Reducing the risk of rib fracture
Update issued: June 2022

Risk:
Rib fracture is an adverse event associated with manual therapy, in particular spinal manipulation to the thoracic or lumbar spine. The likely mechanism of injury is a thrust force applied to the thorax that exceeds the load tolerance of the patient. Reduced bone density is a relative contraindication to spinal manipulation due to the increased risk of osteoporotic fracture1.

Evidence:
A review of the CPIRLS database (2009-2019) identified a theme of rib injury/fracture. The majority of incidents occurred among female patients. All patients affected were over the age of 45 years; the modal age was 55-64 years. Most reports of suspected rib fracture involved manipulation of the thoracic spine with the patient lying prone, but some involved a lumbar side posture manipulation. Consideration of bone density had not been documented in the majority of cases where suspected rib fracture was reported.

Recommended actions:
- Before considering manual therapy, all patients aged 40 and over should be adequately and periodically screened for osteoporosis2.
- Chiropractors should be familiar with the numerous risk factors involved in osteoporosis including, but not limited to, gender, age, alcohol intake, lack of physical activity, long-term corticosteroid use, smoking and previous fragility fracture3.
- Chiropractors should seek to modify their care plan if a patient is at an increased risk of fracture4.
- Caution should be applied during direct manipulation of the thoracic spine in the prone position.

References:

Recommended reading:

Further information:
To read reported cases, and for further information about chiropractic patient safety incident reporting, visit https://www.cpirls.org.