Lumbar radiculopathy – who to refer to and when

Wendy Field
Advanced Physiotherapy Practitioner

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Radiculopathy????

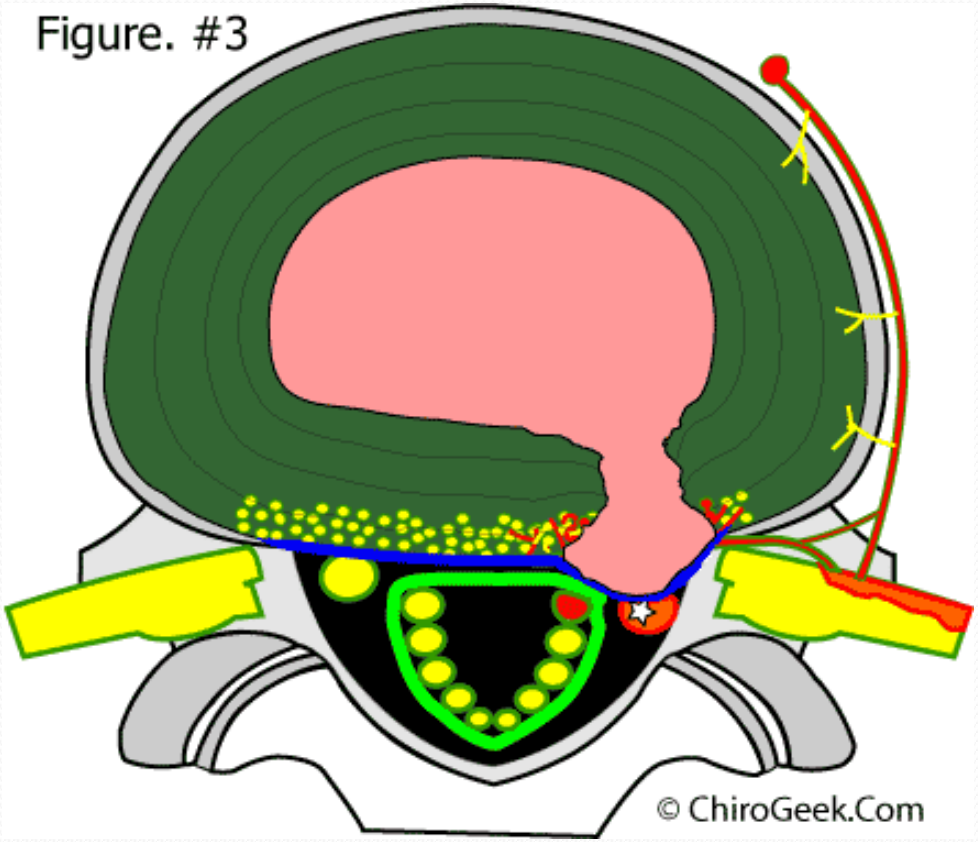
- Lumbar radicular pain is where the clinician suspects the pain is coming from a lumbar nerve root.
- Essentially we are looking at 2 different conditions…….

- Disc prolapse related nerve root irritation/ compression (sciatica)
- Spinal claudication/stenotic radiculitis

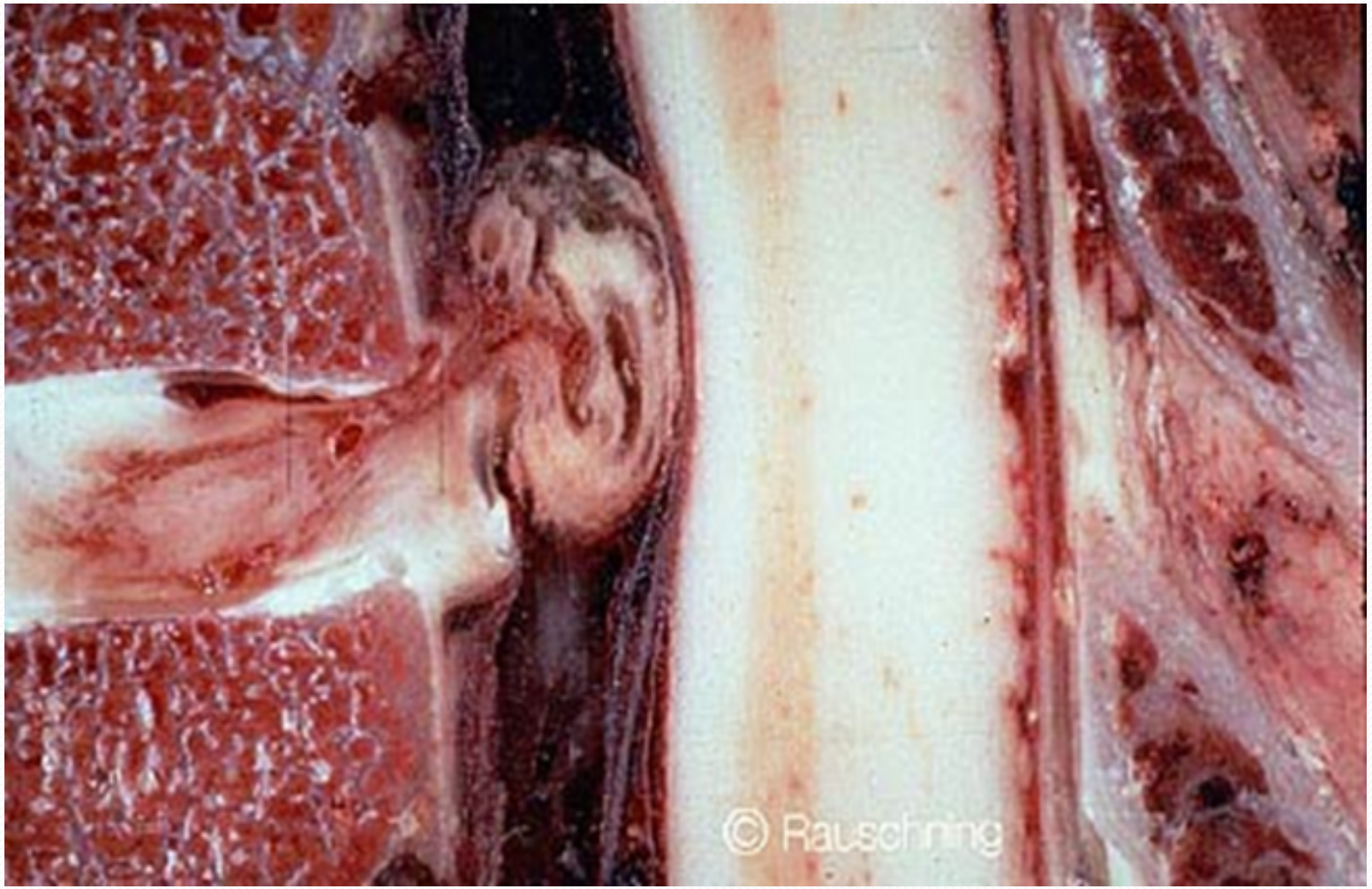
Radiculopathy????

- We use 'sciatica' to describe leg pain secondary to lumbosacral nerve root pathology rather than the terms 'radicular pain' or 'radiculopathy', although they are more accurate.
- This is because 'sciatica' is a term that patients and clinicians understand, and it is widely used in the literature to describe neuropathic leg pain secondary to compressive spinal pathology.

Disc prolapse



30% Asymptomatic 30-50 year olds have MRI evidence of disc protrusion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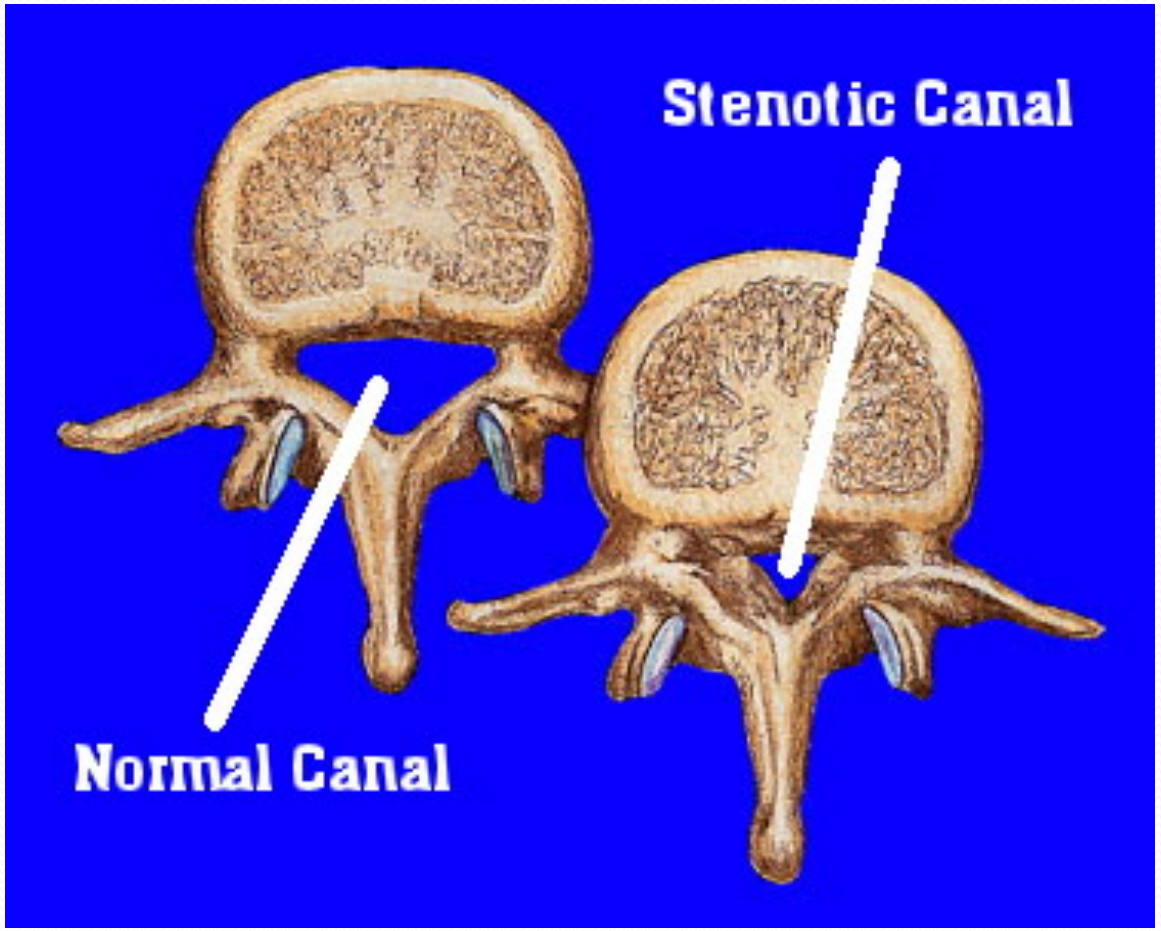
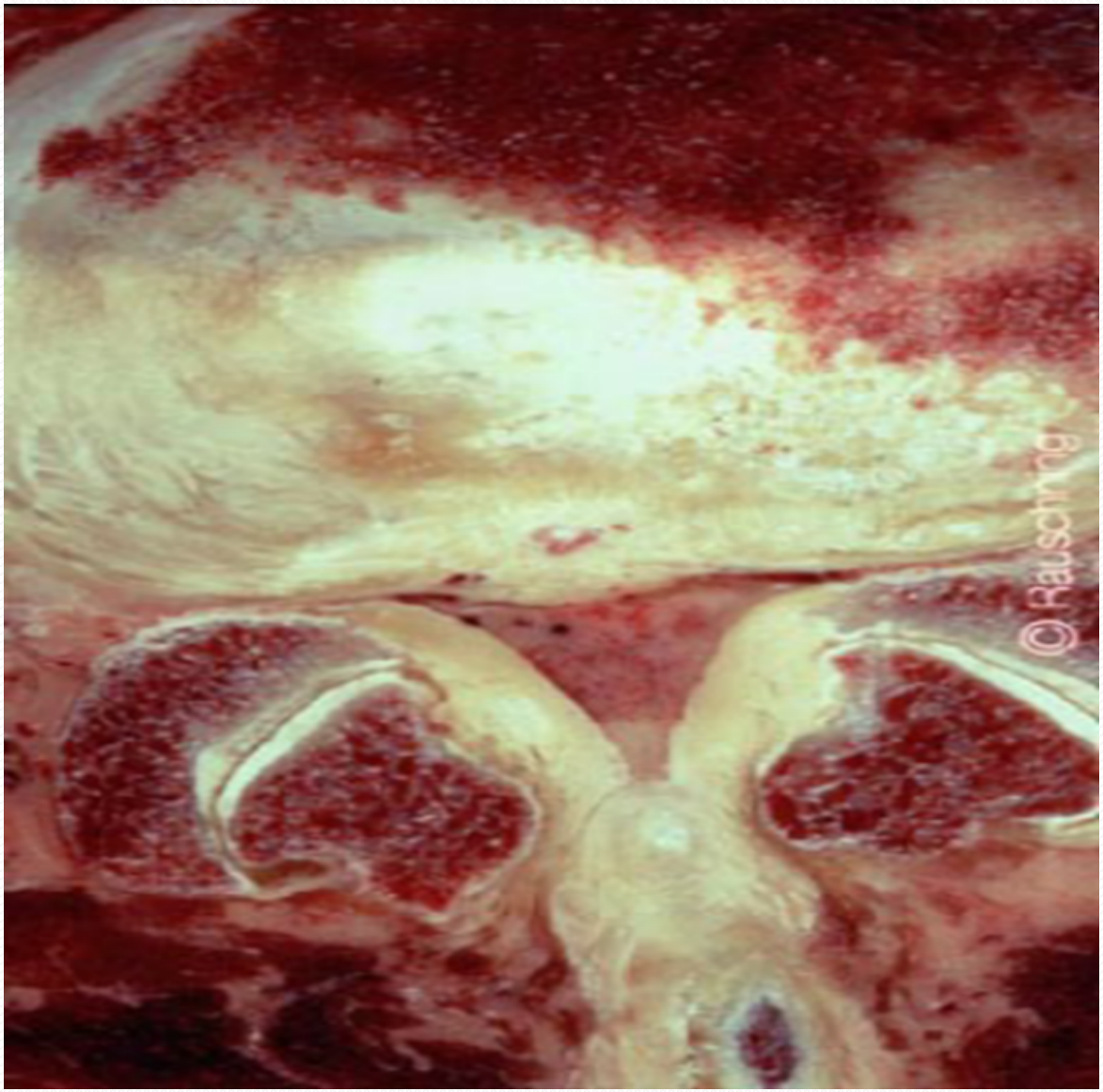
Definitions

- **Disc bulge**: General bulging of disc – NORMAL WITH AGEING.
- **Disc herniation (prolapse)**: Disc material is displaced and less than 25% of the circumference is involved.
- **Disc protrusion**: A type of herniation with broader neck than dome.
- **Disc extrusion**: A type of herniation where there is a broader dome than neck.
- **Disc sequestration**: When extruded disc material has no continuity with the parent disc, and is displaced away from the site of extrusion.

Spinal Stenosis

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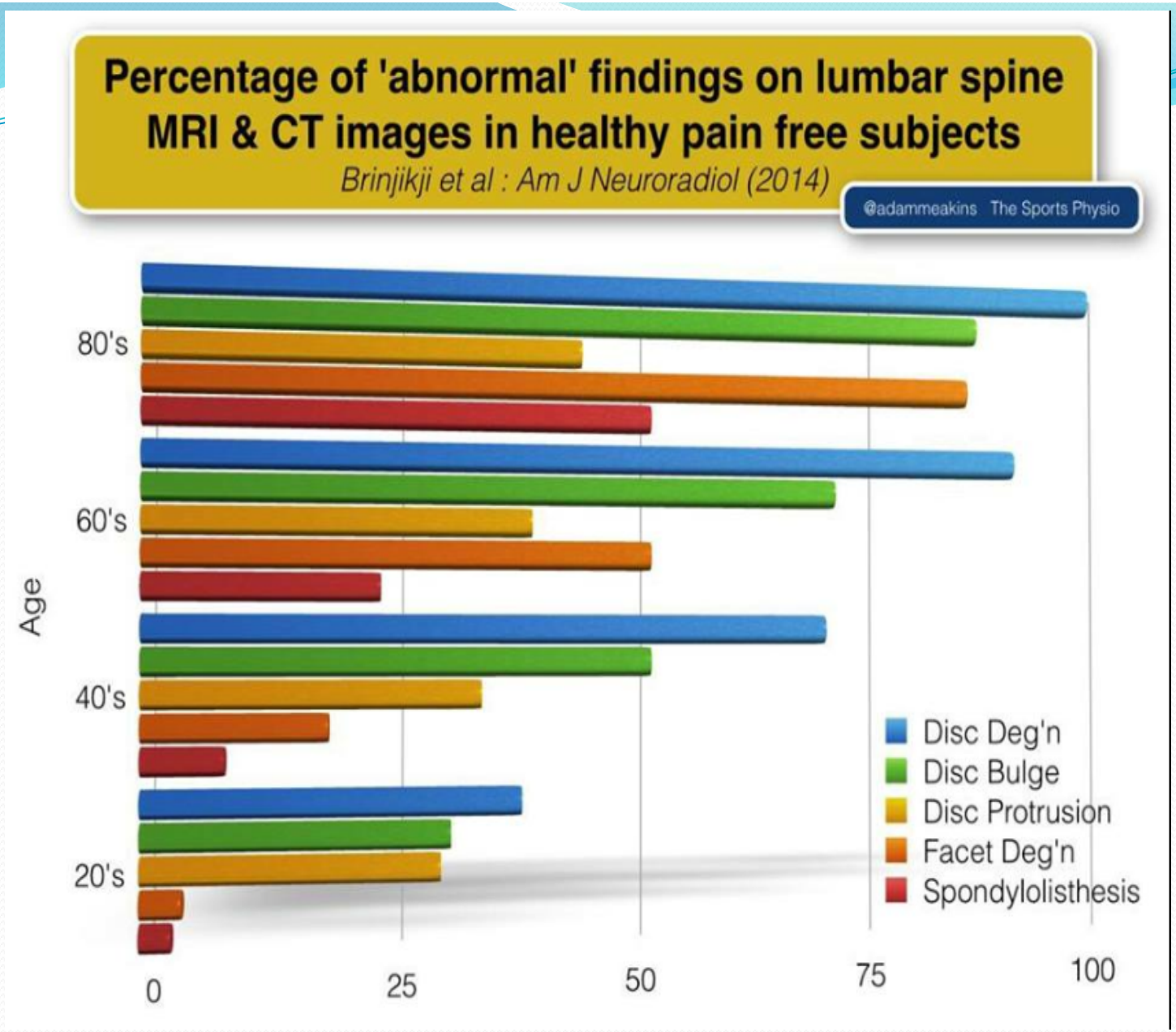


Remember you are diagnosing a patient not a scan : 1 in 3 people in their 40's will have an asymptomatic disc protrusion. Many more will have disc bulges and disc degeneration.

Natural history…..

- **Sciatica:**

1. 60-80% recover within 6 weeks

2. 70% of patients with severe sciatica who don't settle within 3 months will have pain at 1 year.

3. Motor radiculopathy and cauda equina syndrome tends to happen early on in presentation but can happen at any time

Natural history….

- **Spinal claudication**….

1. Benign. Most patients stay the same. A few will deteriorate, a few will actually improve.

2. Acute neurological deterioration rare.

(Lee et al 2015, Wessberg 2017)

The Assessment…..

Diagnostics…. Sciatica

- No isolated test has been shown to be reliable as a diagnostic tool.
- Sciatica is a complex condition requiring thorough subjective enquiry and examination and cross-correlation with radiology.
- Nazar H (2013. Meta-analysis of examination tests)

Diagnostics….

- There is no element of patient history that is consistently and reliably useful in predicting sciatica.
- SLR (straight leg raise) test has greatest sensitivity and the cross over SLR test the greatest specificity.

(Iverson 2013, Capra 2011, Van der Windt 2010, Vroomen 1999)

Diagnostics.. Spinal claudication

- No firm conclusions can be drawn regarding diagnostic accuracy of different tests due to poor study quality (see Kent and de Graaf)
- MRI shows the highest sensitivity
- The sensitivity of NCS is modest at best

- Radiating leg pain when standing and or walking show greatest sensitivity.

- Large likelihood ratio's and moderate sensitivity for bilateral buttock pain, absence of pain when seated, improvement on bending forward.

- In general, individual physical examination tests are not as useful as symptoms

(De Shepper et al, Spine, 2013)

NICE 2017…

NICE	Back pain +/- Sciatica:
1	Consider using risk Stratification from STarT Back Tool
2	Based on risk stratification: a) less intensive support if low risk b) more intensive support if high risk
4	Explain to patients imaging may not be needed in specialist setting
5	Consider imaging in specialist setting if it is likely to change management
6	Consider alternative diagnoses: new/changed symptoms/exclude specific causes
7	Provide advice & information to help self-management & encourage normal activities
8	Consider group exercise
13	Manual therapy as part of a treatment package including exercise +/- psychological therapy
19	Consider CBT psychological therapies as part of a treatment package including exercises
30	Consider a Combined Physical and Psychological Programme (CPPP)
31	Promote and facilitate return to work and normal activities of daily living
21-23	Consider oral NSAIDs for management of back pain with assessment, monitoring & gastro-protection, lowest effective dose & shortest time
24	Consider weak opioids +/- paracetamol **(acute** LBP only if NSAID not possible or ineffective)

NICE 2017….

Sciatica:
For recommendations on neuropathic pharmacology see CG 173
Epidural injections of local anaesthetic and steroid for acute and severe sciatica **Do not use epidural injections for neurogenic claudication in people who have central spinal canal stenosis.**
Refer for surgical opinion regardless of: BMI, smoking status, psychological distress
Consider spinal decompression if non-surgical treatment has not improved pain or function
Back pain +/- Sciatica: <u>Do not offer</u>
Routine imaging in a non-specialist setting
Belts, corsets, foot orthotics, rocker sole shoes
Traction
Acupuncture
Ultrasound
PENS or TENS
Interferential therapy

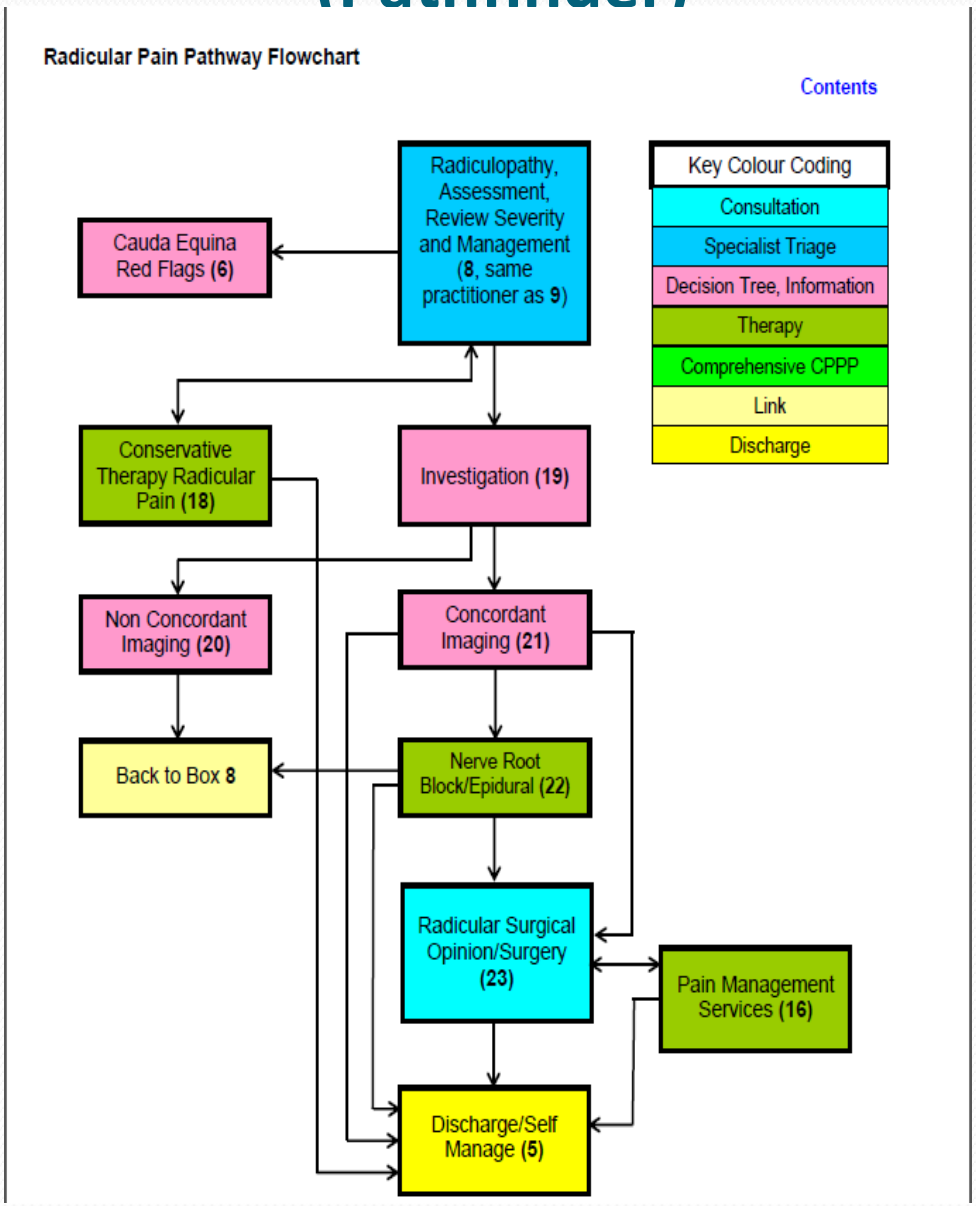
National Low Back and Radicular Pain Pathway 2017 (Pathfinder)

- **Objectives of the Pathway**

- • Identification of serious pathology, so called “red flags”, and appropriate management.
- • Fast track treatable specific pathology such as a prolapsed intervertebral disc.
- • Provision of effective and expeditious treatment for non-specific LBP.

- **The key features of the pathway for radiculopathy are:-**
- • The specialist triage practitioner.
- • For acute radiculopathy to provide rapid access to MRI (or CT if contraindicated)
- • To provide rapid access to a booked epidural or nerve root block
- • No x-rays of the lumbar spine to be undertaken by general practitioners or other practitioners for back or radicular pain.
- • No direct access to MRI scans by general practitioners with the exception of “red flags”.
- • To de-commission treatments which are recommended against by NICE 2016 such as, acupuncture, therapeutic injections for back pain including facet joint injections, TENS and other treatments.

National Low Back and Radicular Pain Pathway 2017 (Pathfinder)



Emergencies…

Cauda Equina Syndrome

- **Definition**
- ‘A patient presenting with acute back pain
- and/or leg pain with a suggestion of a
- disturbance of their bladder or bowel
- function and/or saddle sensory disturbance
- should be suspected of having a CES.’
- (BASS 2015)

Cauda Equina Syndrome Groups

(Todd & Dickson, 2016)

CESS suspected	Bilateral radicular pain (progressing unilateral)
CESI incomplete	Urinary difficulties of neurogenic origin, altered urinary sensation, loss of desire to void, poor urinary stream, need to strain to micturate
CESR retention	Painless urinary retention and overflow incontinence
CESC complete	Loss of all CE function, absent perineal sensation, patulous anus, paralysed insensate bladder and bowel

'The probability of a CES patient deteriorating, with what speed and to what level is not predictable

Same day, no delay admission

- Major motor radiculopathy (loss of single leg antigravity tip toe/heel walk/single leg dip)
- MSCC with neuro symptoms/signs
- Spinal infection
- Sphincter failure incipient <48 hours, or established > 48 hours.
- AS with new pain
- Spontaneous epidural haematoma
- (Spinal Pathfinder 2017)

Urgent (within 1/52)

- Osteoporotic fracture with significant pain at 8/52
- MSCC without neurological deficit

- (Spinal Pathfinder 2017)

Routine……

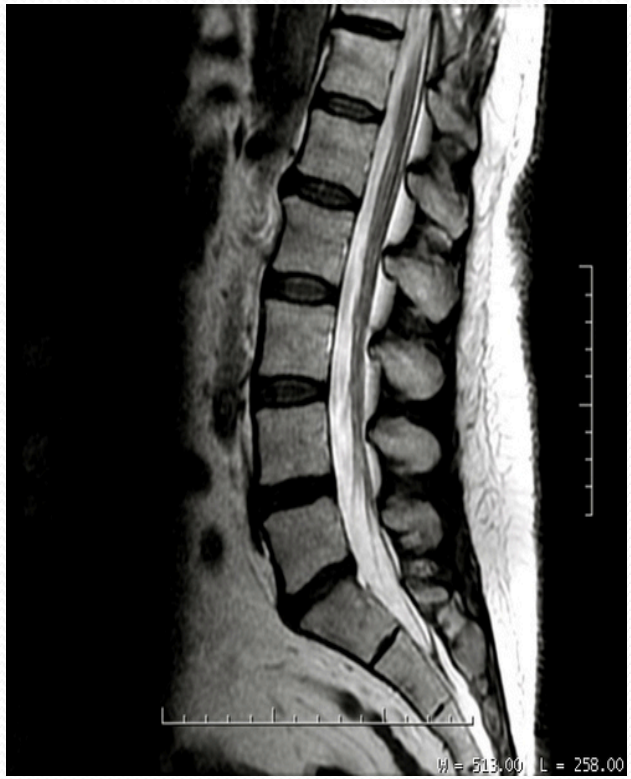
The variability in severity and clinical course makes rigid rules impossible.

Do not allow a person's BMI, smoking status or psychological distress to influence the decision to refer them for a surgical opinion for radicular pain.

When to scan for sciatica….

- MRI from 4-6 weeks onwards (in absence of red flags)

- MRI within 1 week if red flags present



Spinal Pathfinder 2017

- Do not routinely offer imaging in a non-specialist setting for people with low back pain with or without sciatica.
- Explain to people with low back pain with or without sciatica that if they are being referred for specialist opinion, they may not need imaging.
- Consider imaging in specialist settings of care (for example, a musculoskeletal interface clinic or hospital) for people with low back pain with or without sciatica only if the result is likely to change management.

Physiotherapy…Sciatica

- Conflicting and generally poor evidence base.
- Discuss analgesia and other pain management strategies.
- Provide consistent message to remain active and foster a positive attitude with realistic expectations.
- Consider treatment options that could include:
- **Exercise**:
- **Manual therapy**:
- **Low intensity CPPP**: (NICE guidelines)

Interestingly……

- For persistence of radicular pain one high-quality study reported negative outcome expectancies, pain-related fear of movement, and passive pain coping as predictors.

Predictors of Persistent Neuropathic Pain--A Systematic Review (Boogard 2015)

Physiotherapy.. Spinal claudication

- No firm evidence to guide, but given benign natural history, it is not unreasonable to try.
- Be guided by patient symptoms, severity of disability and preference.
- Wheeled walker, pacing, and frequent sitting/bending (NICE 2016)
- BOOST trial

Nerve root injections/epidurals

- For severe, non-controllable radicular pain in prolapsed intervertebral disc **early** in the clinical course for symptom control.
- For treatment of lumbar radicular pain with the aim of avoiding surgery – patient and/or clinician choice.
- Leg pain and uncomfortable paraesthesia. Not numbness and definitely not LBP.

Pathfinder 2017

Sciatica and surgery…..

- Predominating leg pain
- Appropriate level of functional restriction
- Failure of conservative Rx/ natural history
- Accepting definition of ‘good outcome’
- Understand and accept risks

- Recurrent episodes of significant leg pain

Sciatica and surgery…

- Relief of leg pain is primary aim of surgery
- Urgent/emergency surgery for CES or new major motor radiculopathy
- Otherwise 8-12 weeks if non tolerable radicular pain (Pathfinder 2017)
- Surgery is not aimed at restoring power or sensation in majority
- <50% show improvement in objective neurological deficits

Outcomes??

- Majority of studies show significant benefit in various parameters at 3/12, but no real difference compared to non operative treatment beyond 1 year. Wide variance in reports.

(see NASS 2014, NICE 2016, Deyo NEJM 2016, Webber 1983, Osterman 2006, Weinstein 2006, Butterman 2004, Hoogland 2008)

Surgery for spinal claudication/ stenosis….

- Conflicting evidence (surprise, surprise)
- Evidence overall stronger for decompression than non-operative treatment.
- Severe pain and disability a good pre-operative predictor of good outcome
- Recent emerging evidence that fusion may add little value, even with spondylolisthesis.

(Weinstein 2010, Cochrane 2016, Jarett 2012, Shen 2018, Dijkerman 2018)

- Indications for referral similar to sciatica
- Patient will need standing AP and lateral x-rays to assess deformity/instability.
- Older patient group may have greater co-morbidity.
- NICE 2016 recommends against lumbar epidurals - contentious

SUMMARY

Take home messages…..

- Much conflicting evidence, so pay particular attention to patient history.
- Practically many disc patients resolve spontaneously and many stenotics can self manage.
- Non-operative treatment +/- injections initial management unless red flags or unmanageable leg pain.

Take home messages…..

- In absence of red flags, consider MRI from 4-6 weeks
- Injections more effective in short term - earlier use rather than later
- Surgery from 12 weeks onwards unless red flags.


THANK
YOU