major trauma centre due to high morbidity and mortality rates
- Ensure coagulation and platelet counts available for anaesthetist's information
- Regional block to include either:
 - SAP block with catheter (unilateral anterior/lateral #)
 - ESP block with catheter (any unilateral)
 - Epidural (bilateral)

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Clinical Frailty Scale



1 Very Fit – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.



7 Severely Frail – Completely dependent for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).



2 Well – People who have no active disease symptoms but are less fit than category 1. Often, they exercise or are very active occasionally, e.g. seasonally.



8 Very Severely Frail – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.



3 Managing Well – People whose medical problems are well controlled, but are not regularly active beyond routine walking.



9 Terminally Ill – Approaching the end of life. This category applies to people with a life expectancy <6 months, who are not otherwise evidently frail.



4 Vulnerable – While not dependent on others for daily help, often symptoms limit activities. A common complaint is being "slowed up", and/or being tired during the day.



5 Mildly Frail – These people often have more evident slowing, and need help in high order IADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.



6 Moderately Frail – People need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.

Chest Injury Score

Risk factor	Patient	Range	Score
Age	11-20	1	
	21-30	2	
	31-40	3	
	41-50	4	
	51-60	5	
	61-70	6	
	71-80	7	
	81-90	8	
	91-100	9	
Number of ribs fractured		3 points per rib	
Chronic lung disease	Yes	5	
Pre-injury anti-coagulant use	Yes	4	
Patient oxygen saturation (%)	95-100	0	
	90-94	2	
	85-89	4	
	80-84	6	
	75-79	8	
	70-74	10	
		Total	

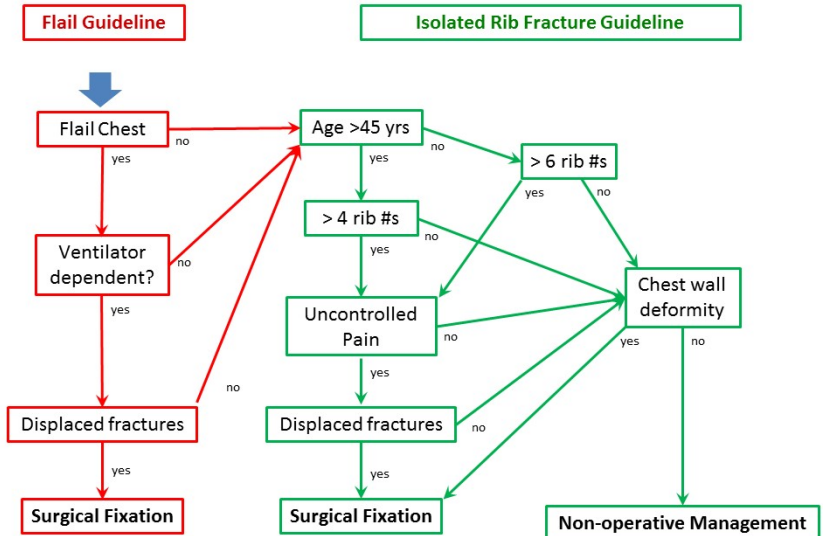
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The Shrewsbury and Telford Hospital
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Sheffield Rib Fracture Management Guideline



Scan for full guideline →

