

THORACIC SPINE

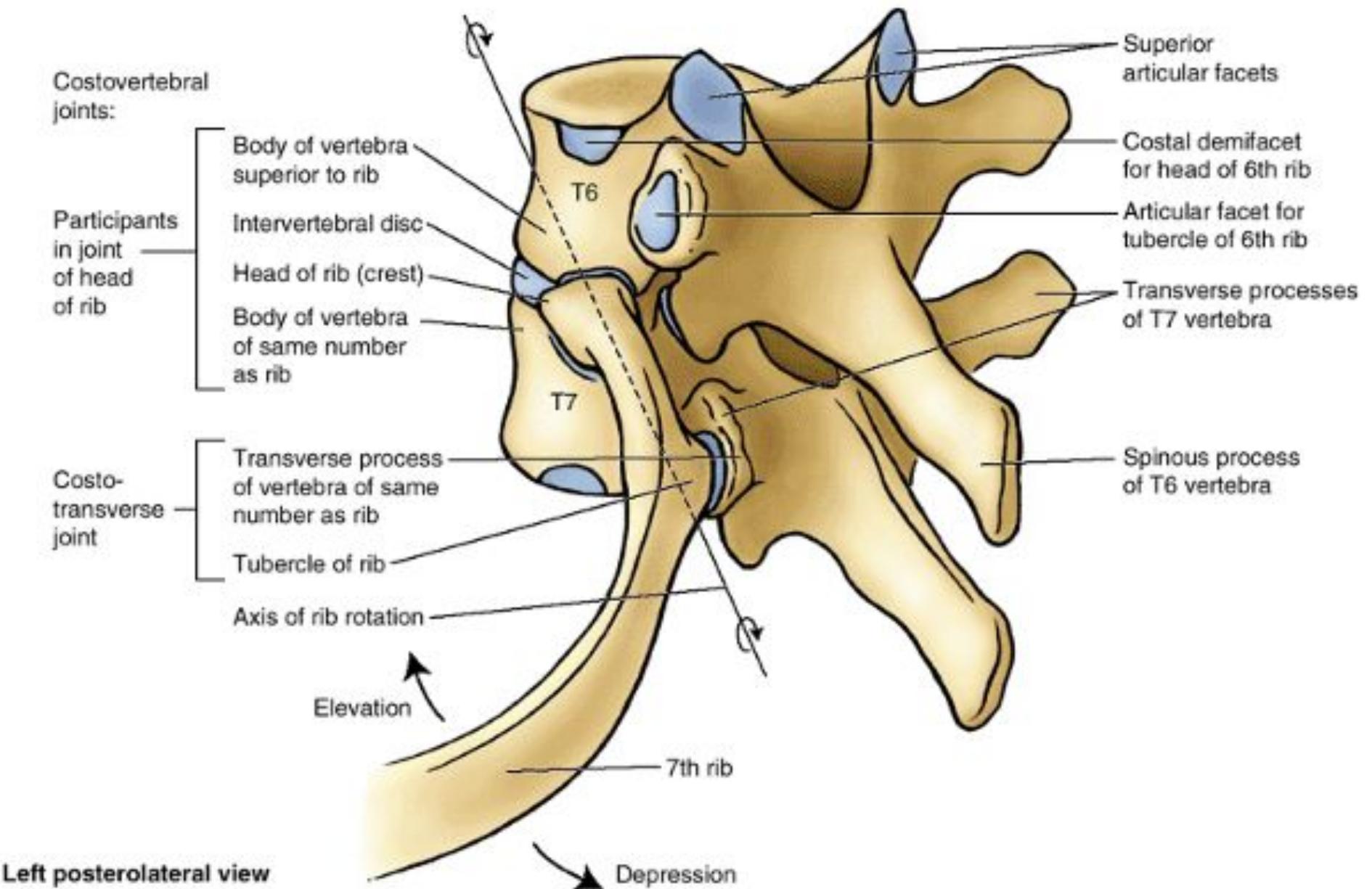
ANATOMY REVIEW

Costovertebral Joints

- Synovial plane joints
- Located between the ribs and the vertebral bodies
- 24 of these joints
- They are divided into 2 parts
 - Ribs 1, 10, 11, 12 only articulate with one vertebral body
 - Ribs 2 – 9 articulate with the 2 adjacent vertebral bodies and the intervertebral disc

Costotransverse Joints

- Synovial joints
- Located between the ribs and the transverse processes of the vertebra of the same level for ribs 1 – 10
- Because ribs 11 and 12 do not articulate with TVP the joint does not exist

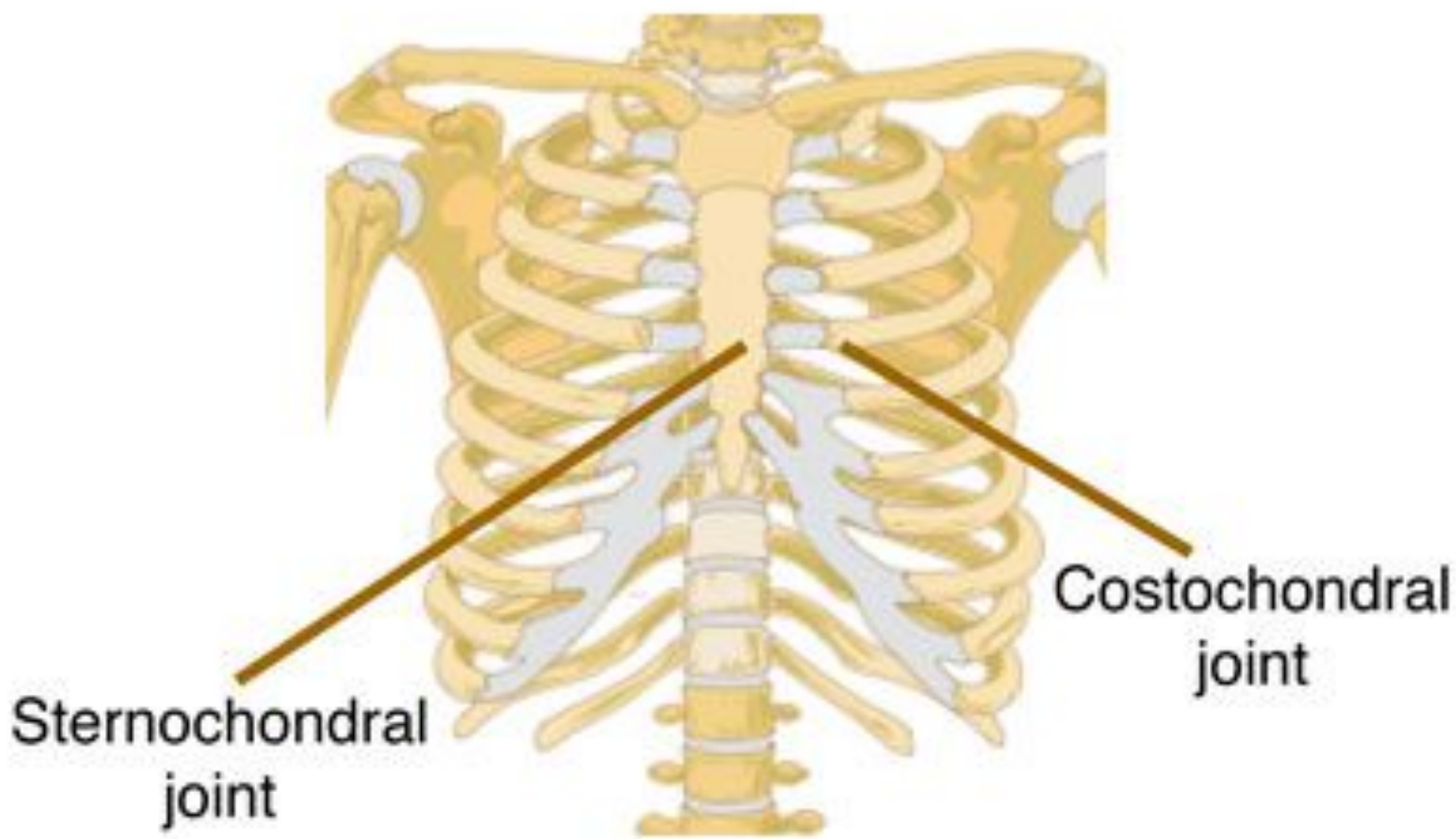


Costochondral Joints

- Lies between the ribs and the costal cartilages

Sternocostal Joints

- Lie between the sternum and the costal cartilage
- Joints 2-6 are synovial
- 1st costal cartilage is joined with the sternum by a synchondrosis



Facet Joints

- Make up the tri joint complex along with the disc between the vertebra
- Resting position is midway between flexion and extension
- Close packed position is extension
- Capsular pattern is side flexion and rotation equally limited, then extension

MOTIONS

AROM

Make sure that you are assessing just the thoracic spine and not lumbar or hips, client can be sitting to minimize this. Have the client place their arms in front of them or on the opposite shoulders.

Forward flexion 20 – 45

Extension 25 – 45

Side flexion 20 – 40

Rotation 35 – 50

PROM tissue stretch

HEALTH
HISTORY

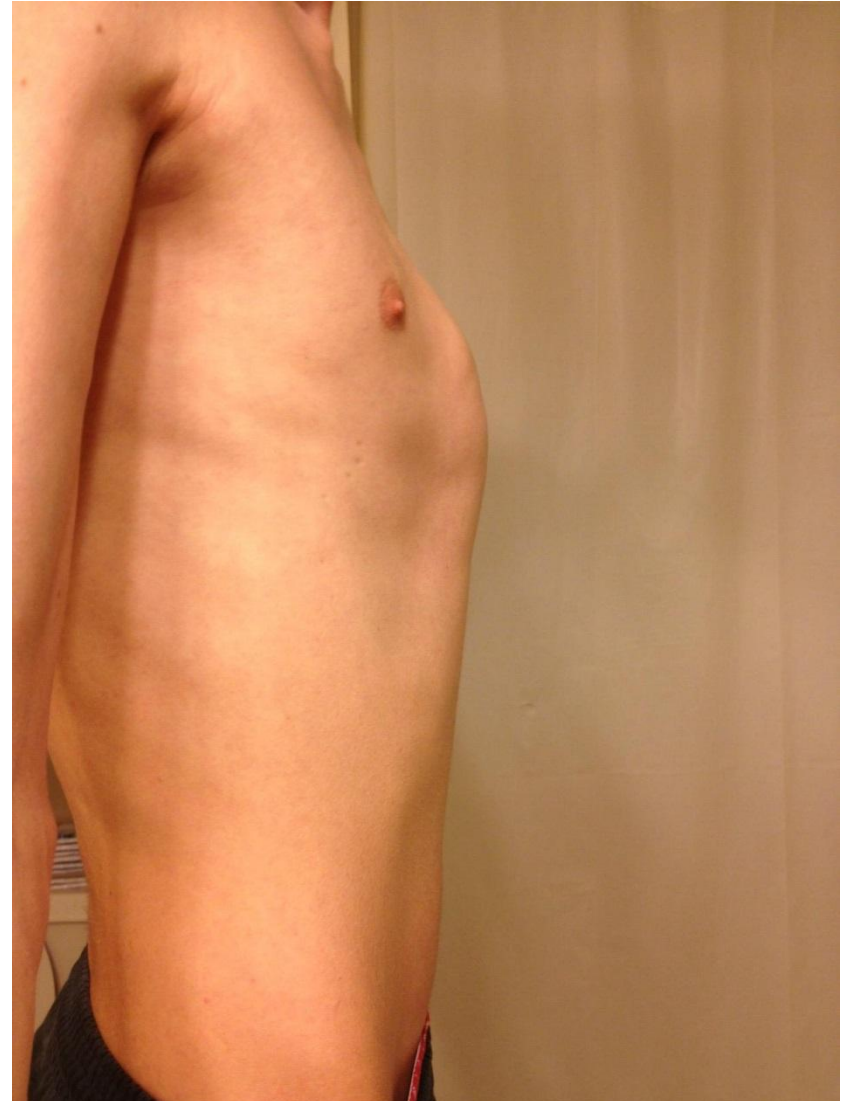
Read through patient history on pg 581 and make a list of the questions to ask.

OBSERVATION

CHEST DEFORMITIES

Pigeon chest

- Sternum projects downward and forward
- Increases AP dimensions
- Impairs breathing by restricting ventilation capacity



CONT...

Barrel chest

- Sternum projects forward and upward
- Increases AP diameter
- Seen in the condition emphysema



Normal adult



Barrel chest

AND AGAIN...

Funnel chest

- Congenital deformity when the sternum is pushed posteriorly d/t an overgrowth of the ribs
- AP dimensions are decreased
- Can result in an increased kyphosis



KYPHOSIS

Round back

- Decreased pelvic inclination (20°) with a thoracolumbar or thoracic kyphosis.
- Most forms of kyphosis seen show a decrease in pelvic inclination. To compensate and maintain the body's center of gravity, a structural kyphosis. This is usually caused by tight soft tissue from prolonged postural change or growth disturbance results causing a round back deformity.

CONT...

Scheuermann's disease

- Most common structural kyphosis in adolescents but can occur in adults.
- Its etiology is unknown

CONT...

Hump back/ Gibbus

- Usually structural and often results from an anterior wedging of the body from 1 or 2 thoracic vertebrae.
- The wedging may be caused by a fracture, tumour or bone disease. The pelvic inclination is normal (30°)

CONT... AGAIN...

Flat back

- Decreased pelvic inclination(20°) with a mobile spine.
- Similar to round back, except that the thoracic spine remains mobile and is able to compensate throughout its length for the altered center of gravity.
- Although a kyphosis is or should be present it does not have the appearance of an excessive kyphotic curve.

CONT... LAST TIME I PROMISE!

Dowagers hump

- Results from postmenopausal osteoporosis.
- Because of the osteoporosis, anterior wedge fractures occur to several vertebrae, usually upper to middle t-spine. this causes a structural scoliosis that also contributes to a decrease in height.

SCOLIOSIS

- Deformity where there are 1 or more lateral curvatures of the lumbar or thoracic spine
- 2 types
 - Structural
 - Non- structural/ functional
- Refer to table 8-3 on pg 588 for the types of curves
- To figure out whether it is structural or functional we stand in front of them on the opposite side of the table. We then ask them to round over the table and look at the rib height side to side.
- += razor back spine or a hump on one side (this means it is structural)

RIB MOTION

ANTERIOPOSTERIOR RIB MOTION

- Test the upper middle and lower rib motion from the front of the body. Have the patient laying supine.
 - Place hands in first position with the heels of hands below the clavicle. Feel for the motion of the ribs.
 - For position 2; examiner place hands on the sides of the ribs feel for motion
 - For position 3; examiner places hands on the lower portion of the ribs feel for motion
 - If rib stops moving in inhalation - depressed rib
 - If rib stops moving in exhalation - elevated rib

JOINT PLAY

POSTEROANTERIOR CENTRAL VERTEBRAL PRESSURE

Examiner places thumbs on top of the SP's.

Examiner then applies a pressure to the sp through the thumbs, pushing the vertebrae forward.

Care must be taken to make sure the pressure is applied slowly and with careful control.

This springing motion may be repeated several times to determine the quality of movement.

Start at C6 repeat down to L1 or L2

POSTEROANTERIOR UNILATERAL VERTEBRAL PRESSURE

Examiner moves thumbs out laterally from the PACVP position moving from the SP's to the TP on one side.

The same anterior springing is applied as with the PACVP and both side are examined and then compared.

Work your way down the spine testing each side of the vertebrae.

TRANSVERSE VERTEBRAL PRESSURE

Examiners thumbs are placed along the side of the SP.

Starting at C6 apply a medial pressure to the SP.

Apply pressure to both sides of the SP.

Perform on each vertebrae down to L1 or L2.

Compare quality or movement side to side.

RIB SPRINGING

Patient is prone or on side, examiner places hands on the posterolateral aspect of the rib cage. Hands are at approx. 45° to the vertical axis of the patient's body.

Begin at the top of the rib cage and extend inferiorly, springing the ribs by pushing in with the hands on 1 side and then the other and then quickly releasing.

The quality and quantity of movement is to be compared.

If one rib appears to be hyper or hypomobile it or all of the ribs can be tested individually anteriorly and/or posteriorly.

REFERRED PAIN

Levator scap- neck shoulder angle to posterior shoulder and along the medial edge of the scap

Lats- inferior angle of scap to the posterior shoulder; iliac crest

Rhomboids- medial border of scap

Traps- upper thoracic spine to medial border of scap

Serratus ant- lateral chest wall to lower medial border of scap

Serratus post- medial border of arm to medial 2 fingers

Serratus sup- scap area to post and ant arm down to little finger

Multifidus- adjacent to spinal column

Iliocostalis- spinal column to line along medial border of scap