Hands on C spine Shoulder/Upper Limb pain

- Brief Overview of pain history & anatomy
- Problems of examination and diagnosis
- Take home pattern recognition of myofascial pain
- Take home exam and treatment options

EPIDEMIOLOGY neck pain

- Point prevalence for acute 10 – 35%
- Lifetime prevalence for acute – 35 – 50%
- Lifetime prevalence for chronic - 14 %

Natural History of acute neck pain

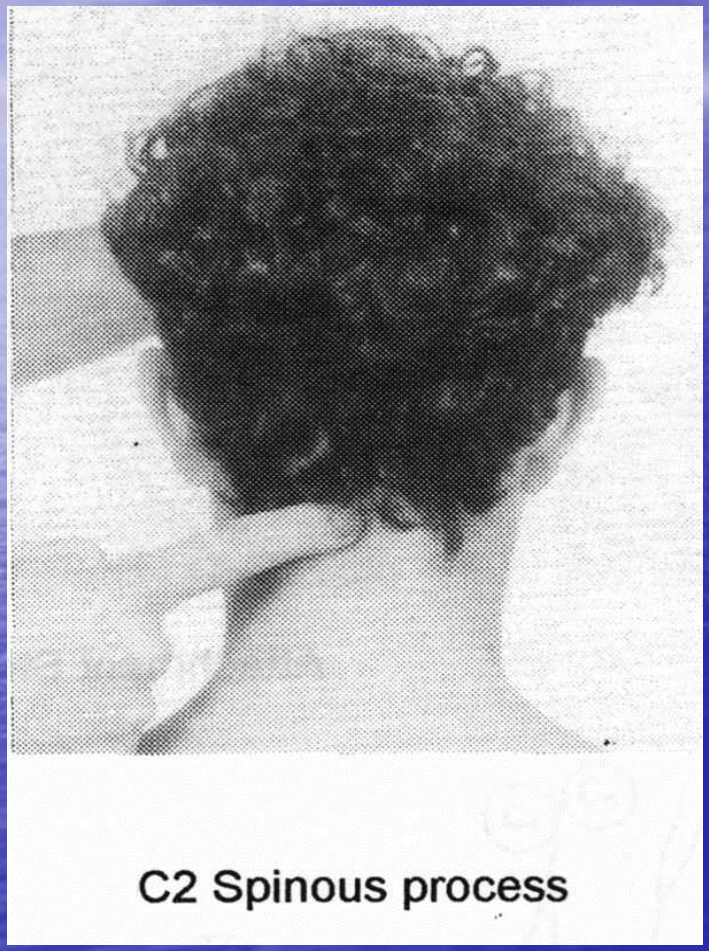
- ***Prognosis is largely favourable***
- ***40% of patients can expect to recover fully***
- *25% will retain only mild symptoms*
- ***7% will have severe disabling symptoms***

OF PATIENTS FOLLOWING WHIPLASH

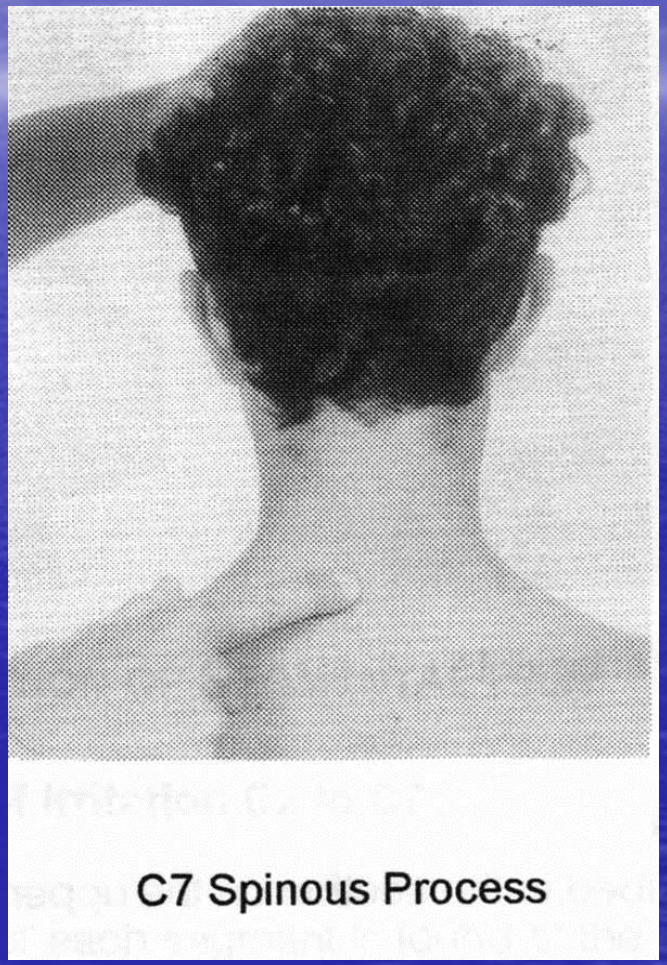
- *80% can expect to recover rapidly and be fully recovered within one year*

Management of Acute & Chronic Neck Pain – Nick Bogduk & Brian Mc Guirk

Landmarks

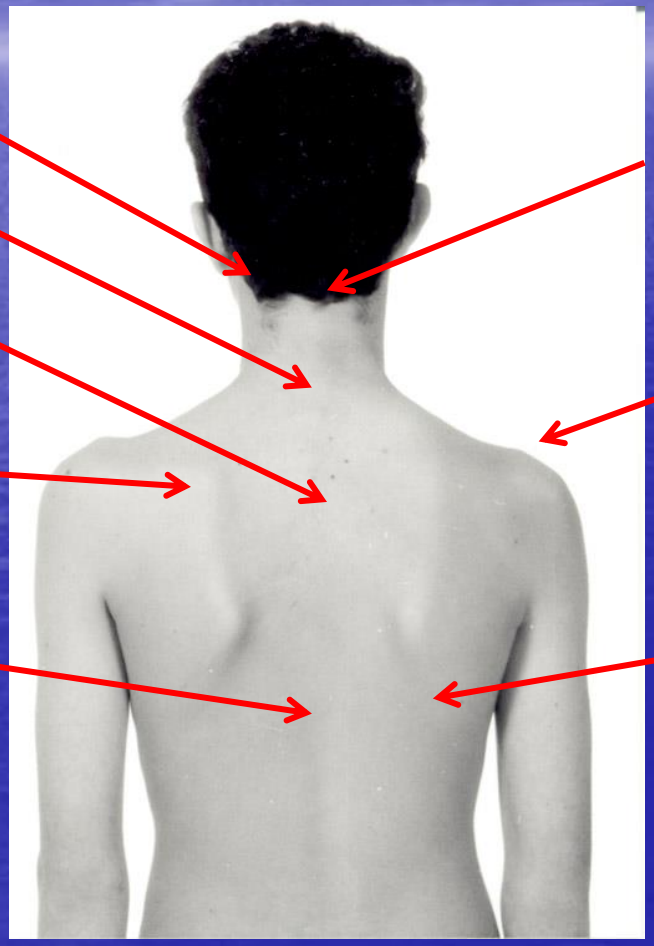


C2 Spinous process

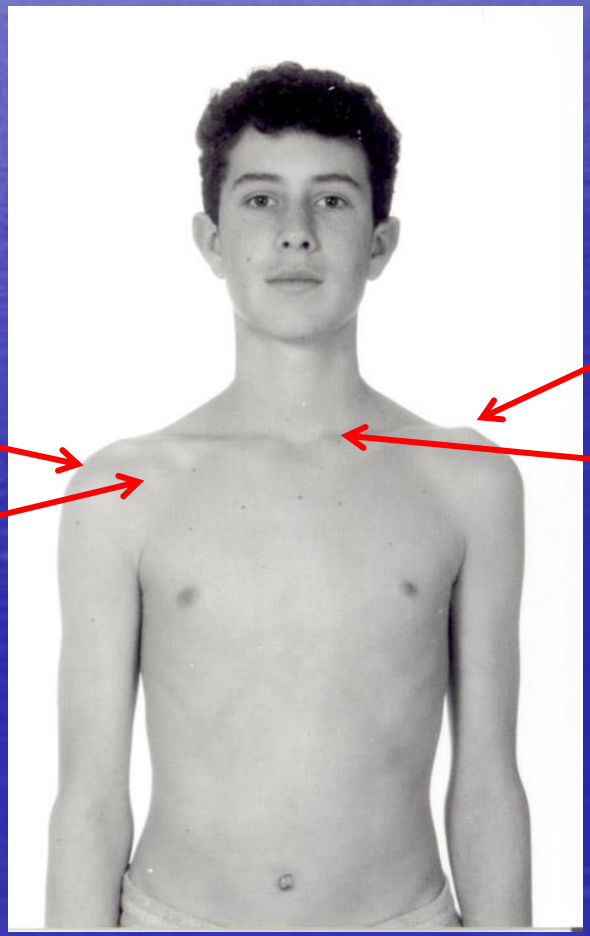


C7 Spinous Process

Surface anatomy (post)



Surface anatomy (ant)



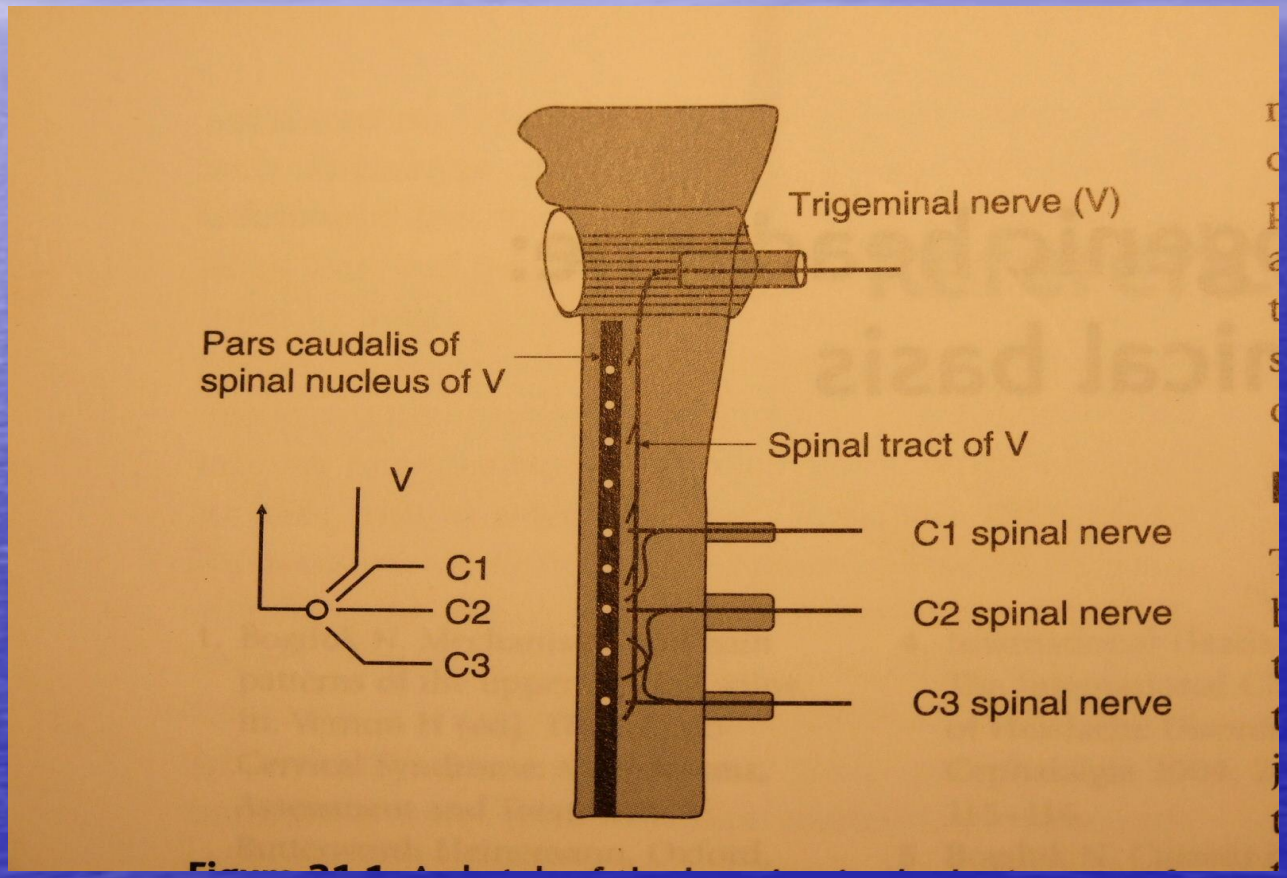
What are the functions of the neck?

FUNCTIONS of the NECK and SHOULDER

- ***Neck: hold up the head***
- ***Neck: provide a safe conduit for the spinal cord and air to enter the lungs, food and water to the stomach***
- ***Neck: hold up the shoulder and arms***
- ***Neck: provide a mobile platform for the eyes…&*** *to a lesser extent for the ears*

History is almost always more valuable than examination

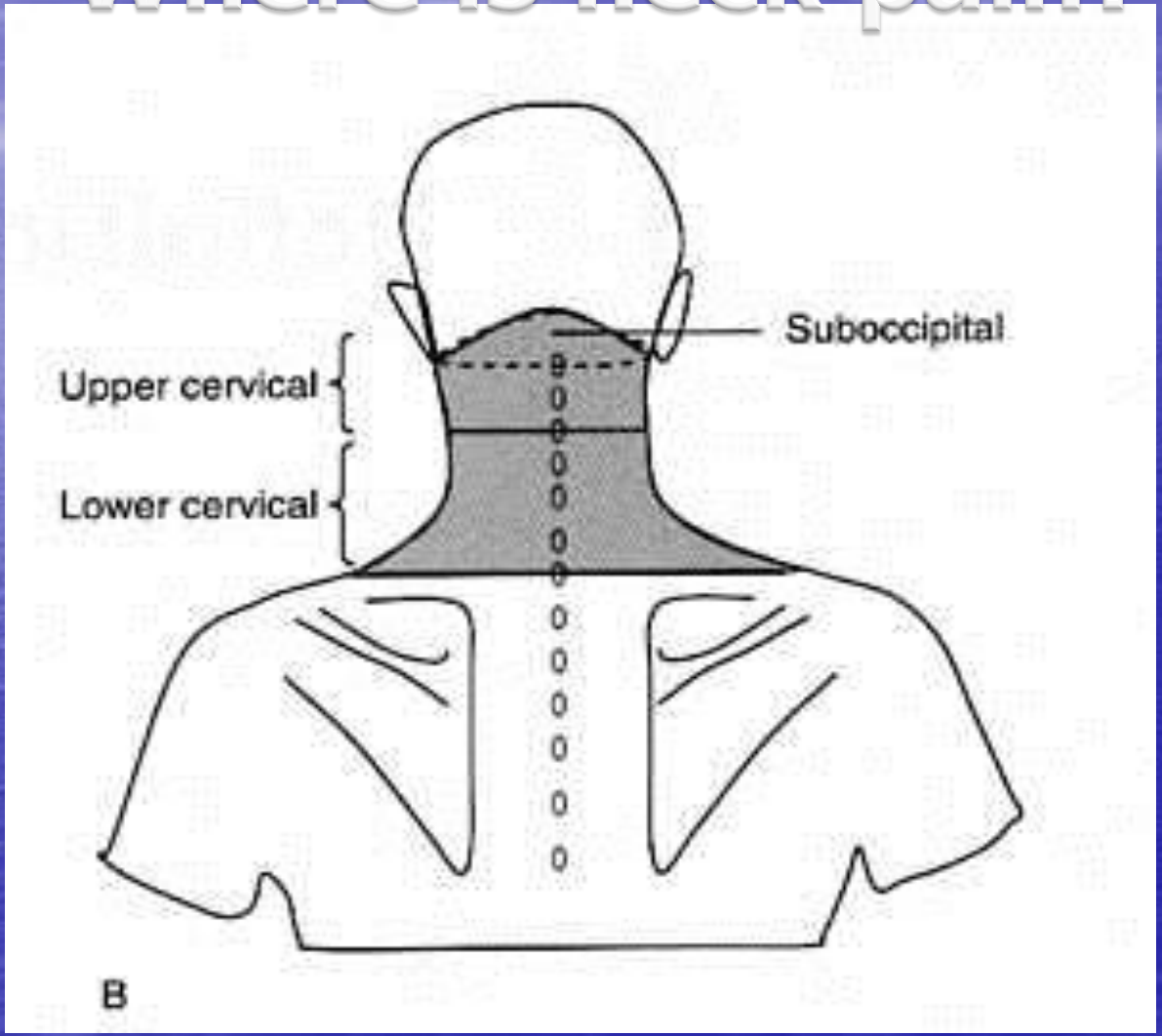
Cervicogenic Headaches



RADICULOPATHY

- *Lets us determine the level of involvement, when altered sensation, but does not apply to (radicular) pain*
- ***C6**, if the thumb is involved*
- ***C7**, if the middle finger*
- ***C8**, if the little finger*

Where is neck pain?



10 point history & red flag acronym

Socrates ad(s)

- Site
- Onset
- Character
- Radiation
- Alleviating factors
- Times of occurrence
- Exacerbating factors
- Severity
- Associated factors
- Disability scores
- Systems review gives……

Vision

- Visceral/Vascular
- Infection
- Significant Fracture
- Inflammatory
- Other
- Neoplasm

Socrates ads vision

- SITE

- Assist patient to find main focus/ worst /most often.

Socrates ads vision

- Onset
- - **Duration**- acute /chronic
- **Mode**- gradual /sudden (think vascular)

-spontaneous/traumatic

- well/ill

(Spontaneous and ill think red flag-risk factors for spinal infection)

" were you well or ill or stressed when it started"

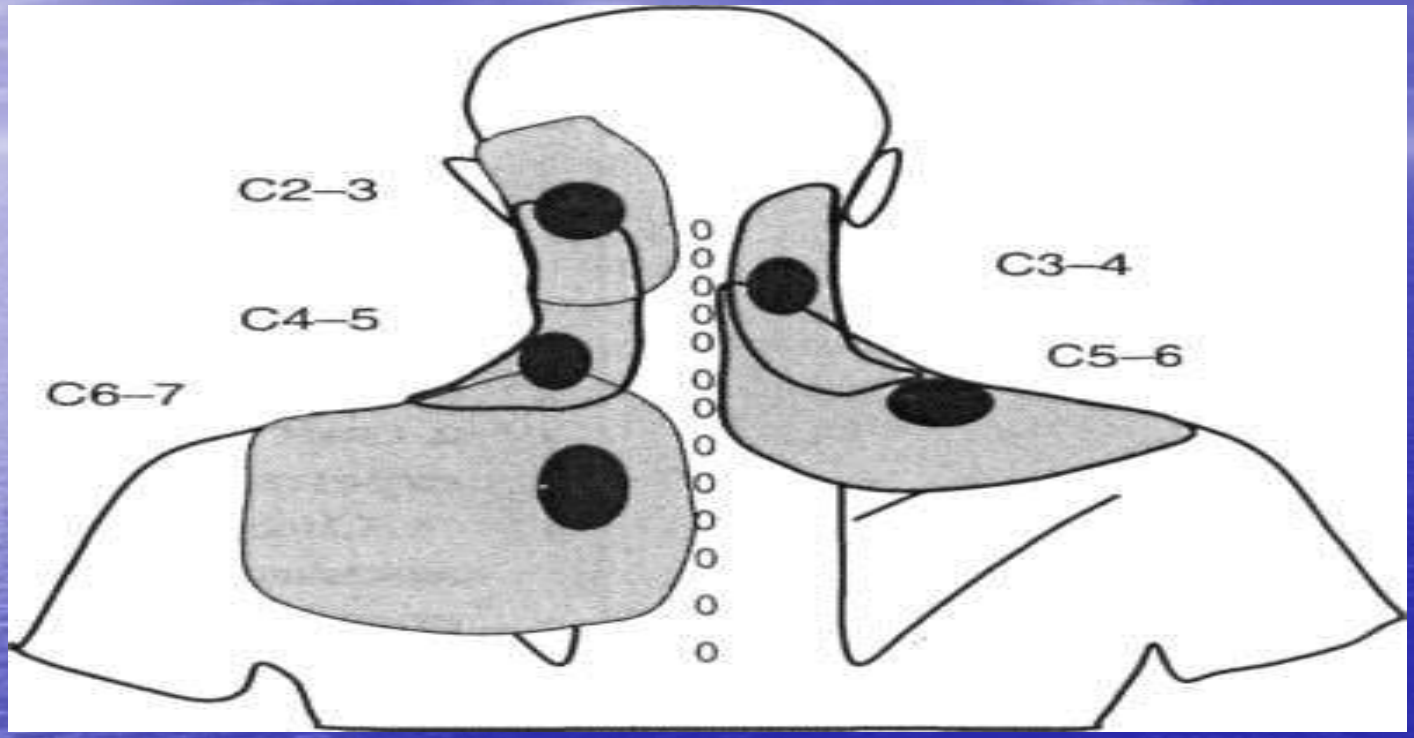
Socrates ads vision

- Character
- -deep spreading aching dull sore (think somatic)
- -superficial moving stabbing shooting burning (think radicular/neurogenic)

Socrates ads vision

- Radiation
- The most important issue is where pain is felt consistently not the extent of the radiation

Z joint pain maps



C2-3 suboccipital
C3-4 levator scap
C4-5 angle between neck and top of shoulder girdle
C5-6 supraspinatus fossa (radiate to deltoid)
C6-7 ss and is and gravitates to medial border scapula

Anatomy and Pain Pattern

Teres Minor

Teres Minor

Socrates ads vision

- Alleviating factors

- posture
- heat/cold
- manual
- drug (prescription or “natural”)

Socrates ads vision

- Times of occurrence
- night (think red flag especially if combined with spontaneous onset)

Socrates ads vision

- Exacerbation

- - movement/activity (if not think red flag)
- "if you're in pain what makes it worse"

Socrates ads vision

- Severity
- VAS Visual analogue pain score 0-10/10

Socrates ads Vision

- Associated factors
- -nausea weakness parasthesiae etc

Socrates ads Vision

- Disability score

Socrates ads

– Systems review

is for the red flag check

- Visceral/Vascular
- Infection
- Significant Fracture
- Inflammatory
- Other
- Neoplasm

The red flags are: Vision

- Visceral
- Eg heart- on CVS systems review

The red flags are: vision:
Infection (omyelitis /septic arthritis) risk factors:

- fever (37.8) night sweats
- Diabetes
- recent/concurrent infection (eg UTI as per frequency dysuria) cirrhosis AIDS
- Immunosuppression: disease/drugs including steroid (prednisone 7.5 mg/d 3/12)
- body penetration (catheter injections surgical procedures)
- Social: illicit drug use, occupation/recreational/overseas travel eg hydatids
- Systems review: skin infection

The red flags are: Vision

Significant fractures

- Occur after trauma
- major trauma – falls
- minor trauma –corticosteroid (prednisone 7.5 mg daily for 3/12) , age >50y, known osteoporosis

The red flags are: vision

- Inflammation
- pain elsewhere invites systemic arthropathy or systemic inflammation
- RA, AS, Gout, Reiters, PMR

Socrates ads vision

- Other -Metabolic
- Hyperparathyroidism (can cause osteitis fibrosa which can be an occult cause of bone pain and there may be no other cues)
- Pagets
- Check Ca, PO4, PTH, Vitamin D, ALP.

The red flags are: Vision

- Neoplasia

- Past present history of cancer
- wt loss (unexplained 4.5 kg in 6/12)
- Breast (mammogram Hx) uterus (menstrual hx) Cervix (smear Hx) Bowel (change FOB) Prostate (impaired stream male, psa and rectal) Lung (cough smoking cxr/lung ca)

- Plain Xray missed 41 % metastasis- think MRI

Neoplasia continued

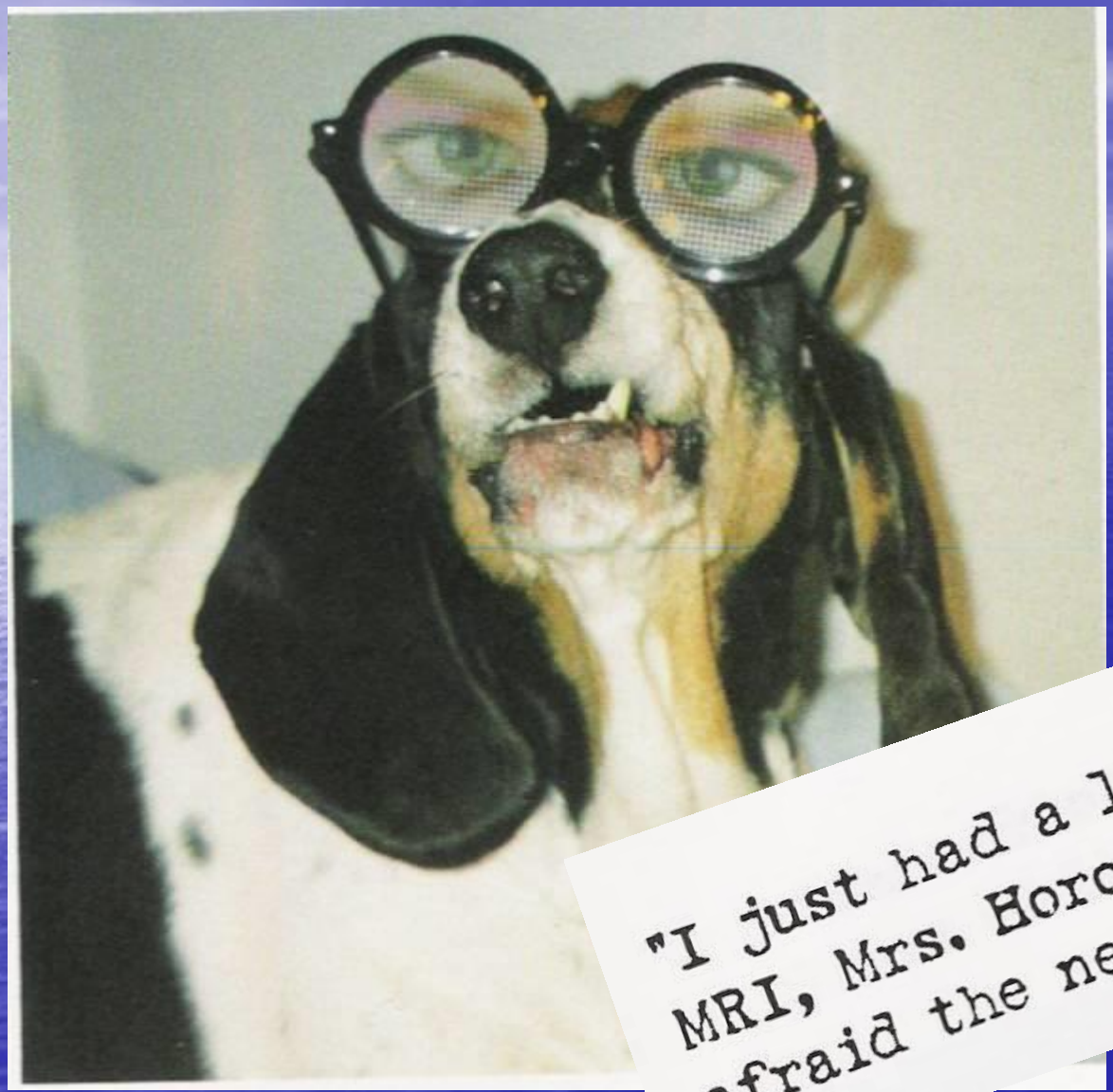
- CAFS acronym very sensitive, -ve rules out cancer

- Cancer history: –ve
- Age >50 : -ve
- Failure to improve after 1/12 :–ve
- Systemic Weight loss (4.5 kg in 6/12): -ve

- (remember SnNout and SpPin)

Take home point!!!!!!!!!!!!!!!!!

- Socrates Ad(s) = pain history
- The red flags are VISION which are mercifully rare generally diagnosed by history and systems review+/- imaging
- By exclusion left with **SOMATIC FIBRO-MUSCULAR IMPAIRMENT OF THE SHOULDER or SOMATIC NECK PAIN**



"I just had a look at your MRI, Mrs. Horowitz, and I'm afraid the news isn't good."

EXAMINATION NECK

- ***Look*** *for asymmetry, restriction and abnormal breathing patterns (see later)*
- ***Move*** *the neck to check for restriction, both active and passive to determine level(s) of injury*
- ***Feel*** *for tenderness over facet joints and in cervical muscles, particularly feeling for trigger points (see later)*

CERVICAL ROTATION

- *Upper cervical rotation, mainly C 1-2, is 50% (45 degrees). Examine in full flexion, which isolates to above C3*
- *Lower cervical rotation, from C3 to Th1 is also 50% (45 degrees). Examine in full extension, which excludes upper cervical rotation*

OTHER EXAMINATION

- *Assess the rest of the spine, as other areas may be involved and aggravating symptoms / preventing resolution*
- *Assess shoulder ROM, as restricted shoulder mobility may affect the neck*
- *Check breathing. Is it full diaphragmatic? or is the patient using accessory muscles, particularly trapezius, levator scapulae and excessive use of the scalenes*

STRESS (DYSFUNCTIONAL) BREATHING

- ***If the patient is breathing incorrectly, this may be a major factor in non resolution***
- ***Non diaphragmatic breathing will lead to:***

  (1) Excessive muscle tightness

  (2) Loss of Core Stability

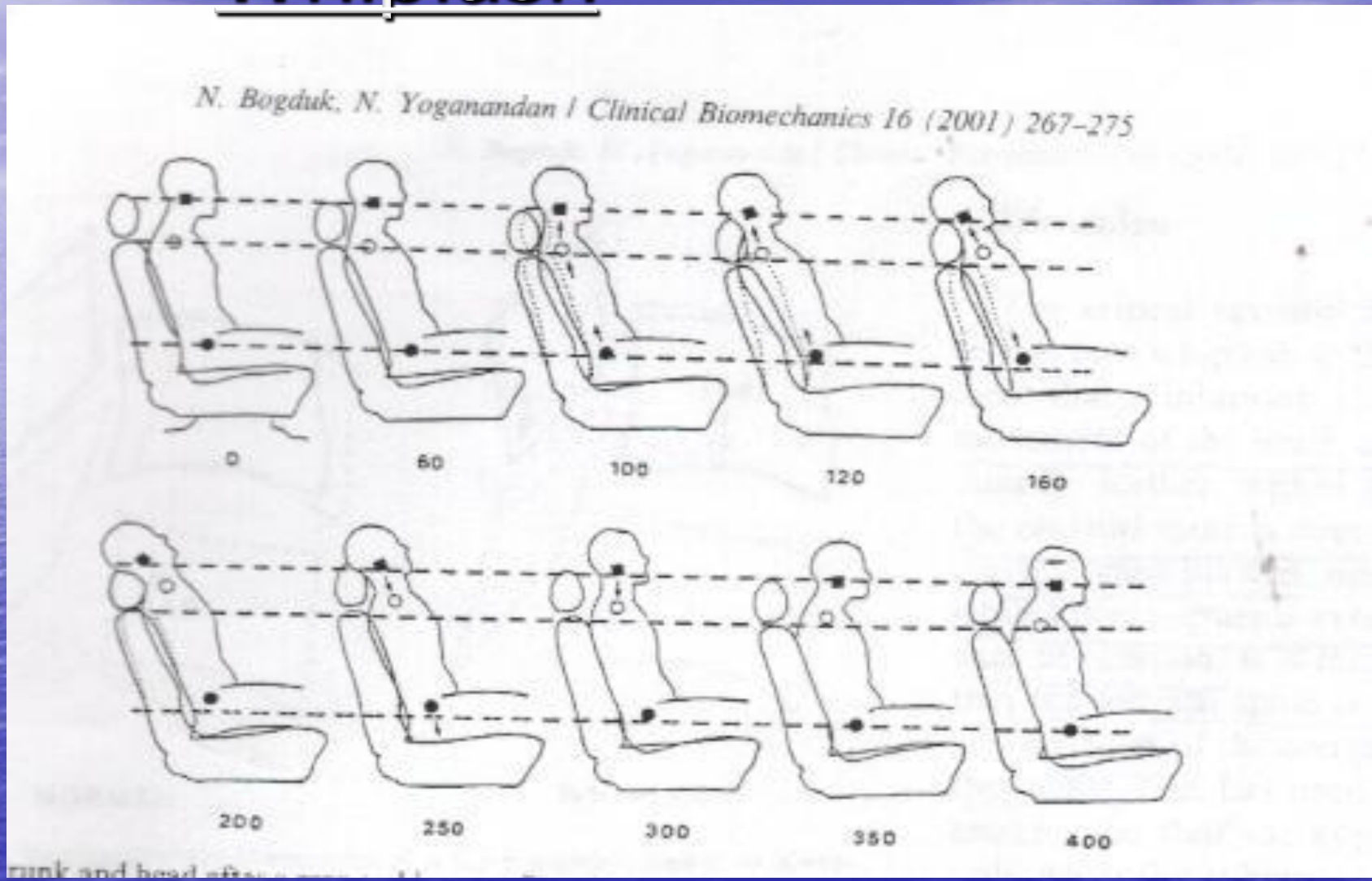
THE IMPORTANCE OF BREATHING IN MUSCULOSKELETAL MEDICINE

- ***Breathing with normal respiratory mechanics has a potent role in the neuromuscular system.***
- ***Respiratory mechanics play a key role in both posture and spinal stabilisation***

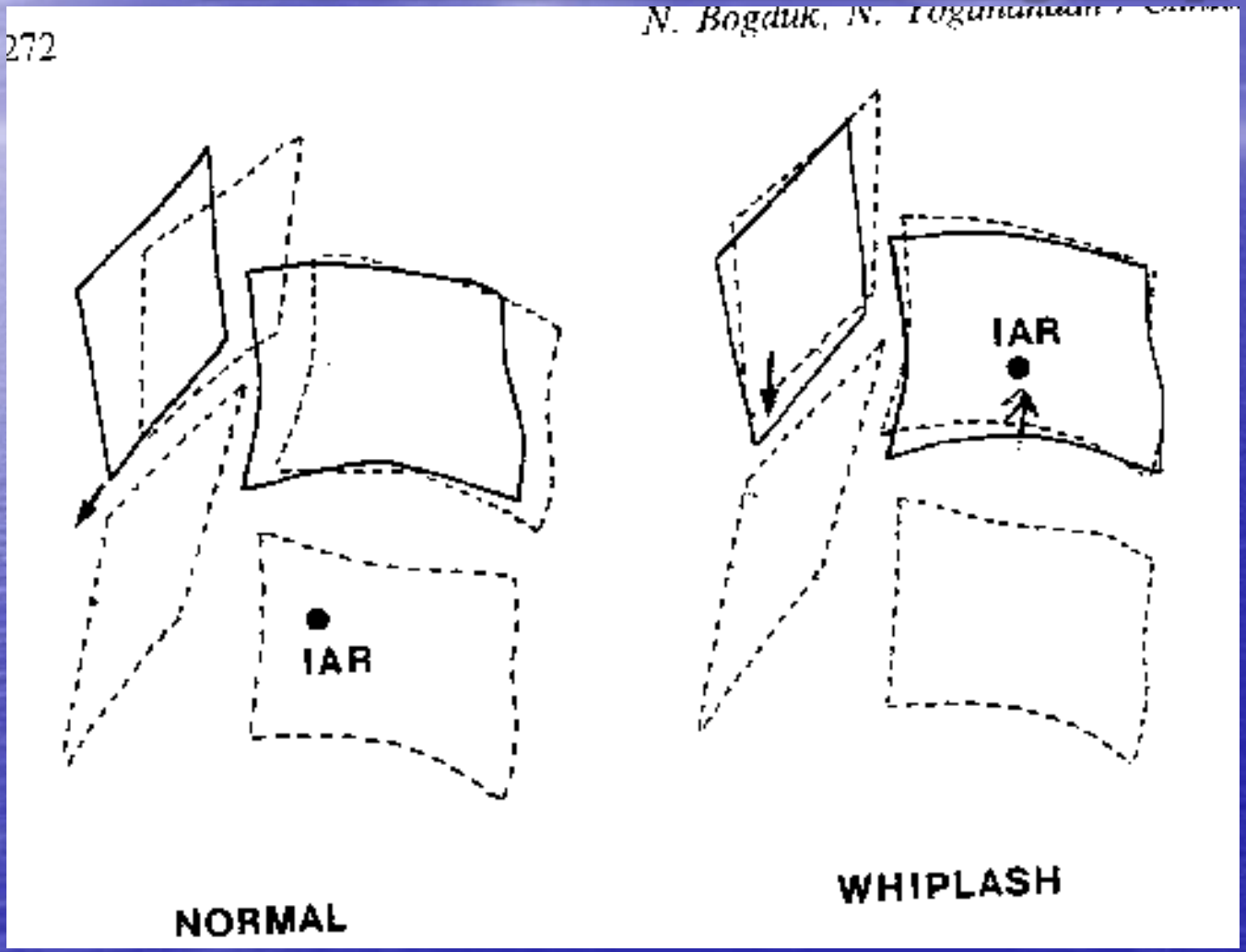
THE NON RESPONDER

- *What would you do?*
- *How long before referral?*
  - *No response to treatment / six weeks*
  - *New or changing symptoms*
  - *Concern about possible Red Flags*

Whiplash


N. Bogduk, N. Yoganandan / Clinical Biomechanics 16 (2001) 267–275
0
60
100
120
160
200
250
300
350
400

Mechanism of injury



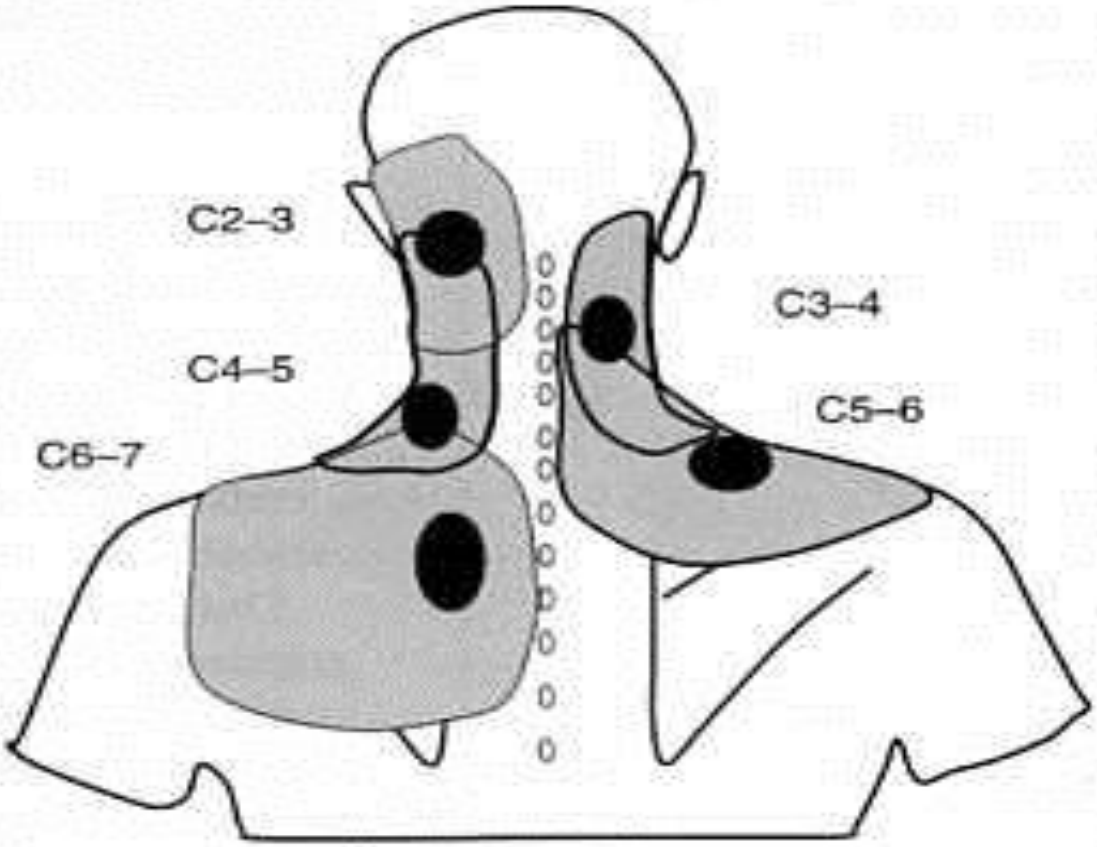


Figure 5.1 Centroids for the segmental origin of referred pain from the cervical spine. The shaded areas indicate the typical zones of referral, from the segments indicated, in normal volunteers and patients. The dark areas represent the centroids, or core areas, where patients feel the pain maximally when it arises from the segment indicated.

Incidence of pain arising from zygoapophyseal joints

- Z joint pain 45% in all cases of neck pain **(Bogduk and Aprill)**
- 60% in patients with neck pain following whiplash **(Barnsley et al)**
- 88% in high speed car crashes (Lord and Barnsley)

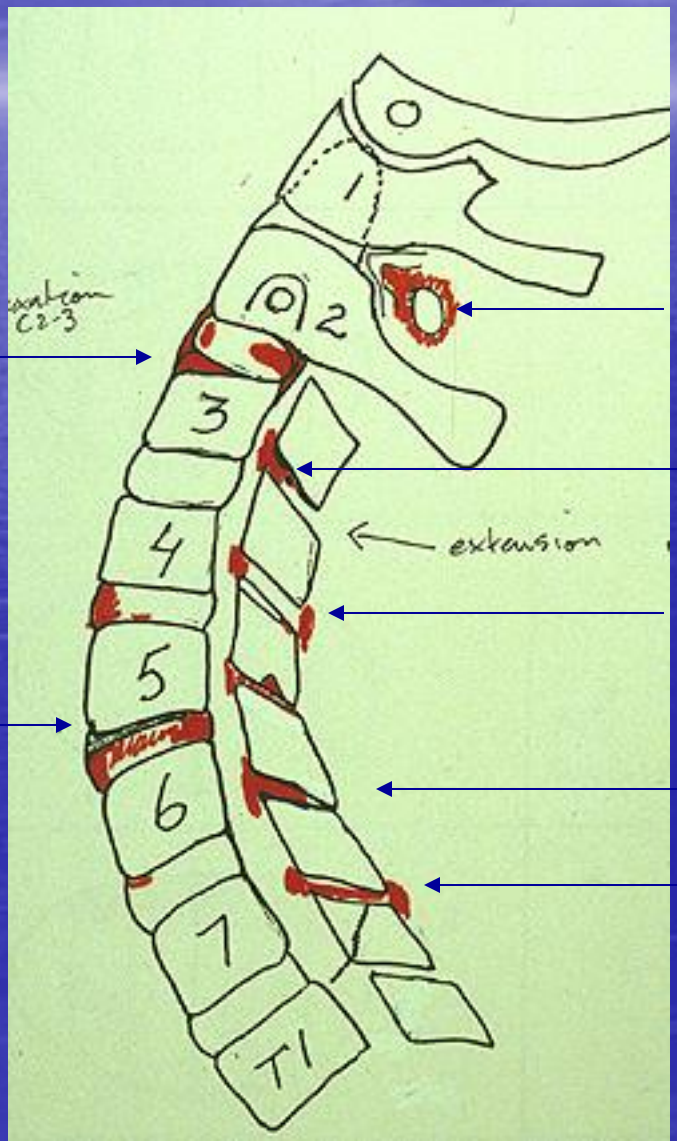
WHAT ELSE CAN BE DONE?

- ***Isolate the involved segment by Medial Branch Blocks (MBBs)***
- ***If two concordant MBBs are positive then Radio Frequency Neurotomy can be considered***
- *This is selectively funded by ACC, but is extremely expensive (around **$10,000**)*

Pathophysiology and the Cervical Spine Diagram of injuries identified

Distraction injuries

Partial avulsions of discs from vertebral bodies, in extension



Compression injuries

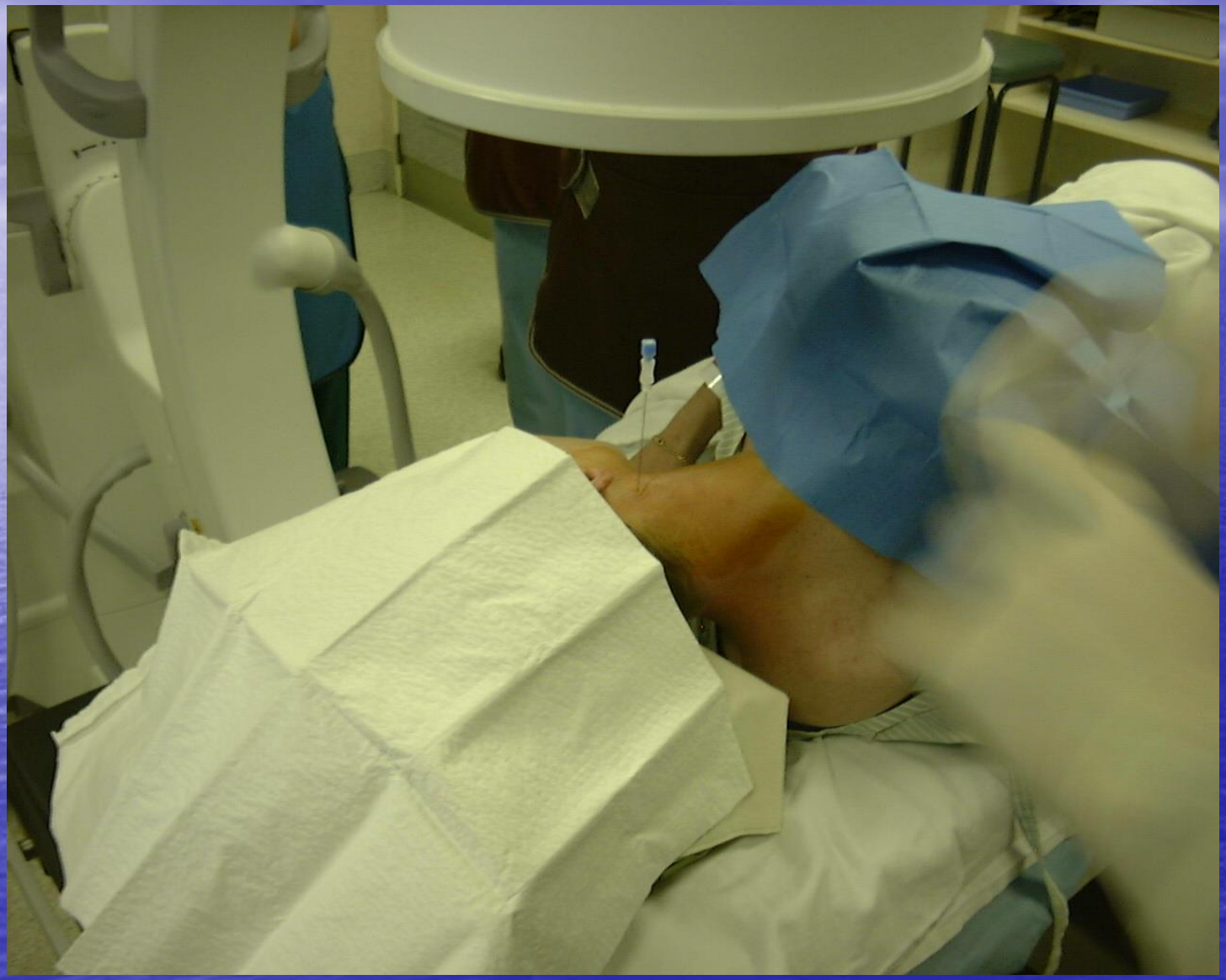
Haematoma around C2

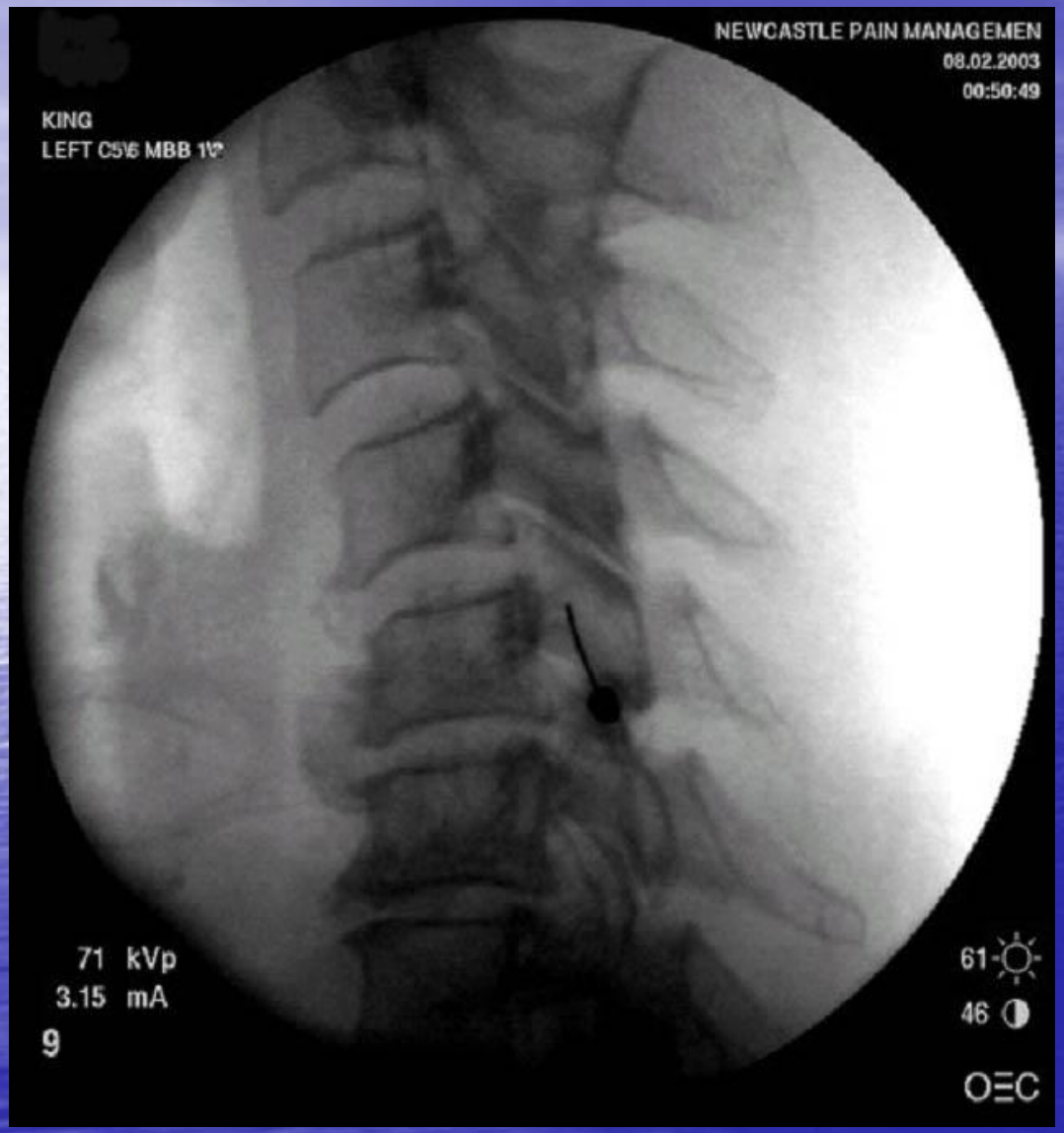
Bruising of vascular synovial folds

Facet haemarthroseswith # of C7

MRI

- *Only really useful in suspected neurological injury.*
- *Does a normal MRI exclude injury or pain?*

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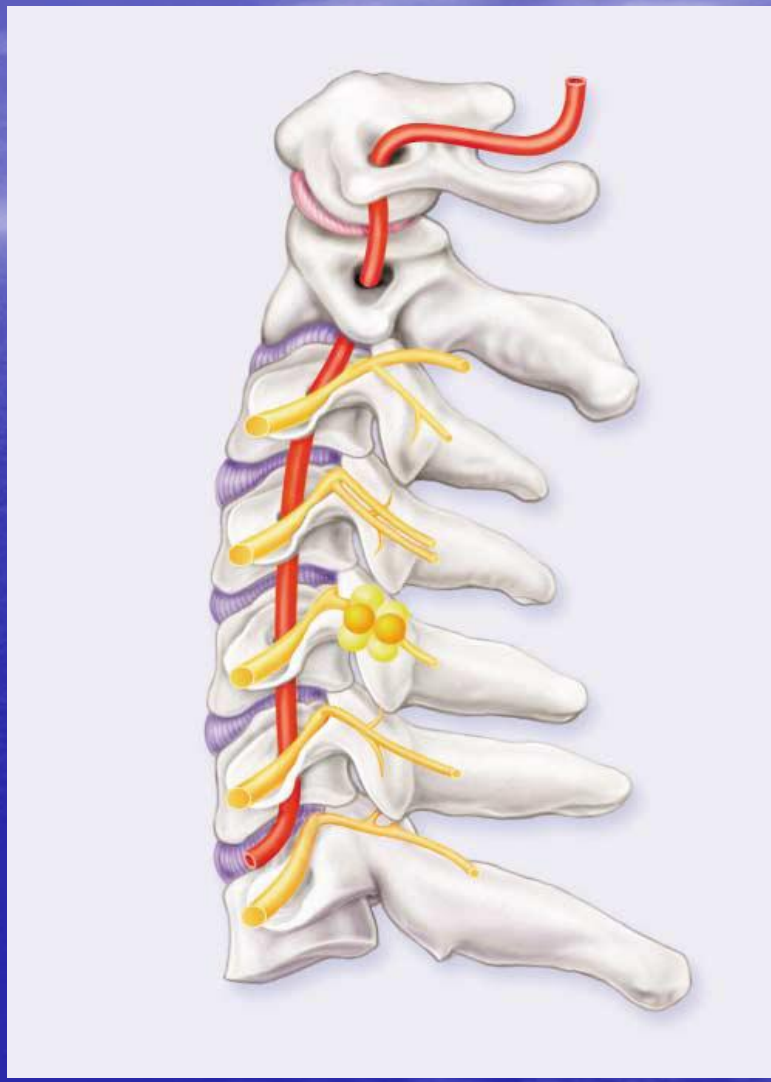
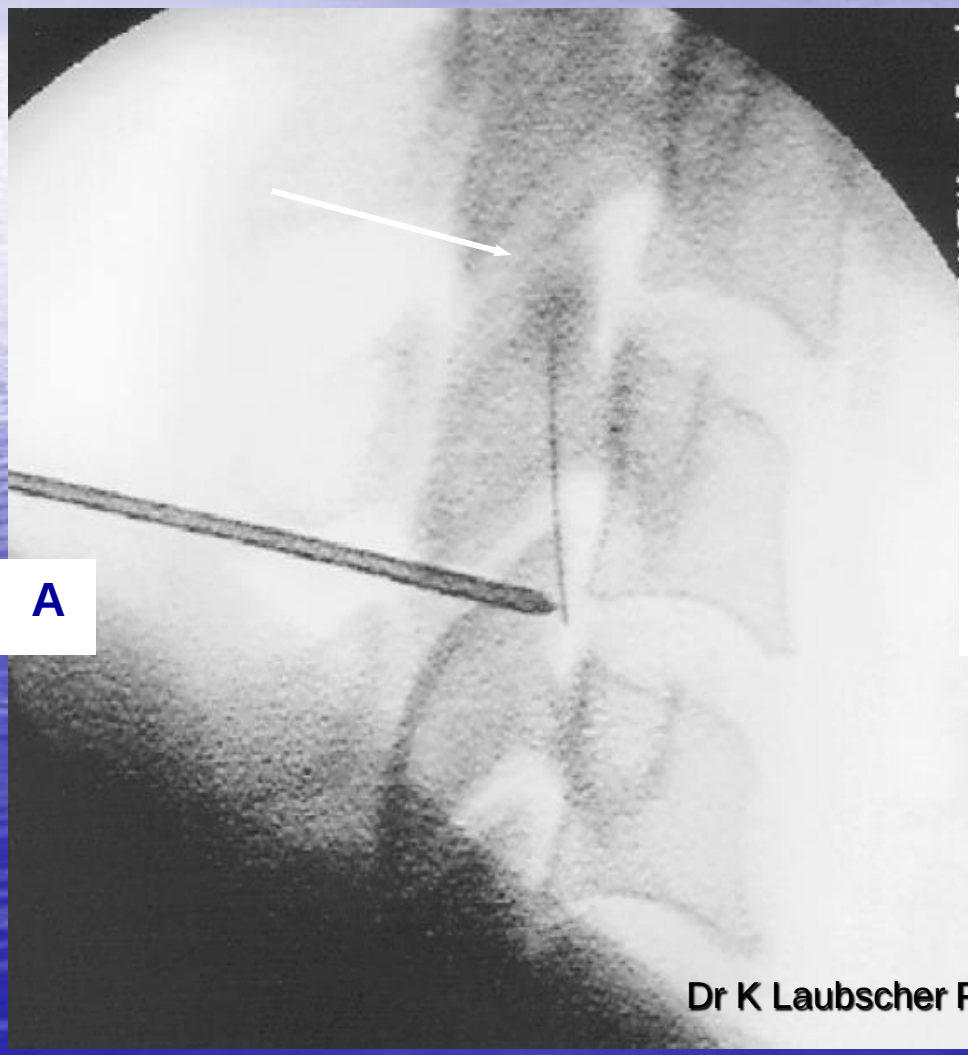
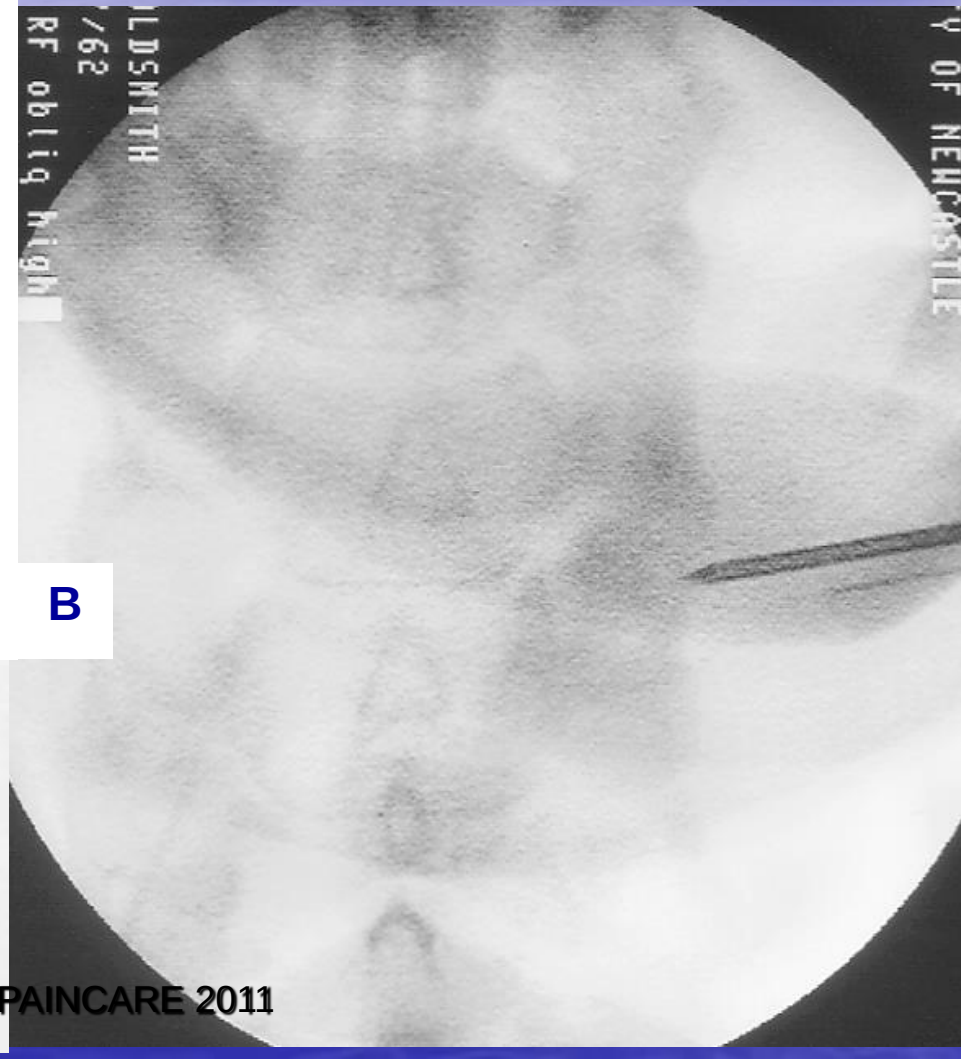


Radiofrequency denervation



A



B

Radiofrequency who where how & why

Who:

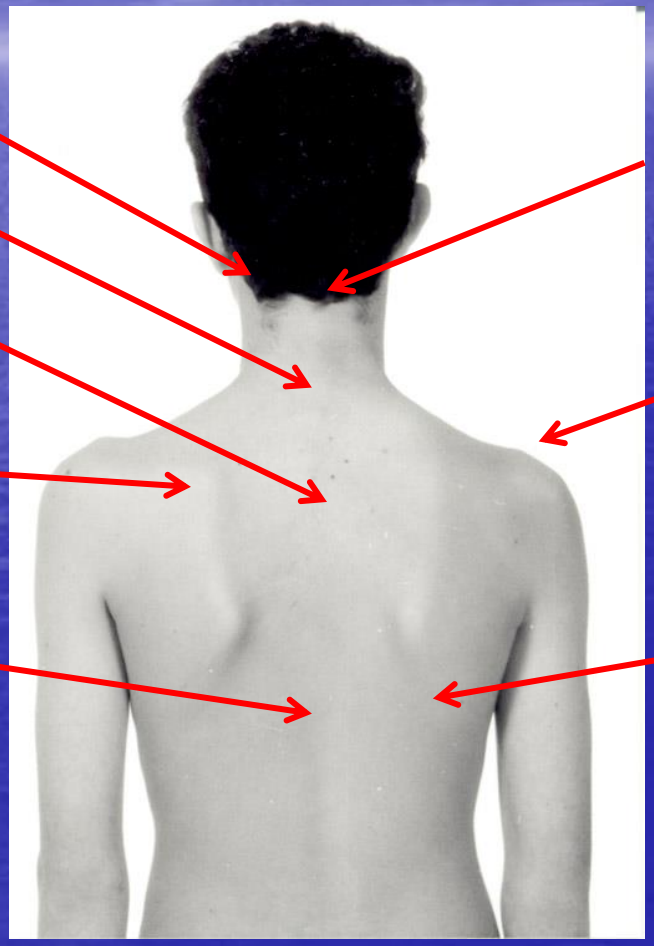
- "Spinal pain of unknown origin"
- Clinical pain pattern
- Pain >4/10

Where: **80%** C56, C67, C23

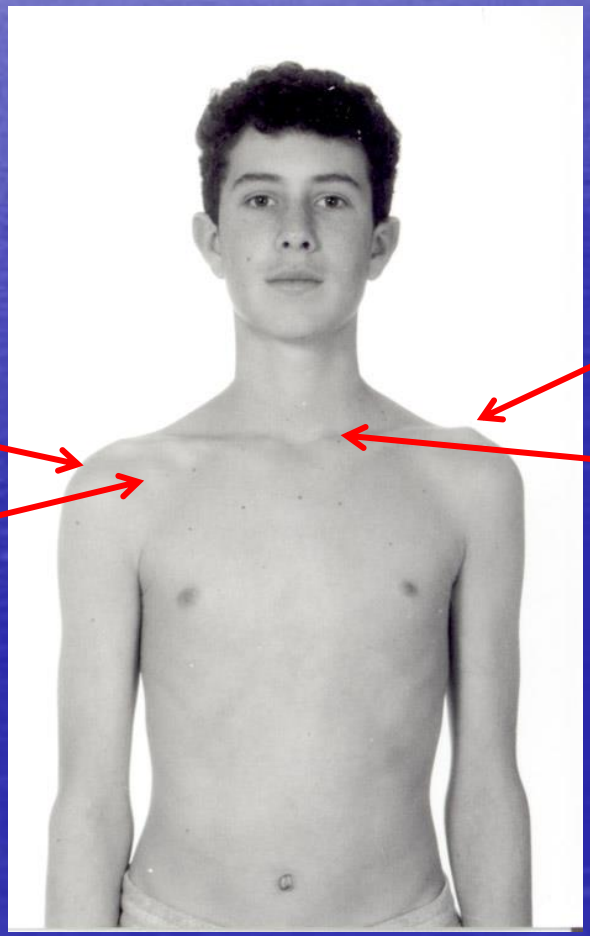
How: 80 degrees 90 sec

Why: Specific treatment is effective

Surface anatomy (post)



Surface anatomy (ant)

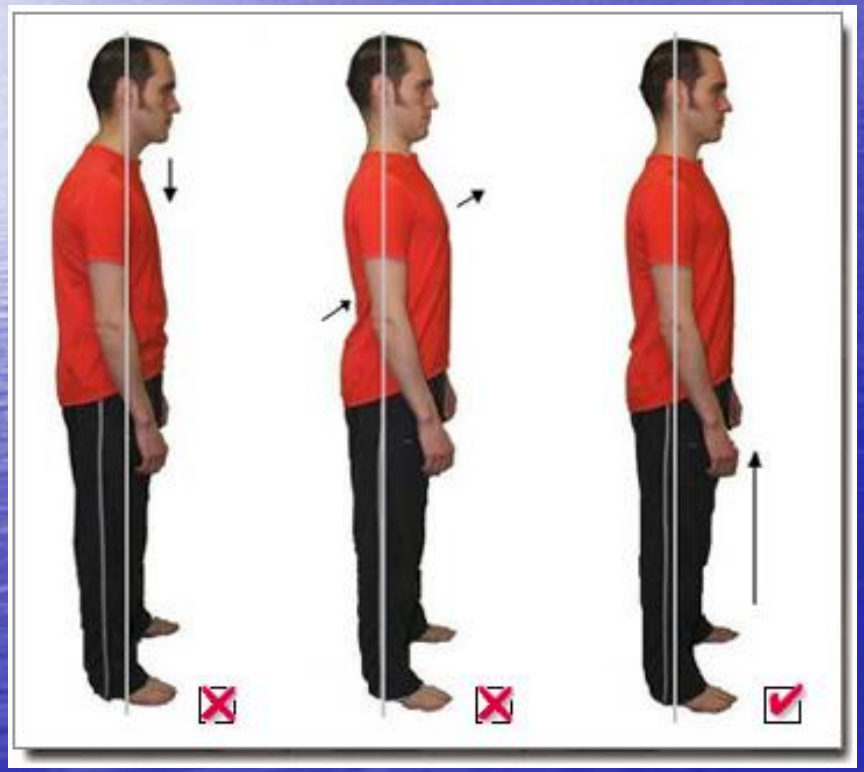


Examination

- Look: Posture and Breathing,
- Move : shoulder and C spine screen
- Feel : anatomy and myofascial pain patterns

LOOK

Posture



Breathing

FEEL

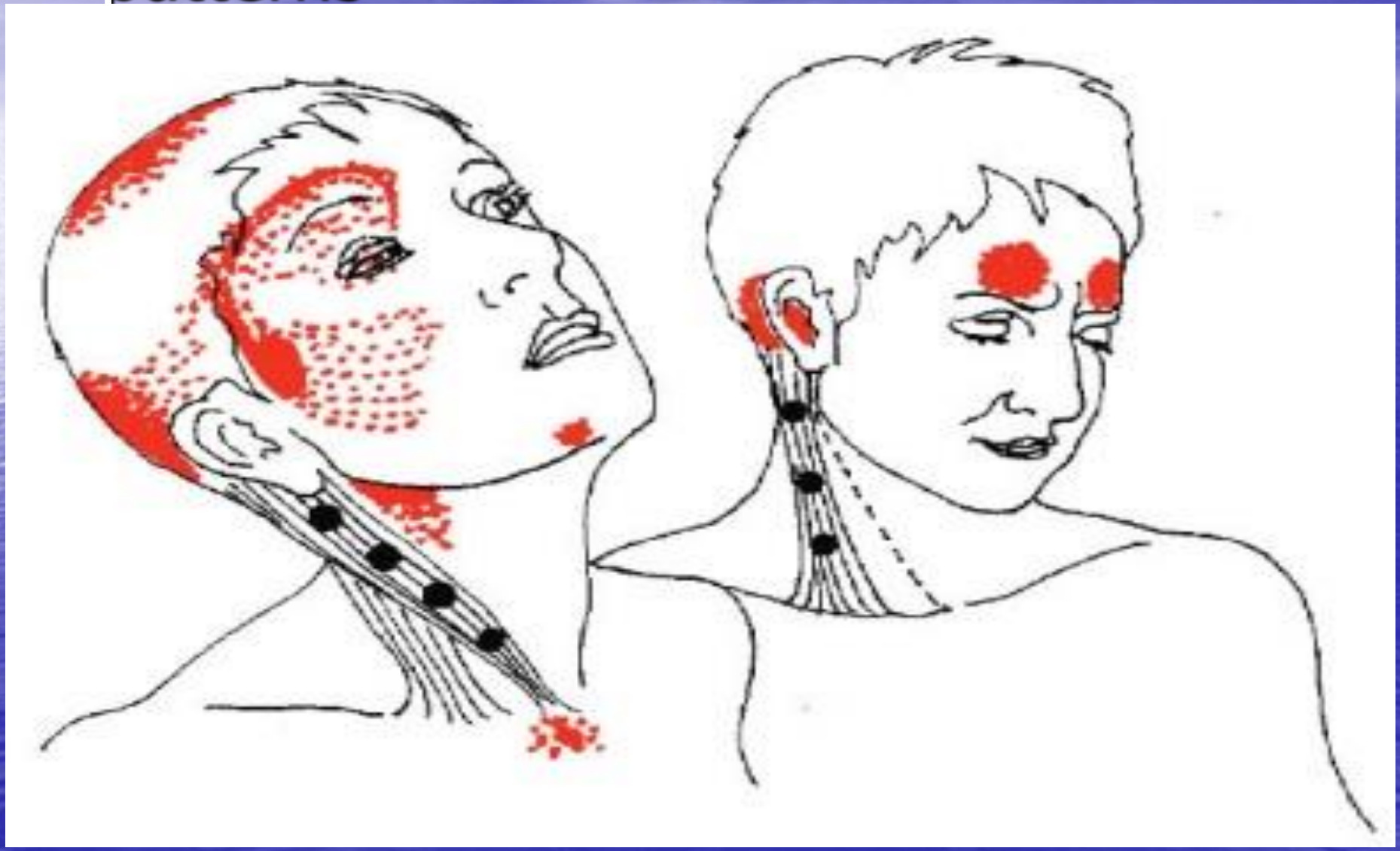
Structures

- Consider skin drag test and layers of palpation

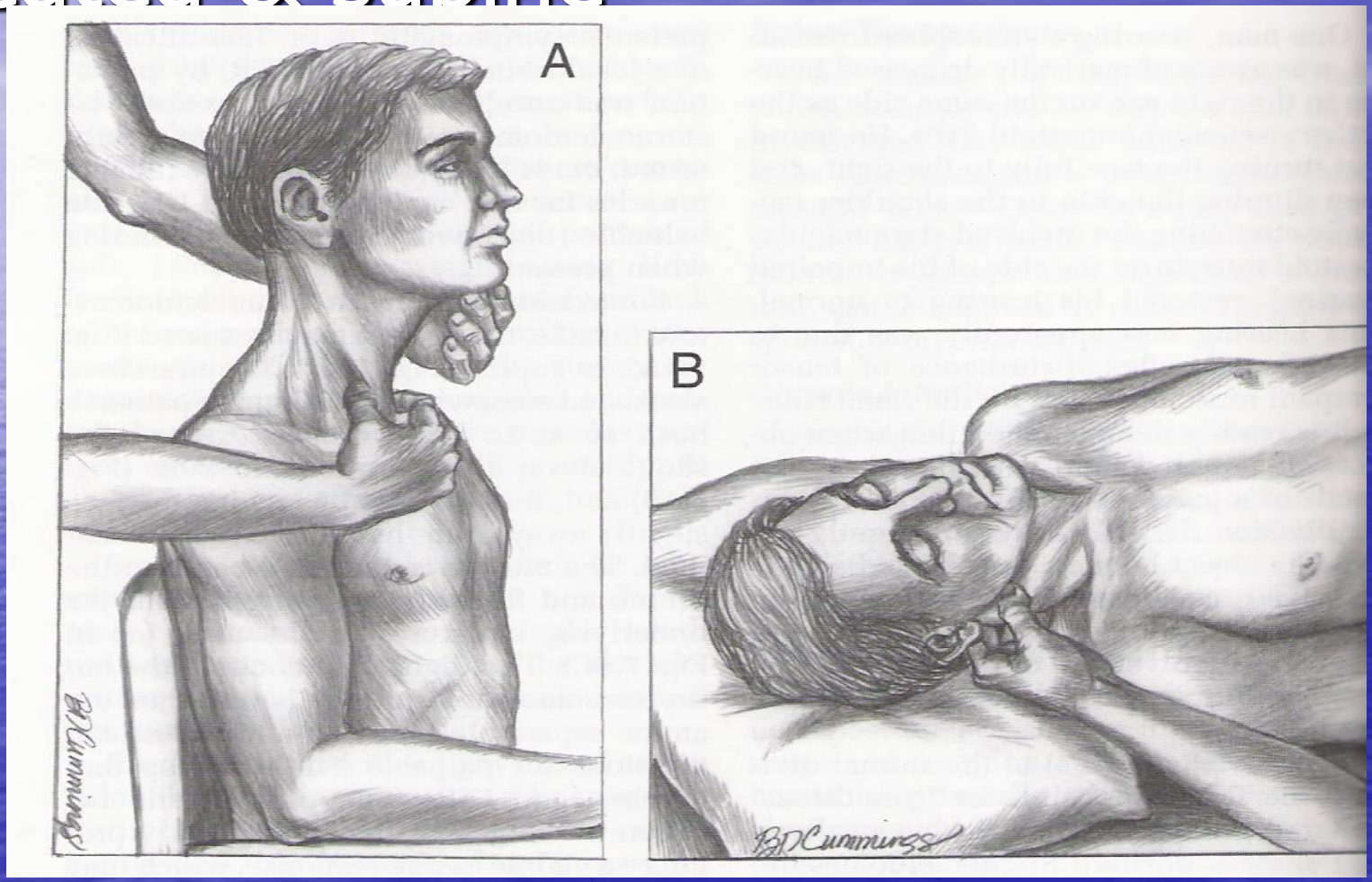
Myofascial Pain Patters

- Common patterns as follows……

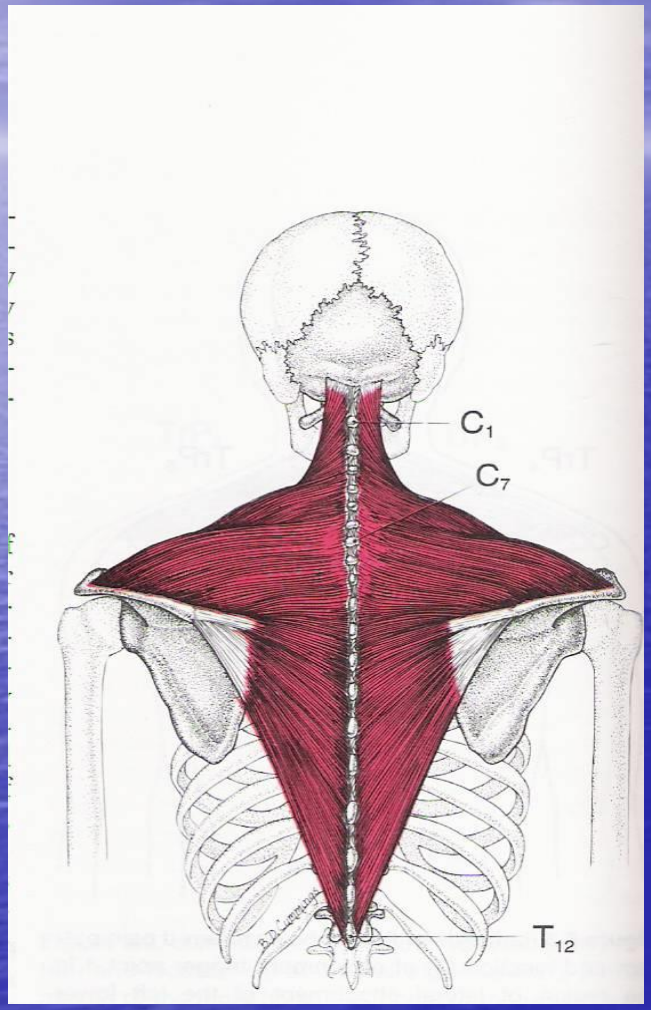
Sternocleidomastoid - referral patterns

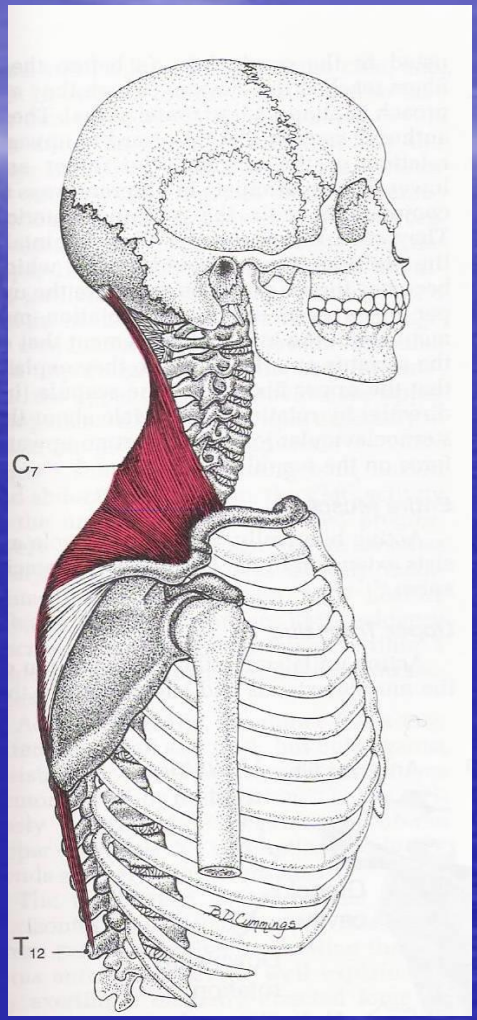


Sternocleidomastoid examination - seated & supine

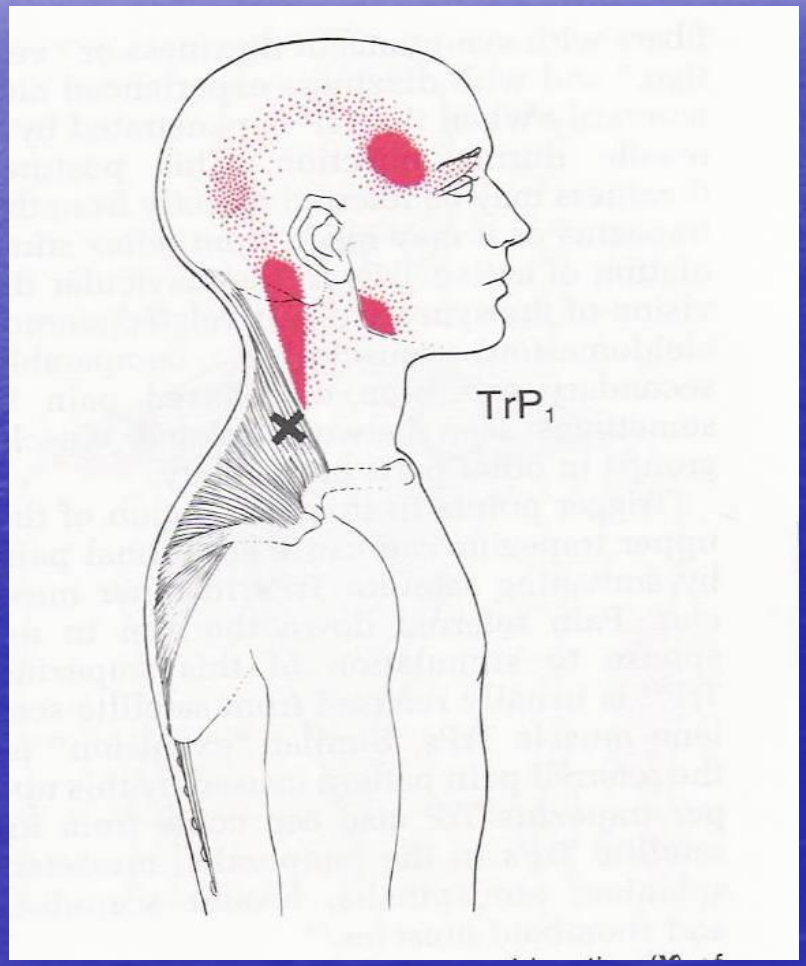


Trapezius- origin and insertion

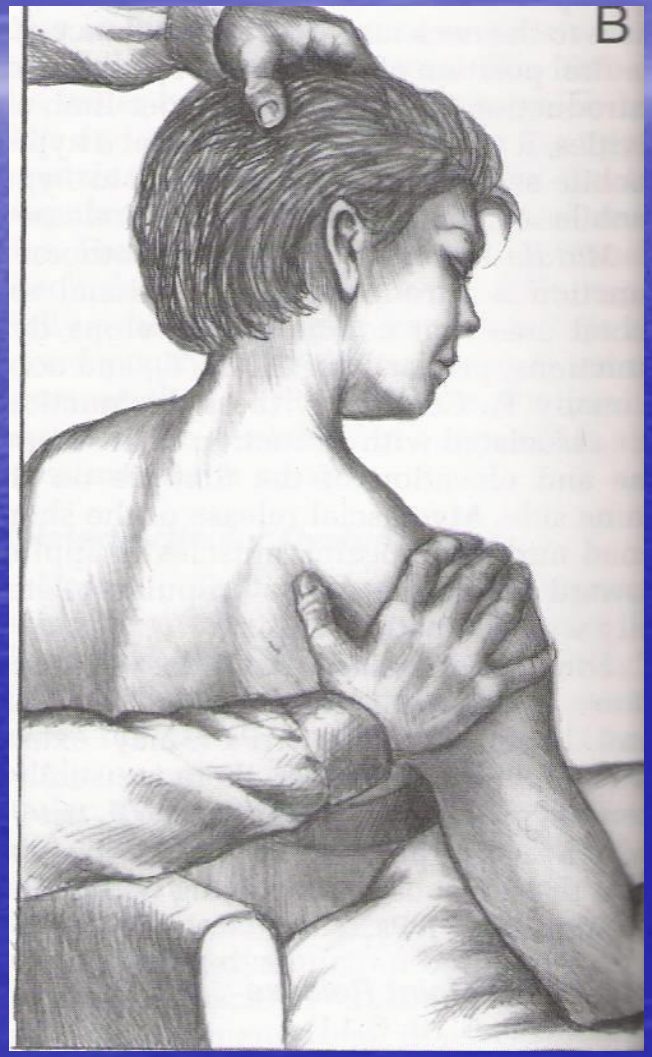




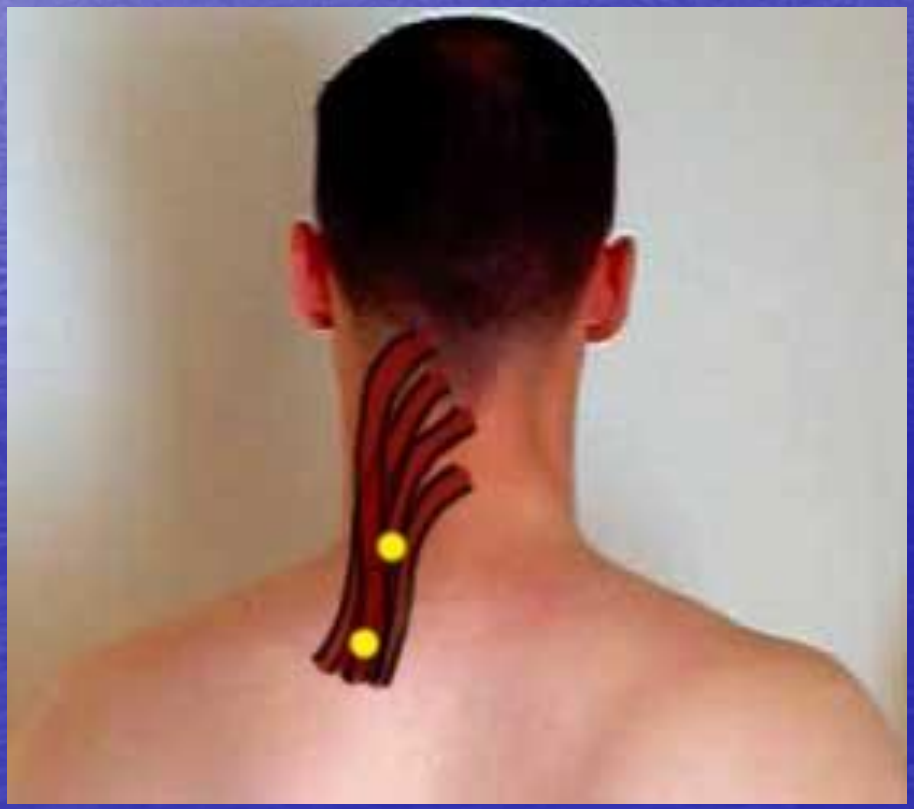
Trapezius (upper vertical fibres) -referral pattern



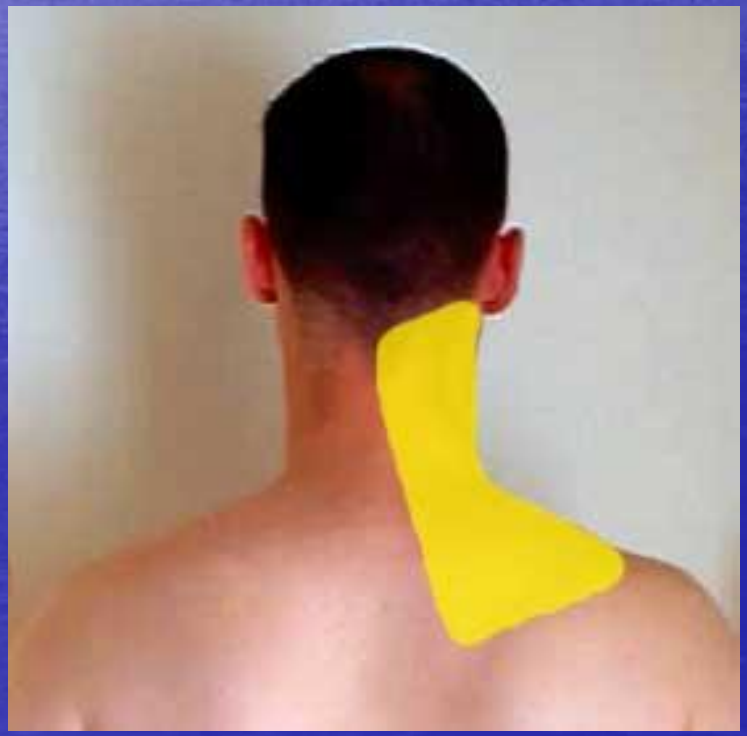
Trapezius – exam and treatment



Levator scapula Anatomy

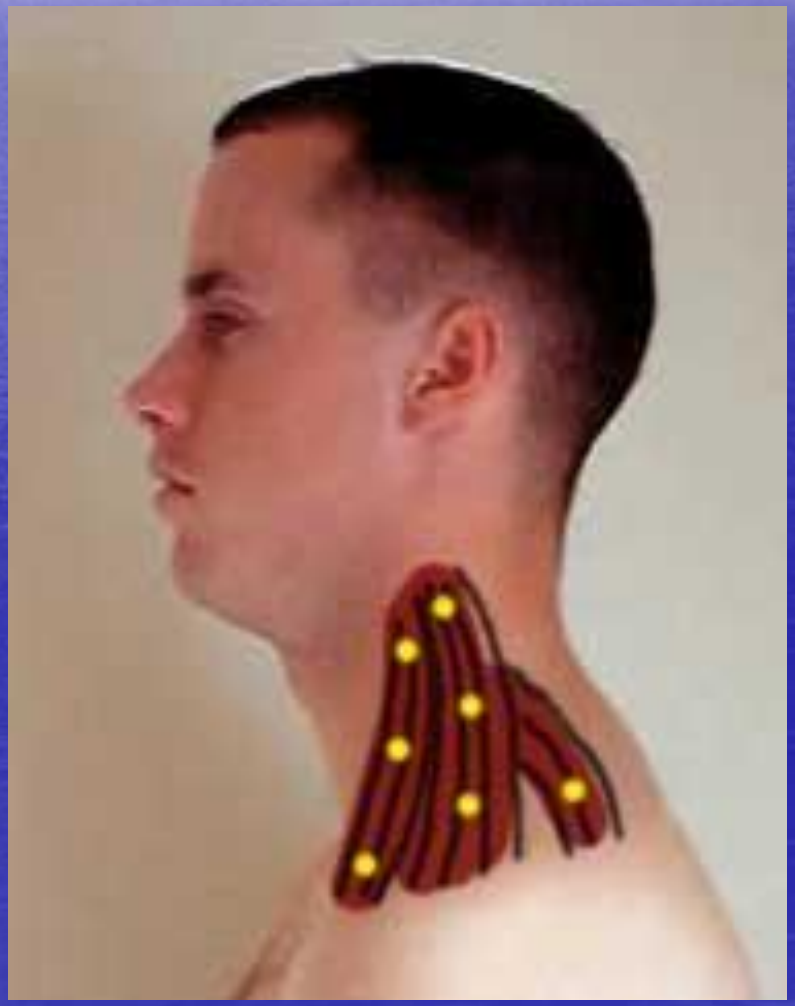


Levator scapula pain pattern

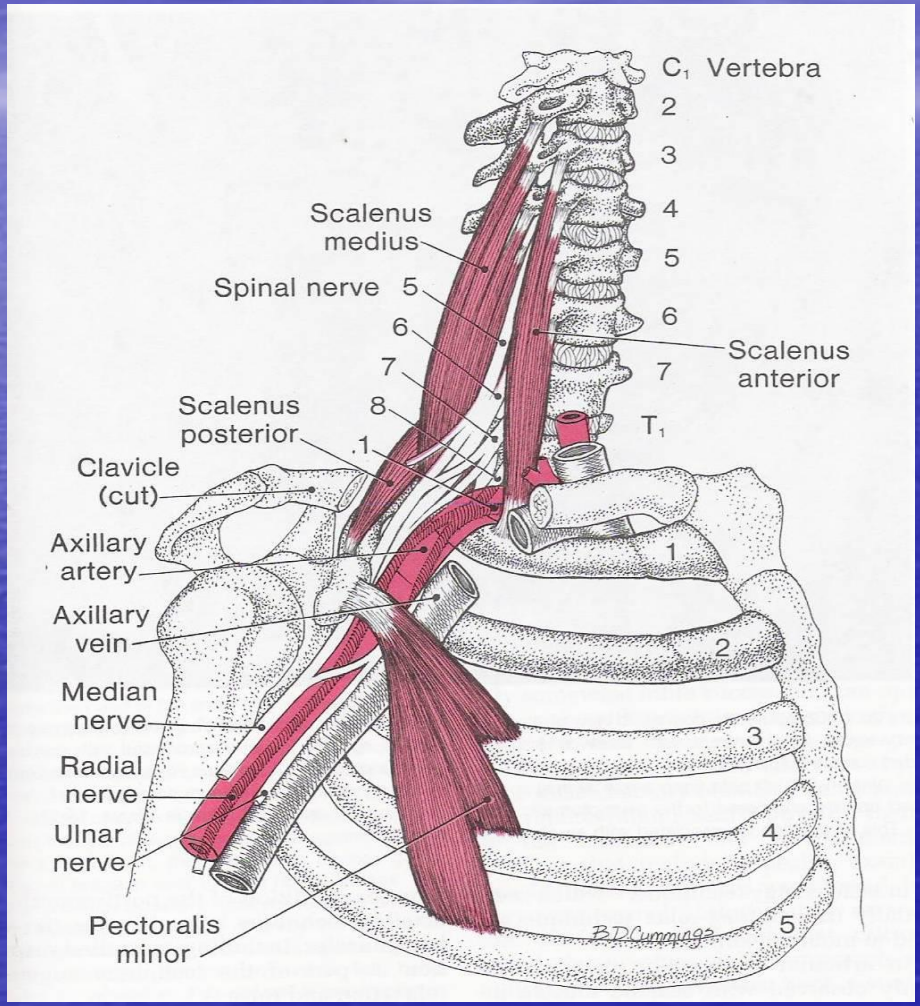


Levator scap stretch

Anatomy Scalene



Scalenes – origin and insertion



Pain Pattern Scalenes

TAKE HOME POINT

Medial Border Scapula Pain

… think..

SCALENE

Stretch Scalene

Putting it together - the big 4 muscles

- Sternocleidomastoid
- Levator scap
- Scalene
- Trapezius

"Musculoskeletal pain and Diet- is there a link"?
The Big 3 T's (Tease)

- Take the Hx –diet and systems review
- Tick the box- Ig A and Coeliac screen (FBC iron studies ferritin CRP consider DEXA)
- Try the challenge (rechallenge)

Avoiding Truth:
(The Scorner's Creed)

There is a principle
which is a bar against all information,
which is proof against all argument,
and which cannot fail to keep man
in everlasting ignorance.

That principle is
condemnation before investigation.

- Edmund Spencer

- Do you or your child feel….
- ! tired and exhausted ! unhappy with weight
- ! uncomfortable tummy ! not growing well
- ! bloating and gas troubles ! eating problems
- ! gastric reflux or heartburn ! lack energy
- ! diarrhoea or constipation ! weakness
- ! headaches or migraine ! runny nose and sinus problems
- ! feel depressed or moody ! chronic iron deficiency
- ! find it hard to think clearly ! osteoporosis or growing pains
- ! poor sleep ! dermatitis, eczema or bad skin
- ! hyperactive or cranky ! infertility
- ! autism ! mental health problems
- ! Attention Deficit Hyperactivity Disorder (ADHD)
- **If you can say "yes" to any of these questions, then you could very likely be gluten-sensitive.**

- 34yo woman, teacher (R) “SI joint “ pain 5/12, previous triathlete, wide spread pain +ve systems review and diet Hx (clue “IBS” 7yrs ago)
- 63yo woman wide spread pain 5 years, swollen joints, negative bloods , +ve systems review and diet Hx
- 21 yo female student, “fibromyalgic” intractable neck pain, + systems review and diet Hx
- 9 yo girl “ muscle aches and growing pains negative systems review, negative diet Hx

- Do you or your child feel….
- ! tired and exhausted ! unhappy with weight
- ! uncomfortable tummy ! not growing well
- ! bloating and gas troubles ! eating problems
- ! gastric reflux or heartburn ! lack energy
- ! diarrhoea or constipation ! weakness
- ! headaches or migraine ! runny nose and sinus problems
- ! feel depressed or moody ! chronic iron deficiency
- ! find it hard to think clearly ! osteoporosis or growing pains
- ! poor sleep ! dermatitis, eczema or bad skin
- ! hyperactive or cranky ! infertility
- ! autism ! mental health problems
- ! Attention Deficit Hyperactivity Disorder (ADHD)
- **If you can say "yes" to any of these questions, then you could very likely be gluten-sensitive.**

Key Tips and Useful sites

1:10 gluten sensitive

Gluten widespread effects (not just GI)

2/3 fail to have GI symptoms

Blood tests negative do not exclude

Remember the 3 Tease especially challenge and rechallenge

Consider biochemically similar foods (Soy coffee dairy potatoe rice

Eliminate SUGAR the sweetest way to DIE!!!
www.9stepstoperfecthealth

www.doctorgluten.com

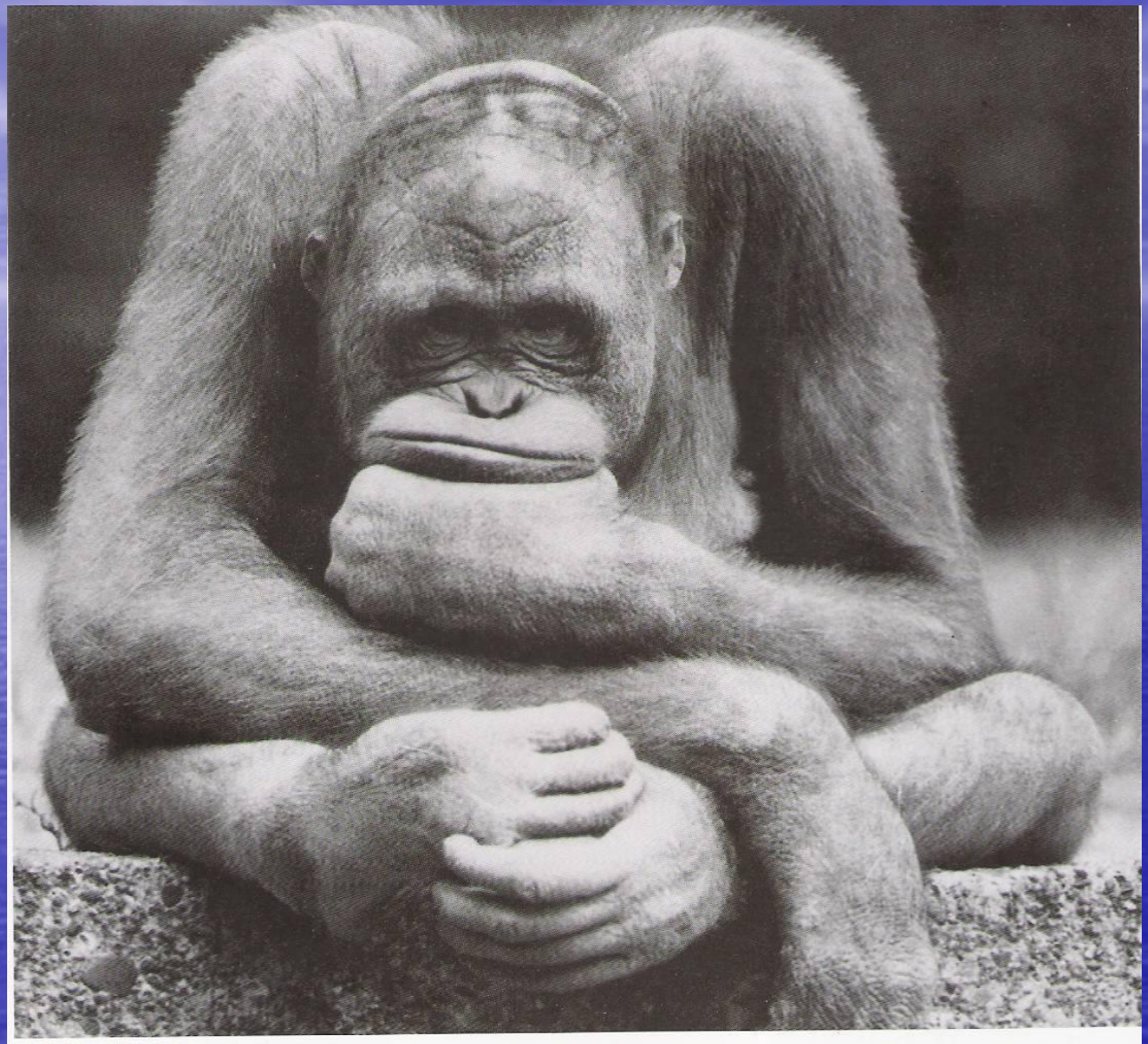
Quizzzzzzz time

- Whats the 10 point pain history acronym?

Socrates ad(s)

- Site
- Onset
- Character
- Radiation
- Alleviating factors
- Times of occurrence
- Exacerbating factors
- Severity
- Associated factors
- Disability scores
- (Systems review gives…… red flags)

What are the red flags?



Oh what to do, what to dooo?

VISION

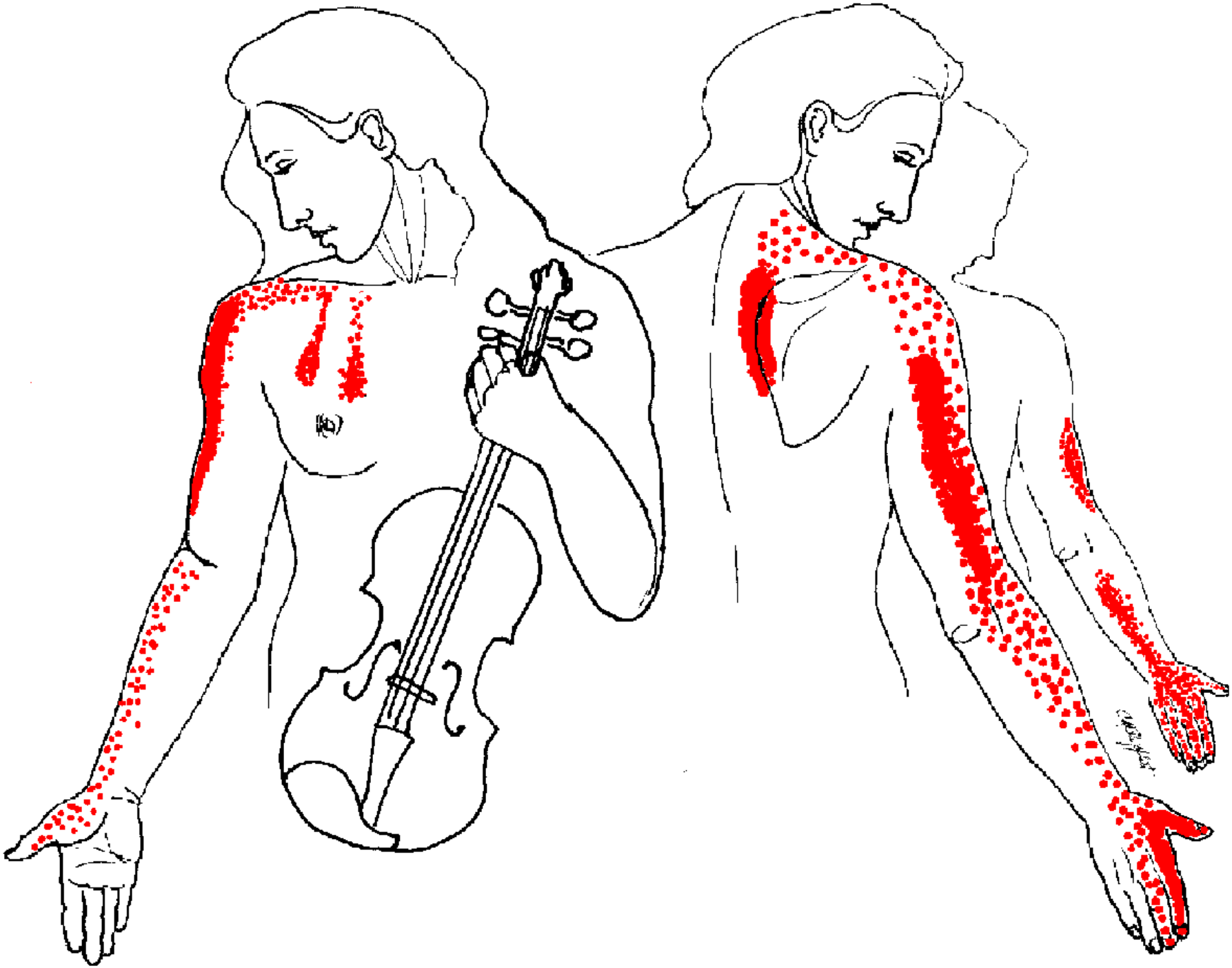
- Visceral/Vascular
- Infection
- Significant Fracture
- Inflammatory
- Other
- Neoplasm

Whats the best way to not miss red flags- history or exam?

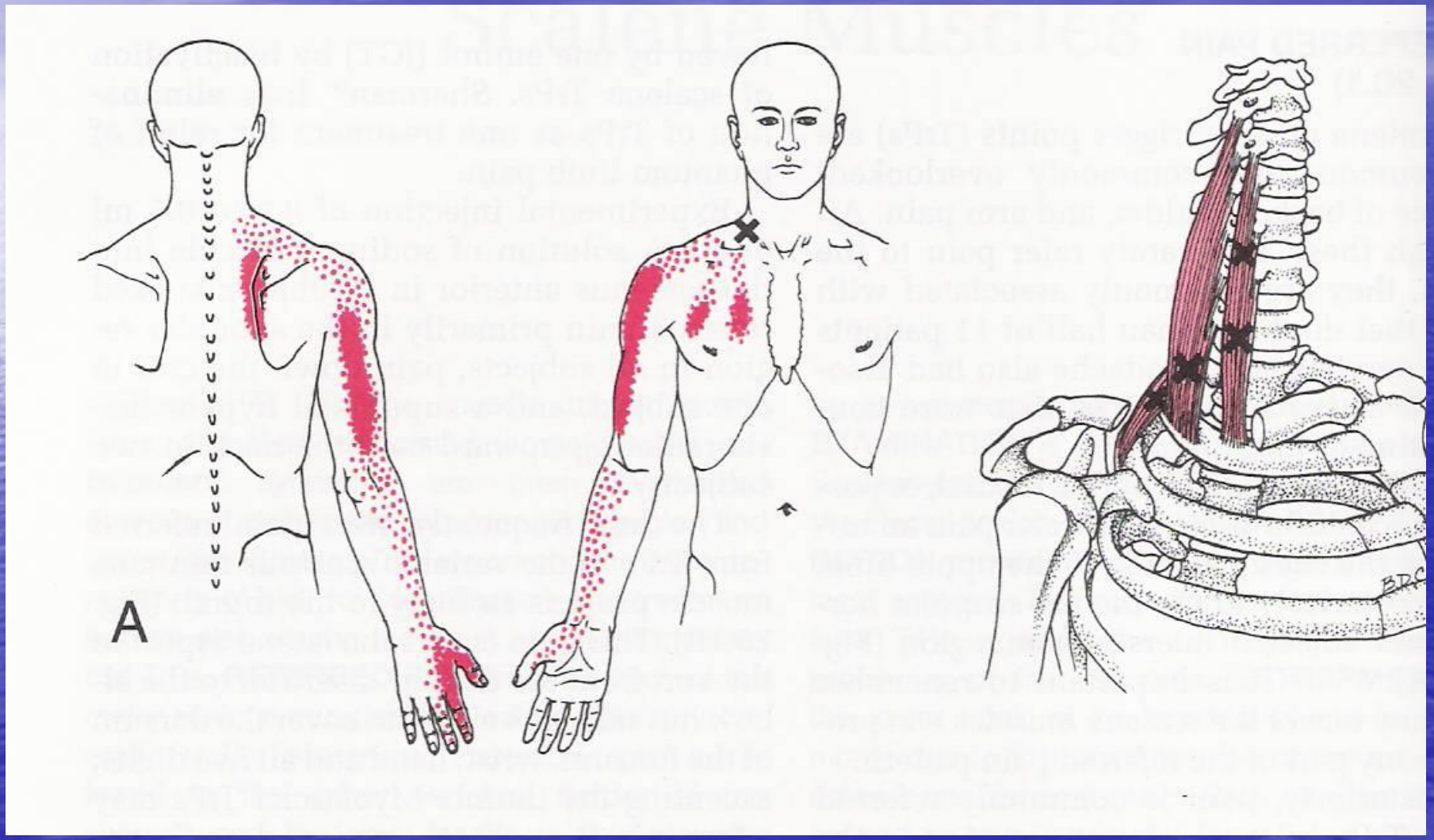
History (+/- MRI)

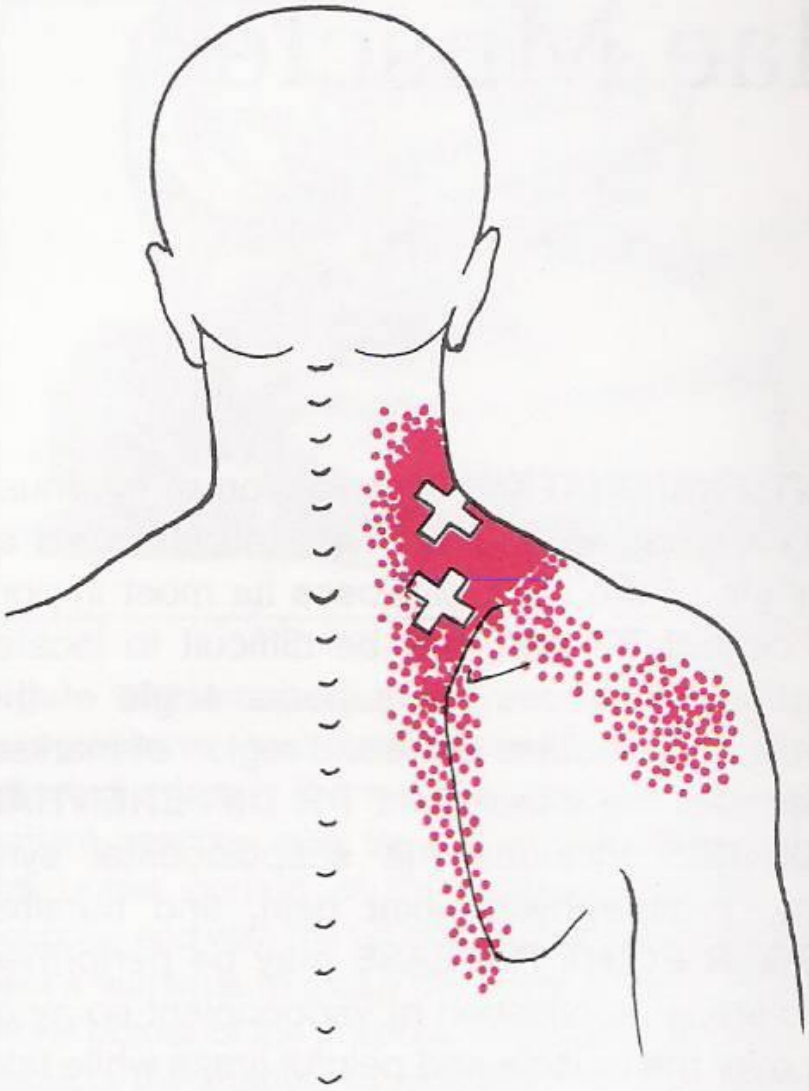
QUIZZZZzzzzzz Continued……

WHAT MUSCLE HAS THESE REFERRAL PATTERNS?

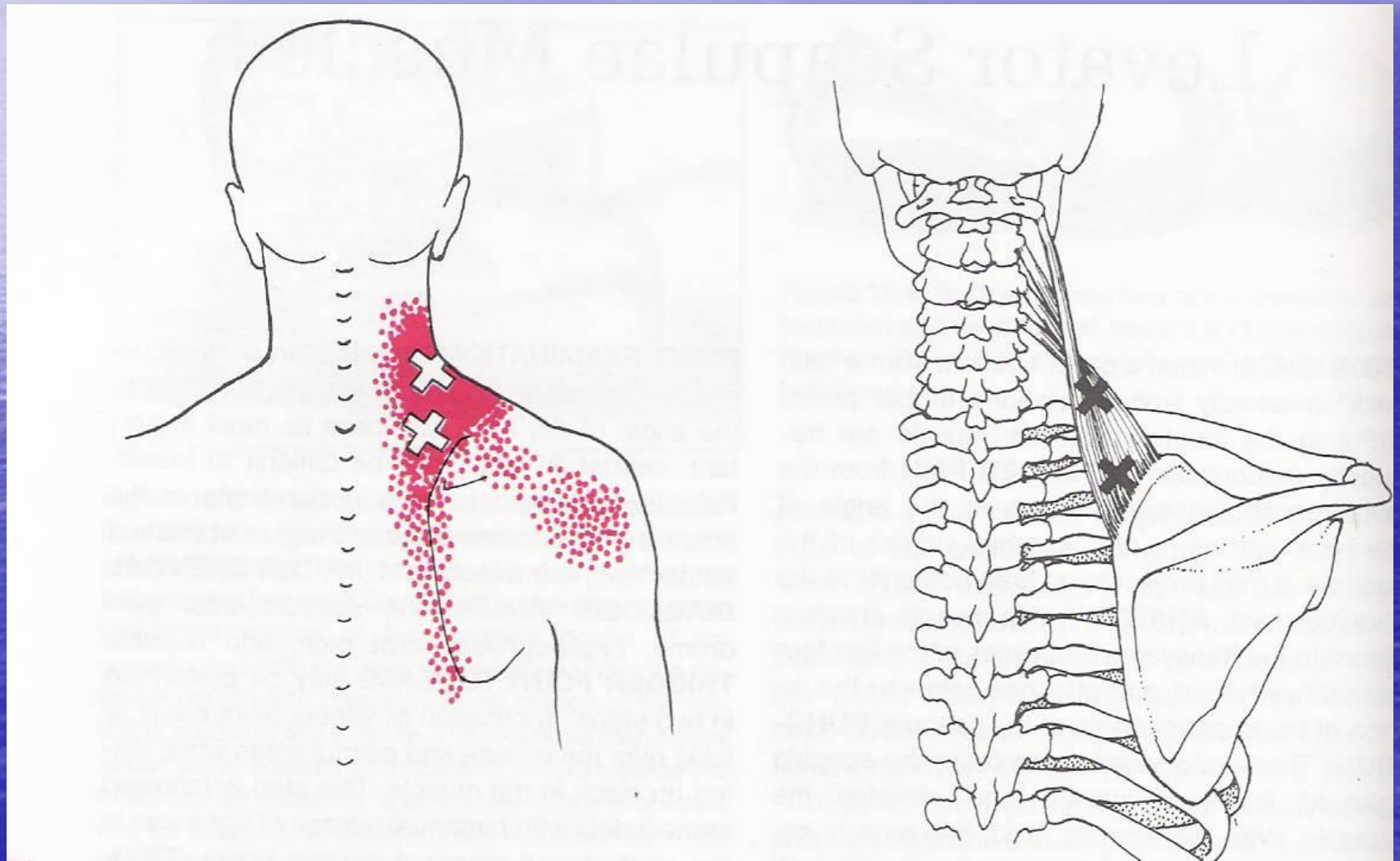


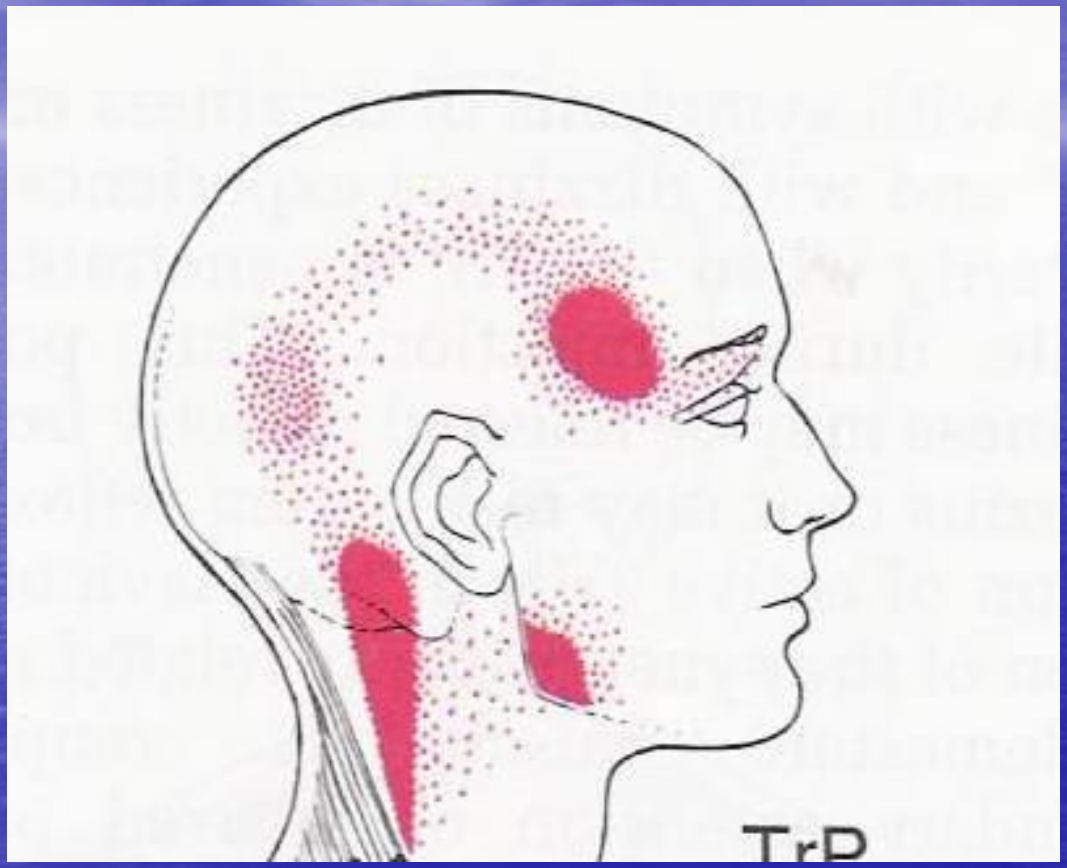
Scalenes – referral patterns



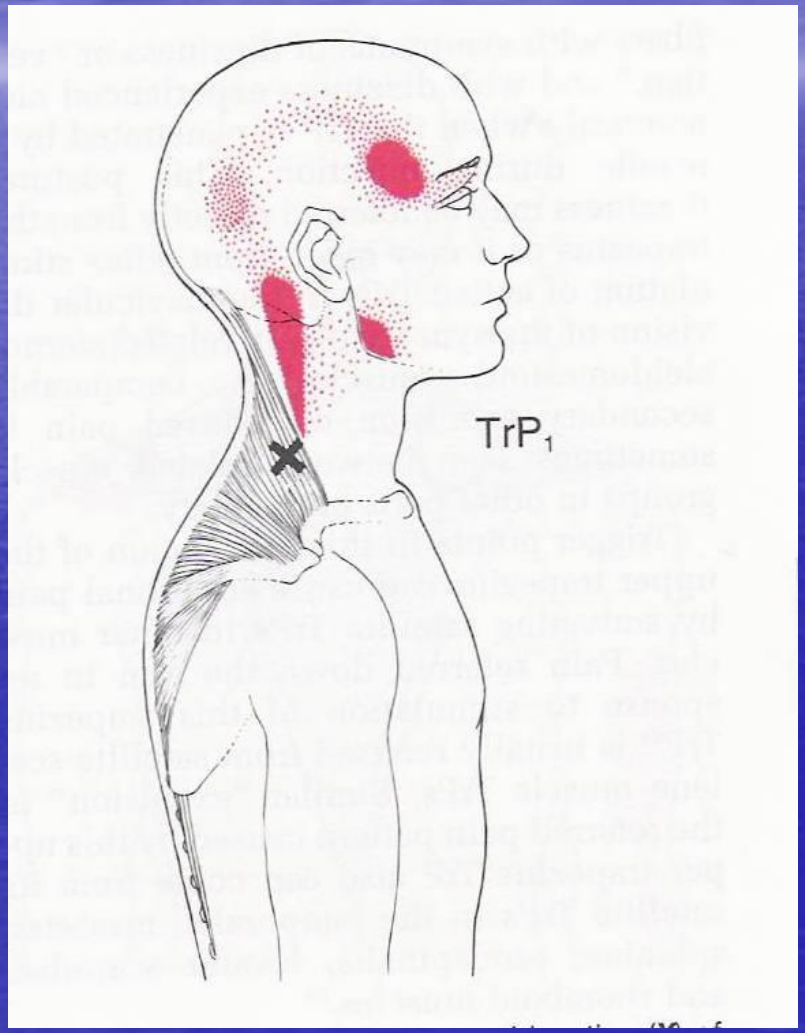


Levator Scapulae- referred pain patterns




TrP

Trapezius (upper vertical fibres) -referral pattern



Thank you – the end

Useful links

- http://www.triggerpointtherapist.com
- www.pressurepointer.com/PressurePointerManual.pdf