The Primary Care Rheumatology and Musculoskeletal Medicine Society

Low Back Pain and Sciatica

What works and what doesn't work for managing low back pain and sciatica in primary and community care

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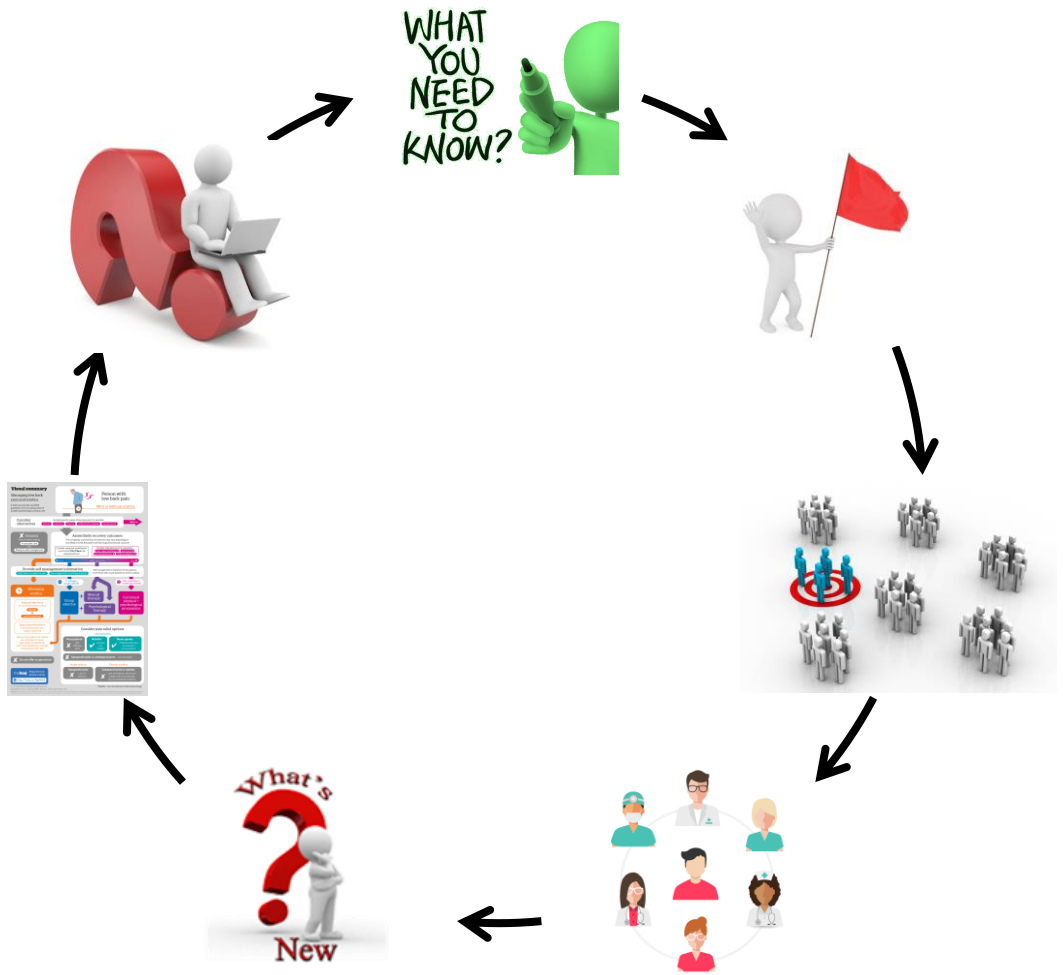
Declarations of interest

- Dr Ian Bernstein was a member of the NICE guideline committees for chronic pain, low back pain and sciatica, and osteoarthritis 2011-21. He is chair of the NICE guideline committees for early management of head injuries and neurorehabilitation 2020-21
- Dr Ian Bernstein is an author of Bernstein IA, Malik Q, Carville S, Ward S. Low back pain and sciatica: summary of NICE guidance. *BMJ* 2017:i6748. doi:10.1136/bmj.i6748.
- Dr Ian Bernstein is a co-author of Roberts E, et al. Paracetamol: not as safe as we thought? A systematic literature review of observational studies. *Ann Rheum Dis* 2015;0:1–8. doi:10.1136/annrheumdis-2014-206914

Outline

Based on NICE NG59

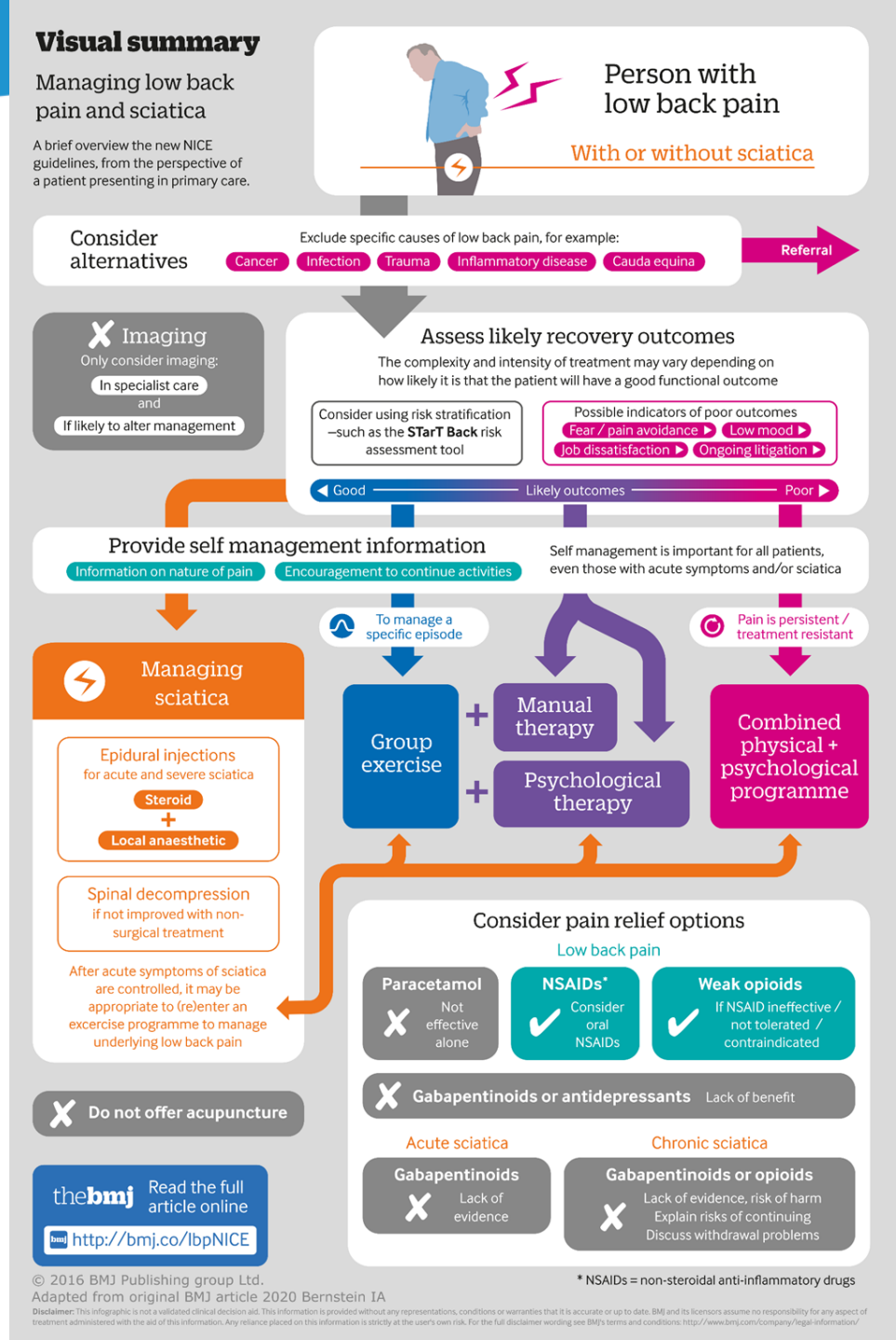
- What you need to know
- Serious pathology
- Population health
- Clinical management
- What's new
- Summary
- Questions



Core presentation plus options

- Core presentation *40 mins*
- Options *(please vote or put in chat)*
  - Cauda equina syndrome – draft national guidance
  - What's the new evidence since NICE NG59 2016?
  - Epidemiology and risk factors
  - Radiofrequency denervation
  - 'Do not use' acupuncture, electrotherapies, manual therapies, etc

What you need to know



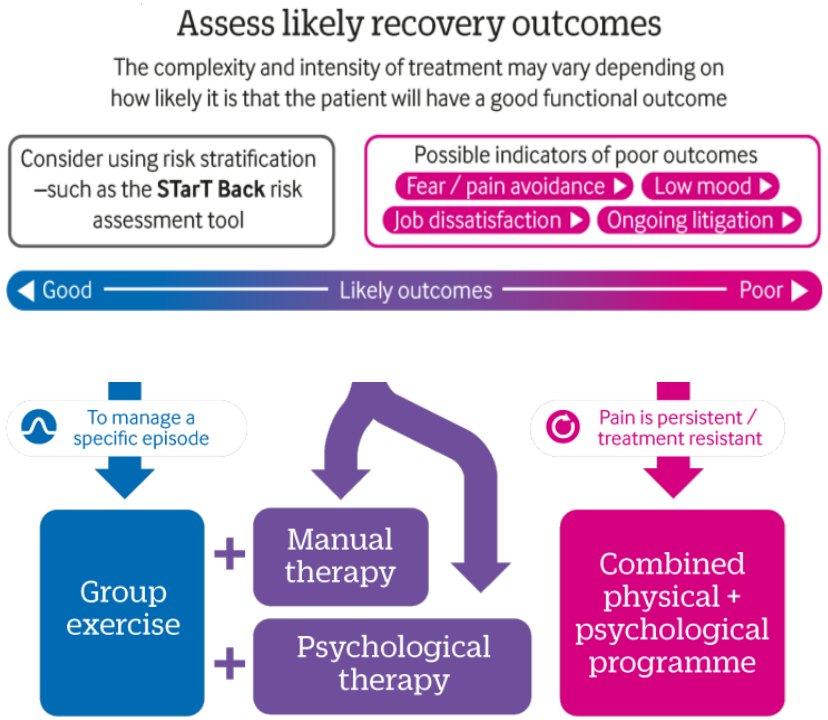
BMJ 2017, Bernstein 2020
https://tinyurl.com/NICElbp

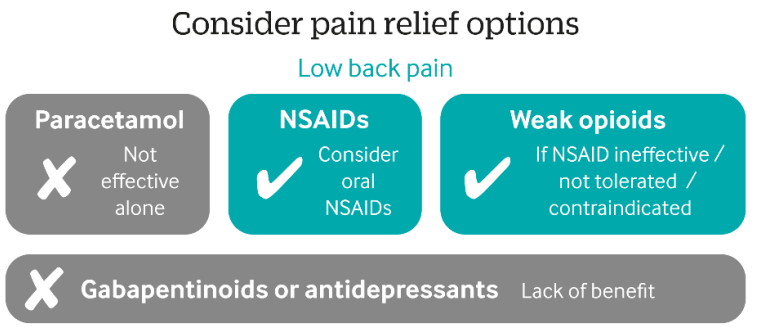
Low back pain and sciatica: What you need to know

- Risk stratification
- Group exercise and non-invasive treatments
- Pharmacological management

NICE NG59 2020, Bernstein BMJ 2017

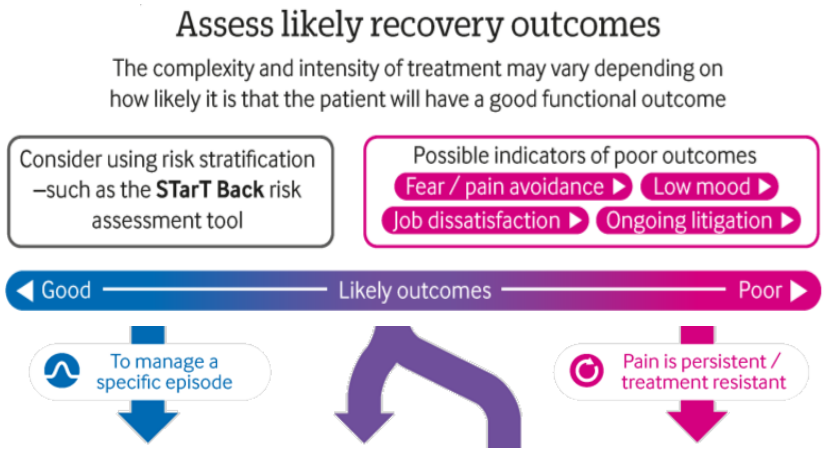
Low back pain and sciatica: What you need to know





NICE NG59 2020, Bernstein BMJ 2017

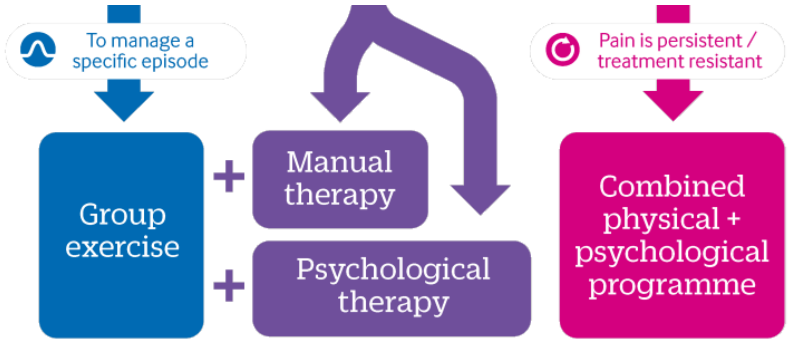
Risk assessment
Stratified management



- Consider risk stratification (e.g. using the STarT Back tool) to target more intensive support at initial presentation for those less likely to recover quickly

NICE NG59 2020, Bernstein BMJ 2017

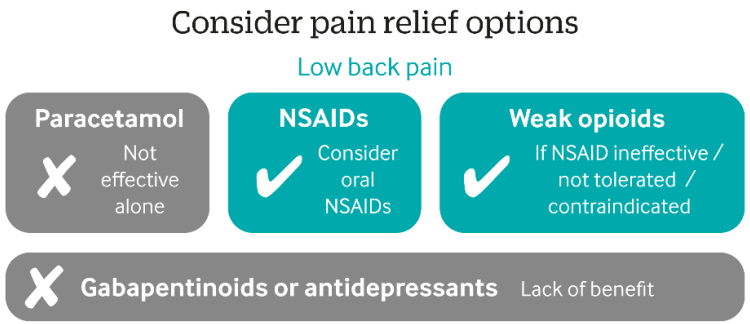
Group exercises and Non-invasive treatments



- Consider exercises such as stretching, strengthening, aerobic, yoga or Tai Chi in a group setting for all patients with low back pain and sciatica as the main component of non-invasive treatment
- Manual therapy and psychological approaches should be recommended only alongside an exercise programme
- Acupuncture or electrotherapies should not be recommended

NICE NG59 2020, Bernstein BMJ 2017

Pharmacological management
Low back pain



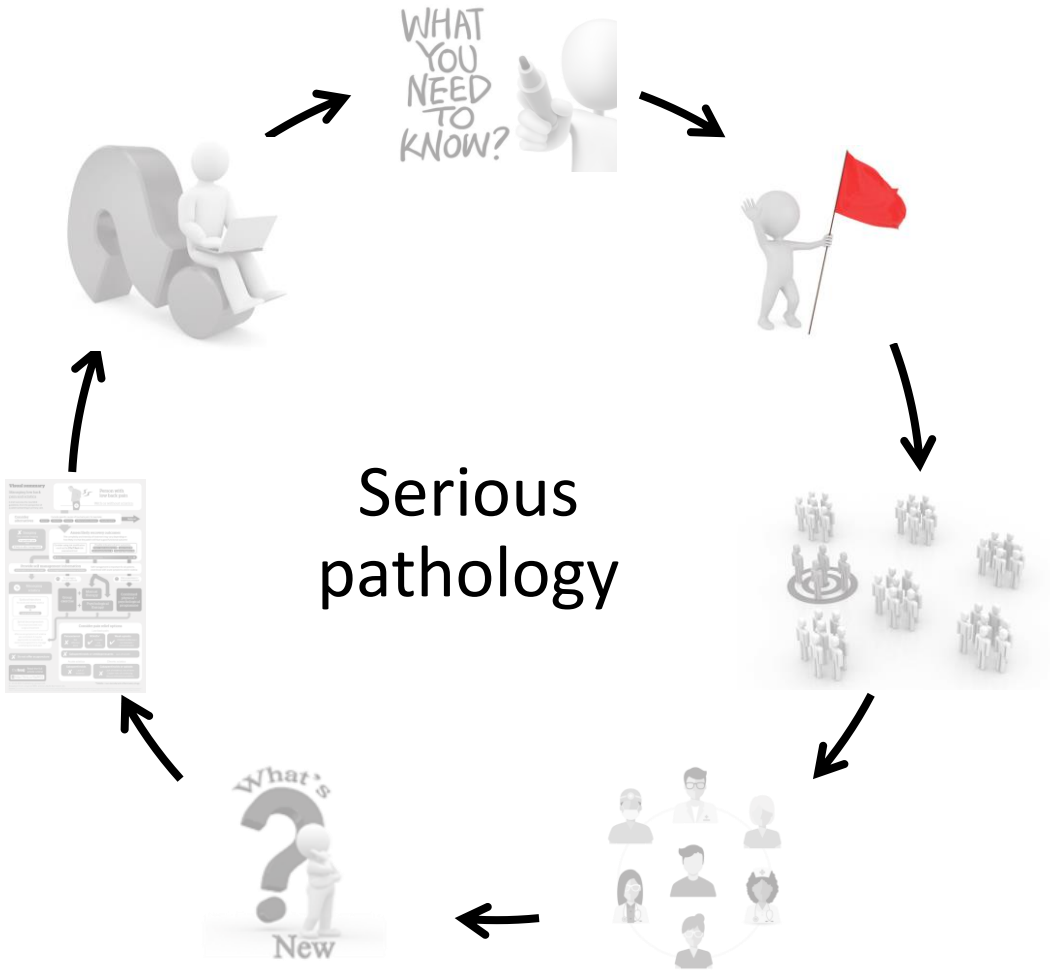
- Consider oral non-steroidal anti-inflammatory drugs (NSAIDs)… at the lowest effective dose for the shortest possible period of time
- Consider a **weak** opioid (with or without paracetamol) where an NSAID is contraindicated, not tolerated or has been ineffective
- Do not offer paracetamol alone for low back pain
- Do not offer opioids for managing **chronic** low back pain
- Do not offer selective serotonin reuptake inhibitors, serotonin–norepinephrine reuptake inhibitors or tricyclic antidepressants
- Do not offer gabapentinoids or antiepileptics

NICE NG59 2020, Bernstein BMJ 2017

Pharmacological management
Sciatica

- Do not offer gabapentinoids, other antiepileptics, oral corticosteroids or benzodiazepines for managing sciatica as there is no overall evidence of benefit and there is evidence of harm
- Do not offer opioids for managing chronic sciatica
- If a person is already taking opioids, gabapentinoids or benzodiazepines for sciatica, explain the risks of continuing these medicines
- As part of shared decision making about whether to stop opioids, gabapentinoids or benzodiazepines for sciatica, discuss the problems associated with withdrawal with the person
- Be aware of the risk of harms and limited evidence of benefit from the use of non-steroidal anti-inflammatory drugs (NSAIDs) in sciatica

NICE NG59 2020, Bernstein BMJ 2017


WHAT YOU NEED TO KNOW?
What's New
Serious pathology

Case 1: Ms Briggs
Serious underlying pathology

- Midwife rings you in surgery. Patient is 8 days postnatal with back and low abdominal pain walking around, difficult to pass urine, constipated, pain and cold feeling left thigh, no fever
- GP/FCP Exam: No fever, pulse 100, lochia normal, breast feeding OK, lower segment Caesarean section (LSCS) wound OK, reduced sensation anterior L thigh, SLR 70° bilaterally
- What is the differential diagnosis?
- What would you do next?
- Patient admitted by GP next day with urinary retention. MRI scan to exclude epidural/spinal abscess shows central disc prolapse L4/5 with cauda equina compression.
- Decompression unsuccessful

Chat

Chat

Bernstein, Bourke 2022

Serious underlying pathology

What happened to red flags?

- Most single features in the history have poor predictive accuracy for serious underlying pathology
- Single features that should raise suspicion
  - Cancer that can metastasise to bone
  - Trauma that could cause a fracture
  - Sphincter disturbance or perianal loss of sensation
- Look at the whole clinical picture, considering additional past history and examination findings
- Further investigation and referral are indicated if strong suspicion of serious underlying pathology
- Serious underlying pathology is not common

Discuss

Underwood 2013, CKS 2009

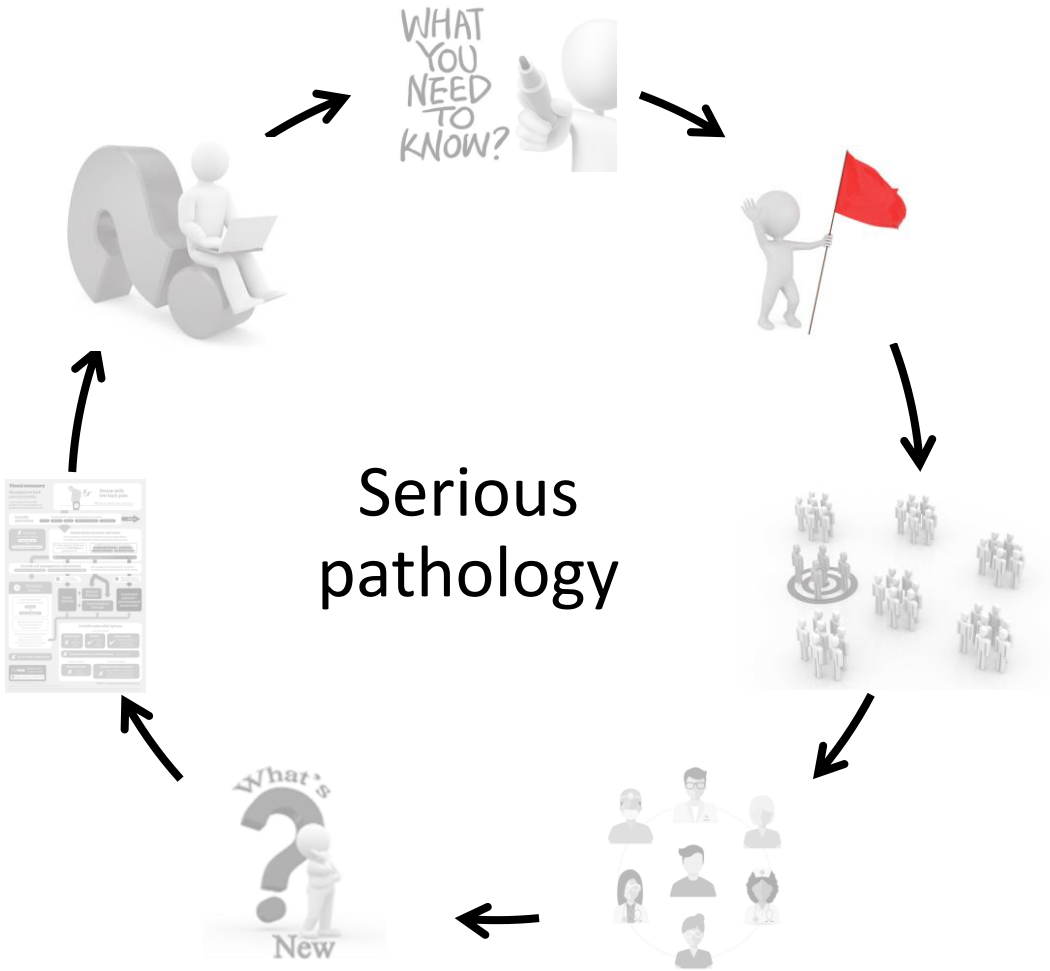
Causes of Low Back Pain in Primary Care

Non-specific LBP (common age 35-55)	85%
Compression fractures	4%
Tumour	1%
Prolapsed intervertebral disc	1–3%
Cauda equina syndrome	0.04%
Ankylosing spondylitis, Spinal infections	<1% each

Low Back Pain Acute, BMJ Clinical Evidence 2004, Deyo 1992

Serious Pathology – Types

- Severe or Progressive Neurology
  - Cord compression
  - Cauda equina syndrome
- Infection
- Cancer
- Fracture
- Soft Tissue Trauma
- Inflammatory Disorders
- Vascular


WHAT YOU NEED TO KNOW?
Serious pathology
What's New

National CES pathway?

- High levels of litigation and plethora of local arrangements
- Healthcare Safety Investigation Branch report 2021
  - National professional bodies to develop a decision-making tool to support the identification of patients who need an immediate MRI
  - NHS England and NHS Improvement develops a national cauda equina syndrome pathway. This should define the safety-critical elements of the pathway and highlight areas that can be adapted locally

https://www.hsib.org.uk/

Cauda Equina Syndrome – draft national pathway

Type	Most common symptoms	Prognosis
CES-Suspected	Bilateral radiculopathy	Risk of progression to CES-I Or CES-R. Good prognosis with treatment
CES-Incomplete	Impaired perineal sensation and some sphincter disturbance. Some voluntary control is maintained	Risk of progression to CES-R. Reasonable prognosis with early treatment
CES-Retention	Painless urinary retention and loss of sphincter function	Serious disability. Poor prognosis even with early treatment

https://future.nhs.uk/NationalMSKHealth/view?objectId=32762320

Cauda Equina Syndrome – draft national pathway

- No set clinical pattern
- Red flags have poor diagnostic accuracy
- Perianal sensation testing useful, digital rectal examination not necessary
- Negative examination findings do not rule out cauda equina syndrome if positive symptoms in the history

- Difficulty initiating micturition or impaired sensation of urinary flow
- Perianal, perineal or genital sensory loss S2-S5 dermatomes
- Severe or progressive neurological deficit of the legs, such as major motor weakness with knee extension, ankle eversion, or foot dorsiflexion
- Loss of sensation of rectal fullness
- Erectile dysfunction

https://future.nhs.uk/NationalMSKHealth/view?objectId=32762320

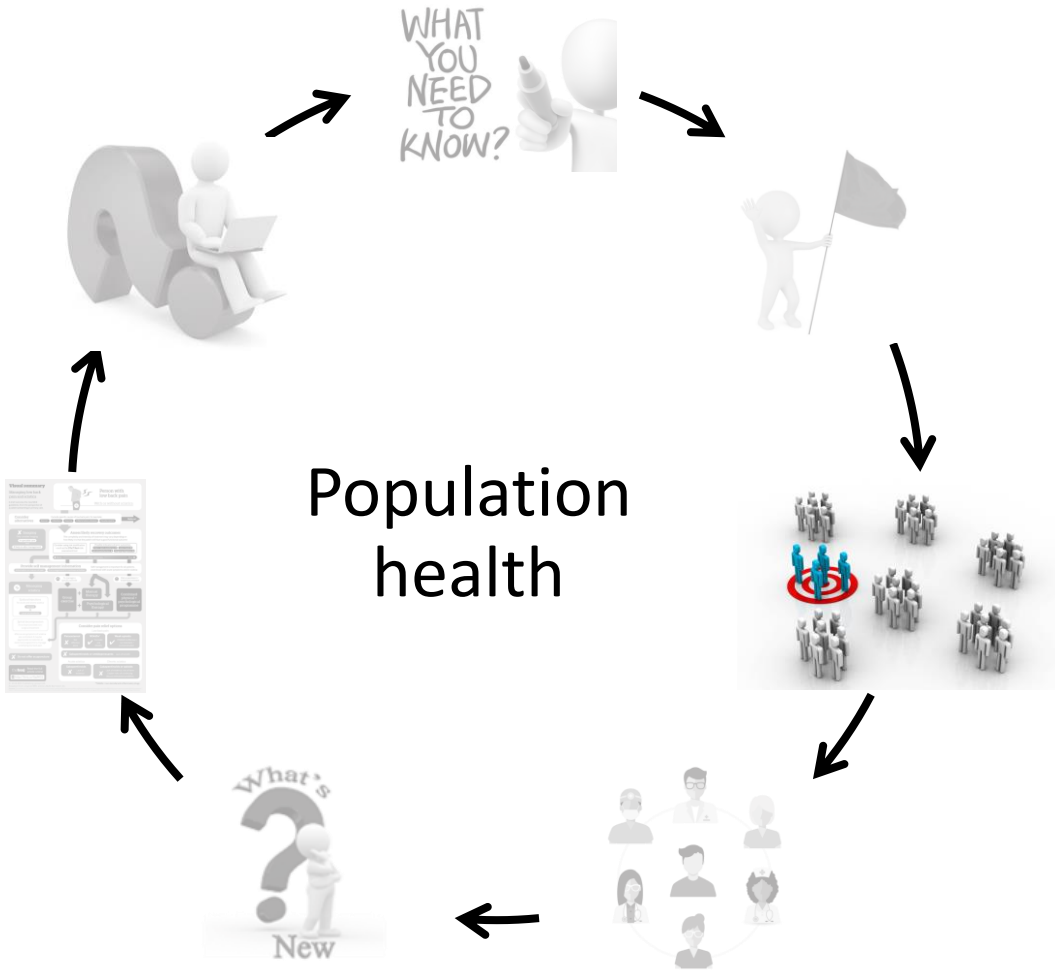
Cauda Equina Syndrome – draft national pathway

When bilateral sciatica is present consider **DISC** mnemonic

- **D**uration: Symptoms present for months to years then unlikely to indicate CES. Emergency referral is not warranted
- **I**solated: If no other symptoms of CES then CES unlikely. Safety net patient
- **S**everity: Sudden severe symptoms equally in both legs with myotomal weakness with no CES symptoms then undertake an urgent referral with safety netting
- **C**ontinuation of Care: These patients should be safety netted and given early review

https://future.nhs.uk/NationalMSKHealth/view?objectId=32762320

Back pain!


WHAT YOU NEED TO KNOW?
Population health
What's New

Poll: Which of the following statements about LBP are true?

- Troublesome low back pain occurs in about 30% of people over their lifetime n
- Pain persists in 50% of people following an episode of low back pain n
- Pain persists in 70% of people following an episode of sciatica n
- Stopping smoking reduces low back pain n
- A strong belief that pain is harmful coupled with a fear of movement is associated with persistence of low back pain y
- Poor support from work colleagues may trigger or perpetuate low back pain y

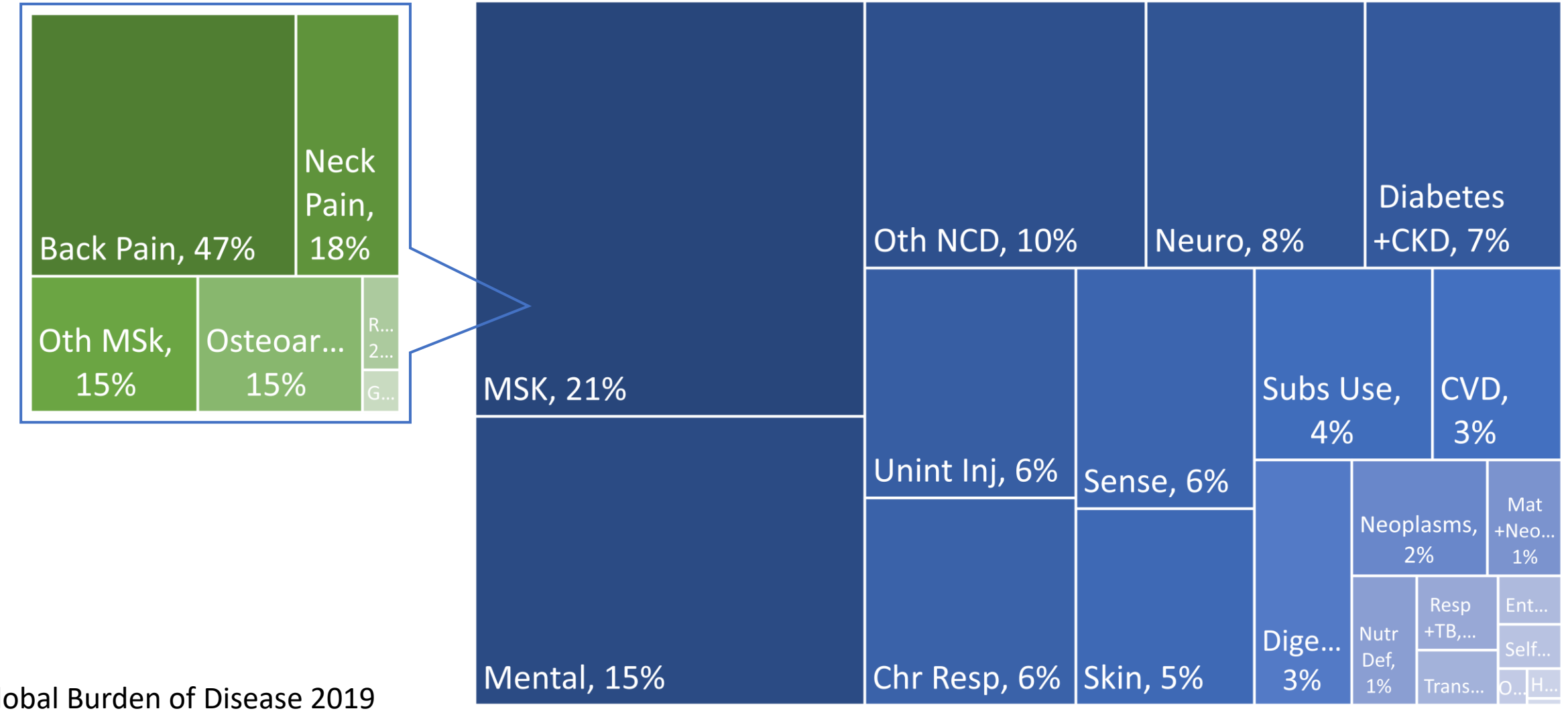
Prevalence of chronic musculoskeletal pain in the UK

Condition	No. people (millions)	% popn UK
Chronic musculoskeletal condition	19	30%
Persistent back pain	10	15%
Osteoarthritis (consulted about)	9	14%
Fibromyalgia	2.8	4%
Gout or inflammatory arthritis	2.2	3%
Osteoporotic fracture / year	0.5	0.8%

- Rises with age
- More common in women than men
- Commonly associated with anxiety, depression and physical illnesses
- More common with higher deprivation, obesity and inactivity (social gradient)

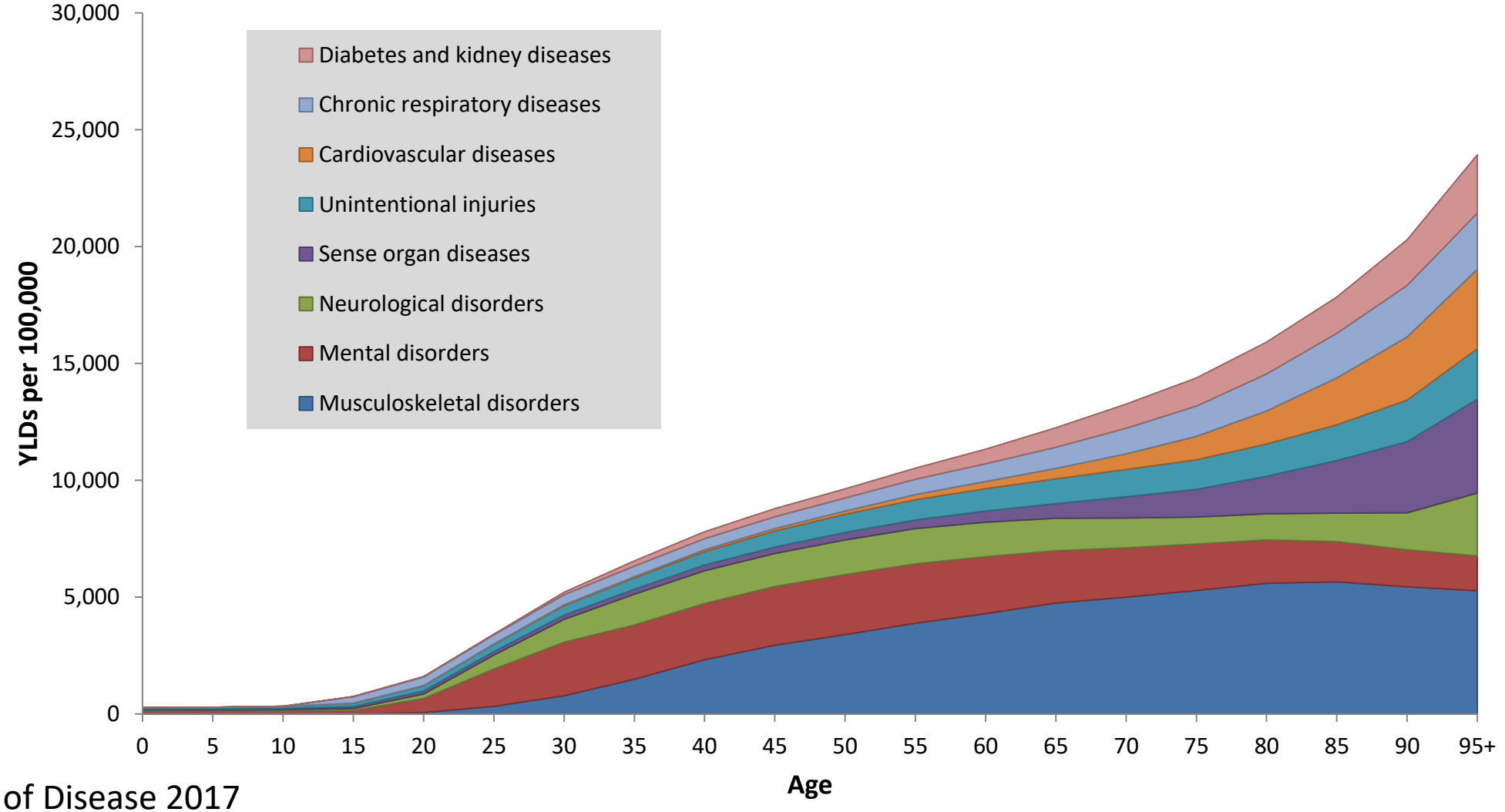
Versus Arthritis 2019

Years Lived with Disability, England 2019



Global Burden of Disease 2019

Multiple morbidity: Years Lived with a Disability (YLD) per 100,000 population, England 2017



Global Burden of Disease 2017

Epidemiology of non-specific low back pain and sciatica

- Low back pain leading cause of years lived with disability
- Two-thirds of us will suffer LBP during our lives
- Most people recover well but it is quite common for back pain to recur
- 11% ♂ and 16% ♀ have persistent pain and disability following an episode of LBP
- 30% still have clinically significant symptoms after a year after onset of sciatica
- 7% of GP consultations
- Sciatica less common but people more likely to consult

NICE NG59 2020

Triggers for an episode of low back pain

- Physical triggers
  - lifting and bending awkwardly
  - injuries
- Psychological and social triggers
  - distracted or fatigued when undertaking a task
  - underlying distress, anxiety, depression
  - dissatisfaction with work
  - poor support from colleagues

NICE NG59 2020

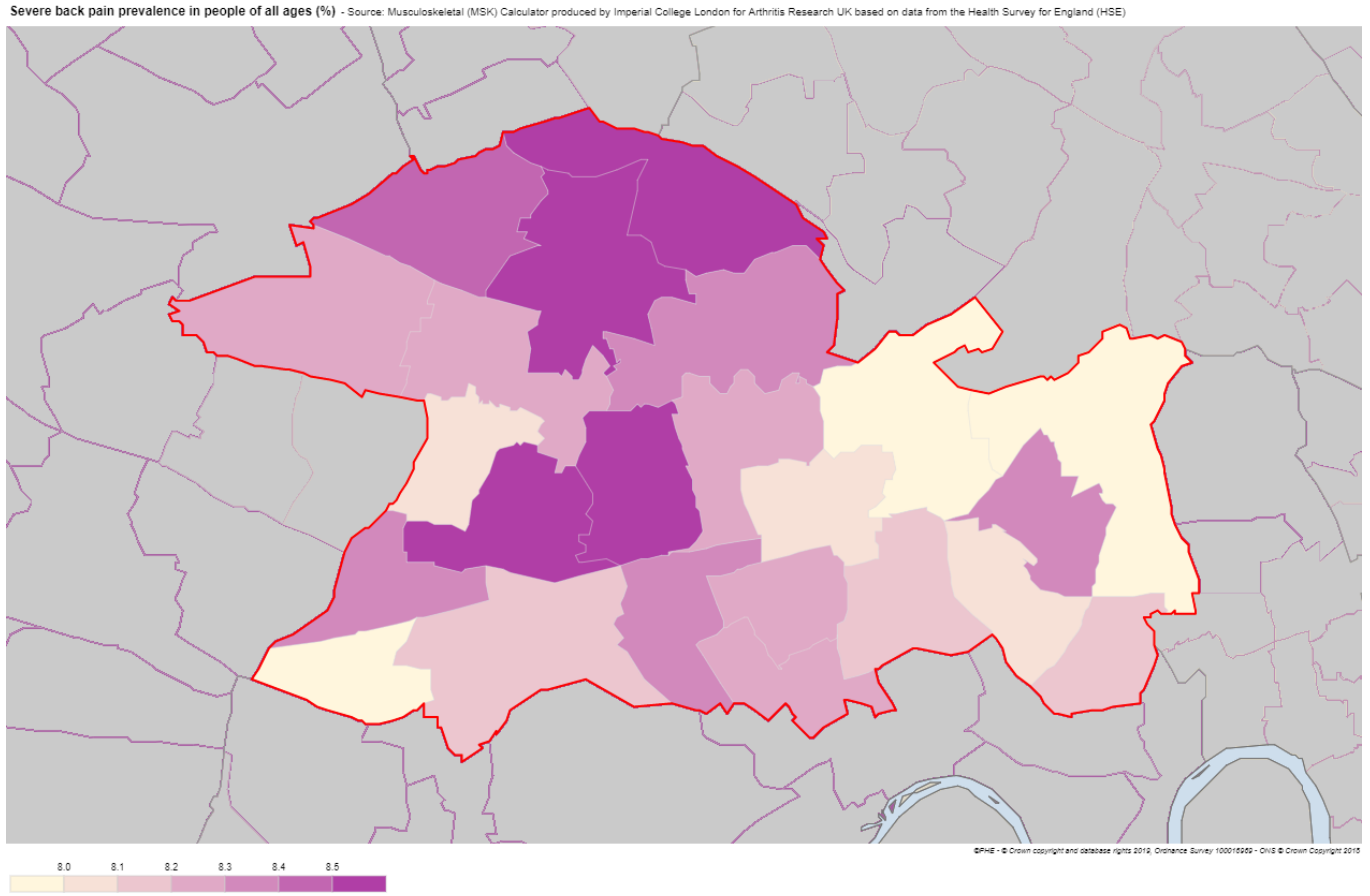
Risk factors for persistent low back pain

- Physical risk factors
  - pain radiating to the leg
  - ongoing exposure to lifting heavy and awkward loads
  - poor physical fitness
  - heavy smoking
- Psychological factors
  - job dissatisfaction
  - low mood and anxiety
  - strong belief that pain is harmful coupled with a fear of movement
  - presenting with physical manifestations of psychological distress and life-trauma
- Social factors
  - financial uncertainty
  - ongoing litigation and compensation claims

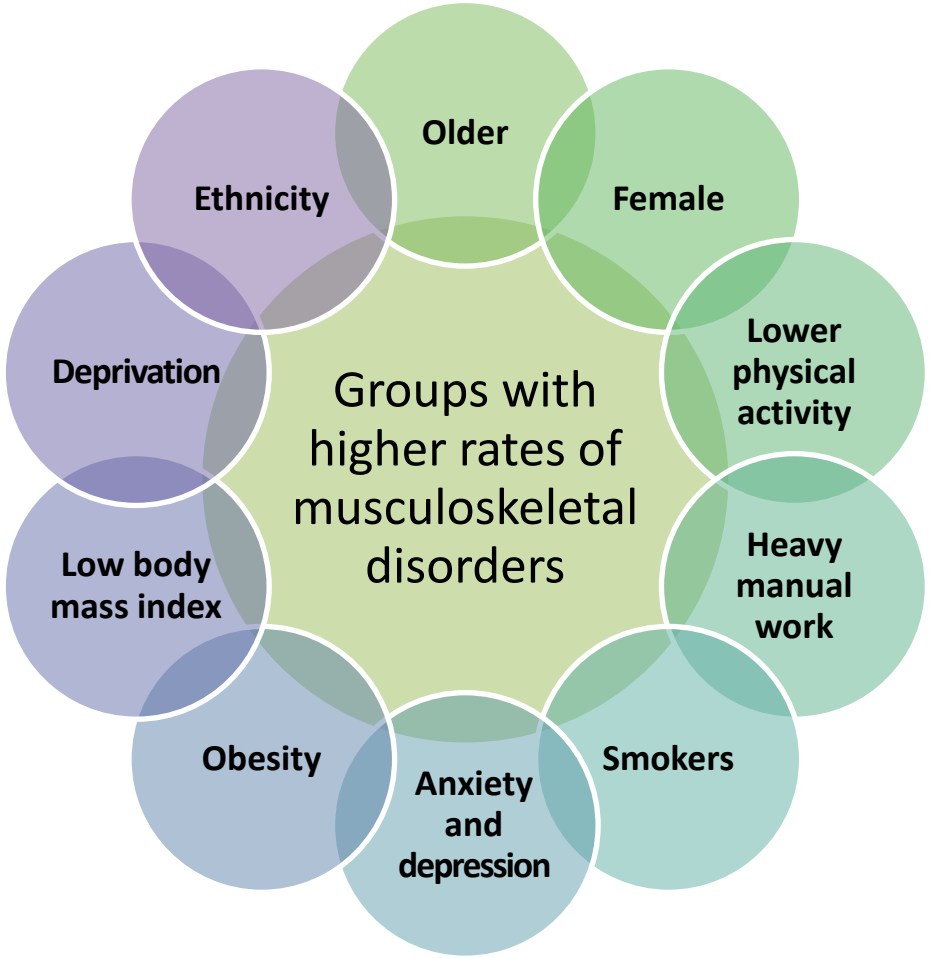
NICE 2016 (YouTube)

Health inequalities: prevalence severe low back pain

Modelled estimates by electoral wards, Ealing 2012

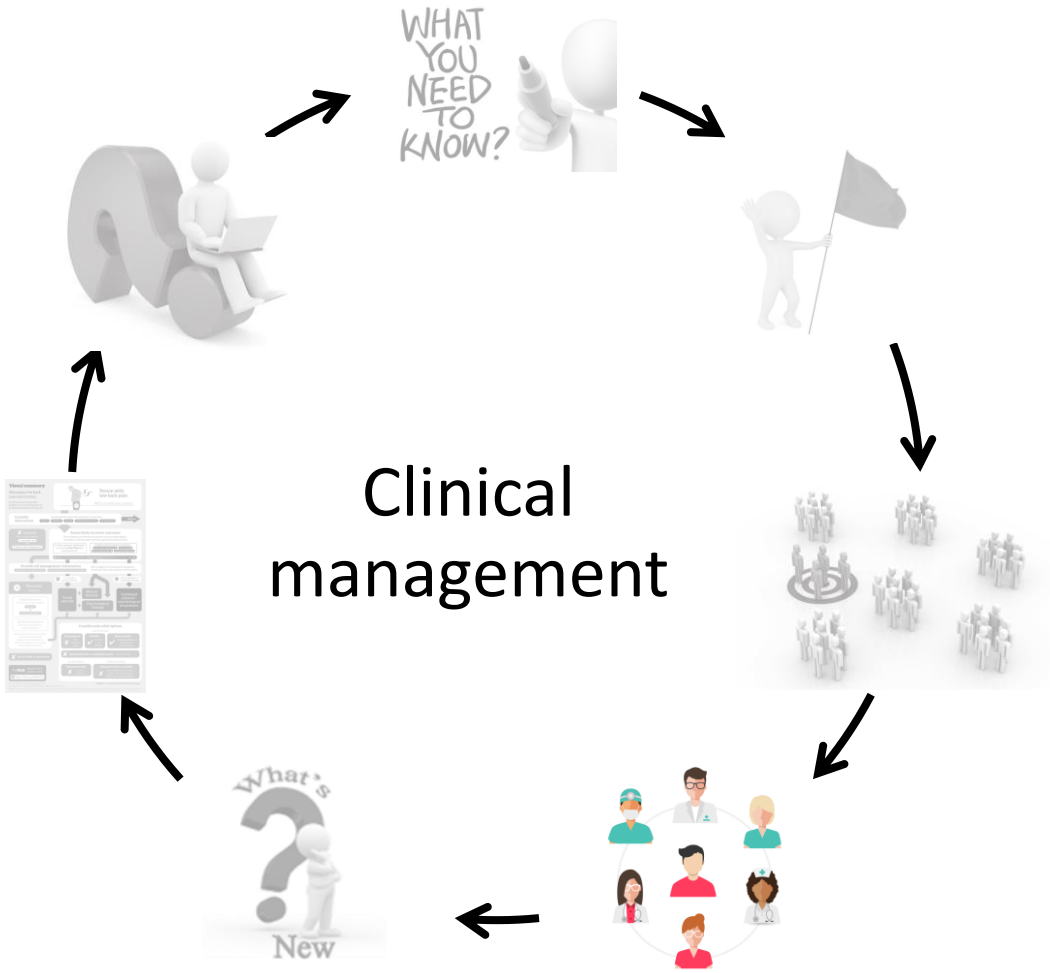


What is the population attributable risk?



- Population: 5,752 patients with **low back pain**, urban, West Pennine, UK
- Univariate predictors of pain: age, gender, increasing BMI, increasing deprivation, living alone, not owner-occupier, South Asian ethnicity
- Population attributable risk predictors of disabling LBP, adjusting for covariates (age, sex, deprivation, BMI)
  - **BMI 16%** (95% CI 5-27)
  - **Deprivation 33%** (95% CI 7-52)
  - **BMI and Deprivation 47%** (95% CI 21-64)

Ealing JSNA 2017, Webb 2013, Mansournia 2018


WHAT YOU NEED TO KNOW?
Clinical management
What's New

Case 2: Mrs Patel
Acute Low Back Pain

- 32yr old primary school teacher
- Landed awkwardly playing badminton on Saturday
- Rings GP on Monday with left-sided low back pain radiating to buttock and iliac crest
- Worse with bending and standing, eased by lying on right side
- No symptoms or signs of neurological involvement or serious underlying pathology
- She's tried Nurofen, hot water bottle and stretching exercises off the internet. She's in too much pain to get to work
- What does the guideline recommend for initial management?

Chat

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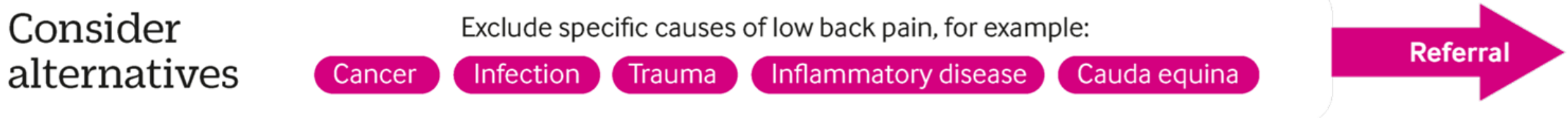
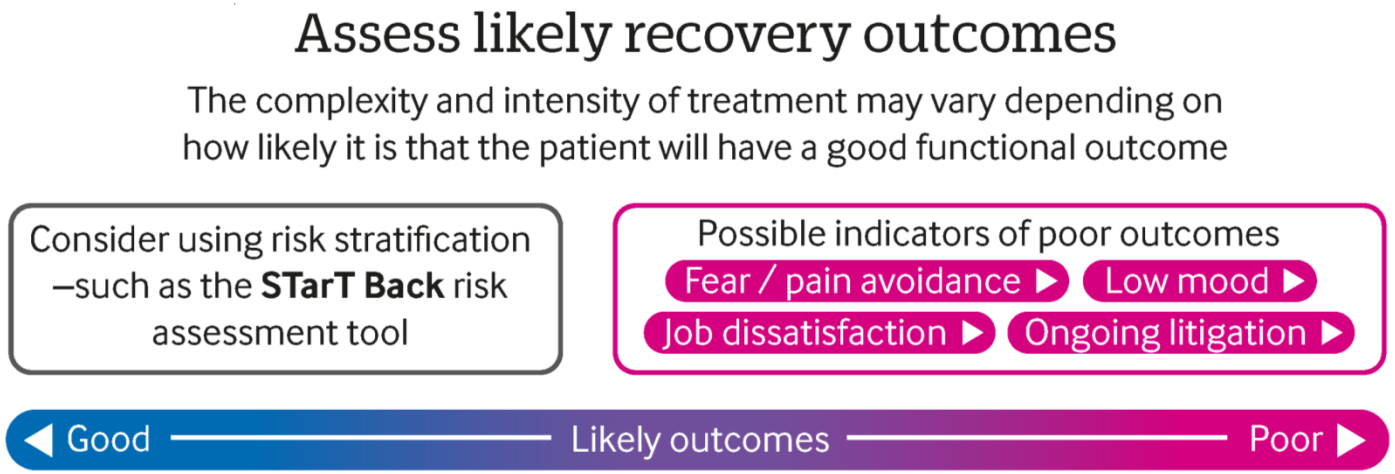


- Think about alternative diagnoses when examining or reviewing people with low back pain, particularly if they develop new or changed symptoms
- Exclude specific causes of low back pain, for example cancer, infection, trauma or inflammatory disease such as spondyloarthritis

NICE NG59 2020, Bernstein BMJ 2017



Discuss

- Consider using risk stratification (for example, the STarT Back risk assessment tool) at first point of contact with a healthcare professional for each new episode of low back pain ± sciatica, to inform shared decision-making about stratified management
- Based on risk stratification, consider:
  - simpler and less intensive support for people likely to improve quickly and have a good outcome (for example, reassurance, advice to keep active and guidance on self-management)
  - more complex and intensive support for people at higher risk of a poor outcome (for example, exercise programmes with or without manual therapy or using a psychological approach)

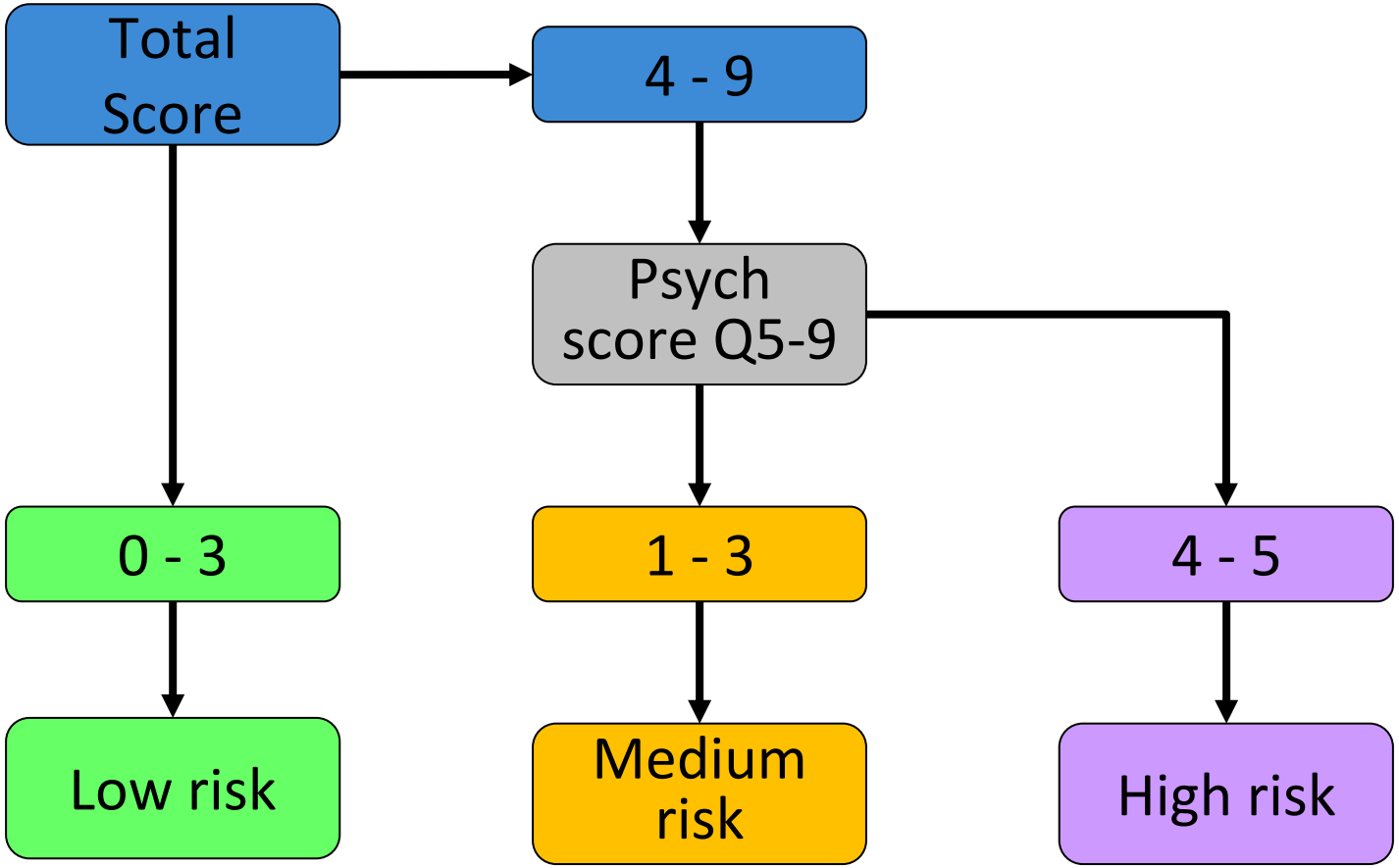
NICE NG59 2020, Bernstein BMJ 2017

STarT Back Screening Tool

	Thinking about the **last 2 weeks** tick your response to the following questions	**Disagree (0)**	**Agree (1)**
1	My back pain has **spread down my leg(s)** at some time in the last 2 weeks		
2	I have had pain in the **shoulder** or **neck** at some time in the last 2 weeks		
3	I have only **walked short distances** because of my back pain		
4	In the last 2 weeks, I have **dressed more slowly** than usual because of back pain		
5	It's not really safe for a person with a condition like mine to be physically active		
6	**Worrying thoughts** have been going through my mind a lot of the time		
7	I feel that **my back pain is terrible** and **it's never going to get any better**		
8	In general I have **not enjoyed** all the things I used to enjoy		
9	Overall, how **bothersome** has your back pain been in the **last 2 weeks**? Not at all (0), Slightly, (0), Moderately (0), Very much (1), Extremely (1)		

Keele University 2007

STarT Back scoring



Provide self management information

Information on nature of pain | Encouragement to continue activities

Discuss

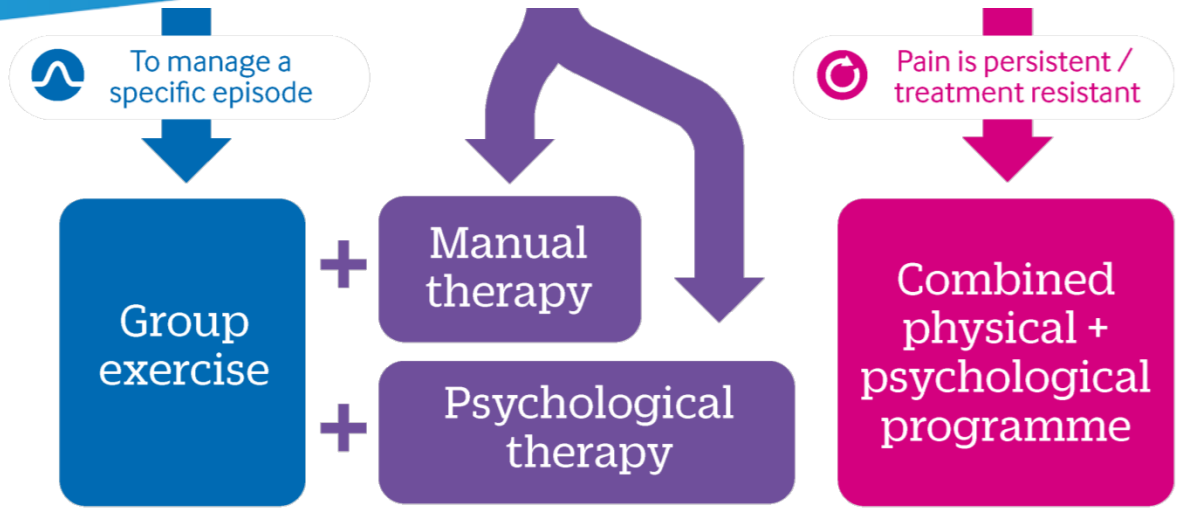
Self management is important for all patients,
even those with acute symptoms and/or sciatica

- Provide people with advice and information, tailored to their needs and capabilities, to help them self-manage their low back pain ± sciatica, at all steps of the treatment pathway
  - Information on the nature of low back pain and sciatica
  - Encouragement to continue with normal activities
  - No recommendation about bed rest – use clinical judgement (n.b. risk of harm)
  - Importance of early return to work and value of engaging in physical activity

NICE NG59 2020, O'Connell, Bernstein BMJ 2017

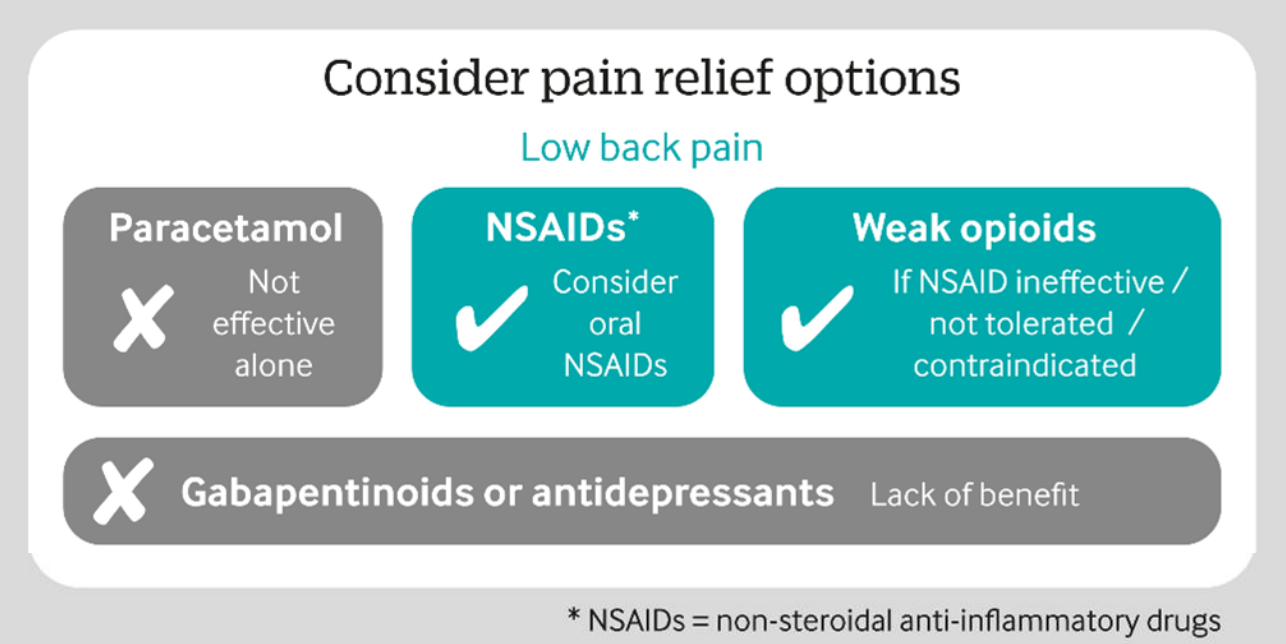
Poll: Which of the following non-pharmacological treatments should be considered for NHS treatment of low back pain

- Acupuncture n
- Alexander technique n
- Cognitive behavioural therapy (CBT) as sole treatment n
- Hydrotherapy ?
- Osteopathy as sole treatment n
- Pilates class y
- Yoga class y



- Exercise in group programme: biomechanical, aerobic, mind-body, or combination, for episode or flare-up LBP ± sciatica
- Manual therapy as part of a treatment package including exercise, with or without psychological therapy
- Psychological therapies using a cognitive behavioural (CBT) approach as part of a treatment package including exercise, with or without manual therapy
- Combined physical and psychological group programmes including a CBT approach where psychosocial obstacles to recovery or previous treatments not effective
- Promote and facilitate return to work or normal activities of daily living

NICE NG59 2020, Bernstein BMJ 2017



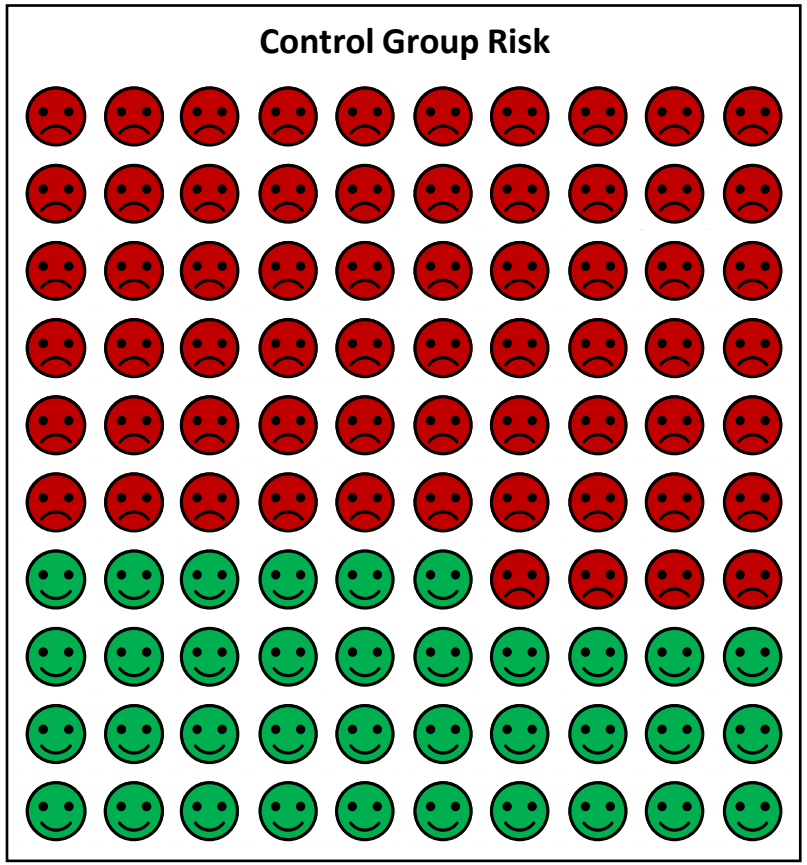
- Low back pain – limited used of medication:
  - NSAIDs + PPI (be aware of limited evidence and risk of harms)
  - or weak opioids ± paracetamol (have plan to stop medication before 3 months)
  - Benzodiazepines (acute LBP – research recommendation)
  - Do not use gabapentinoids, antidepressants or paracetamol alone
  - Do not use opioids for chronic low back pain

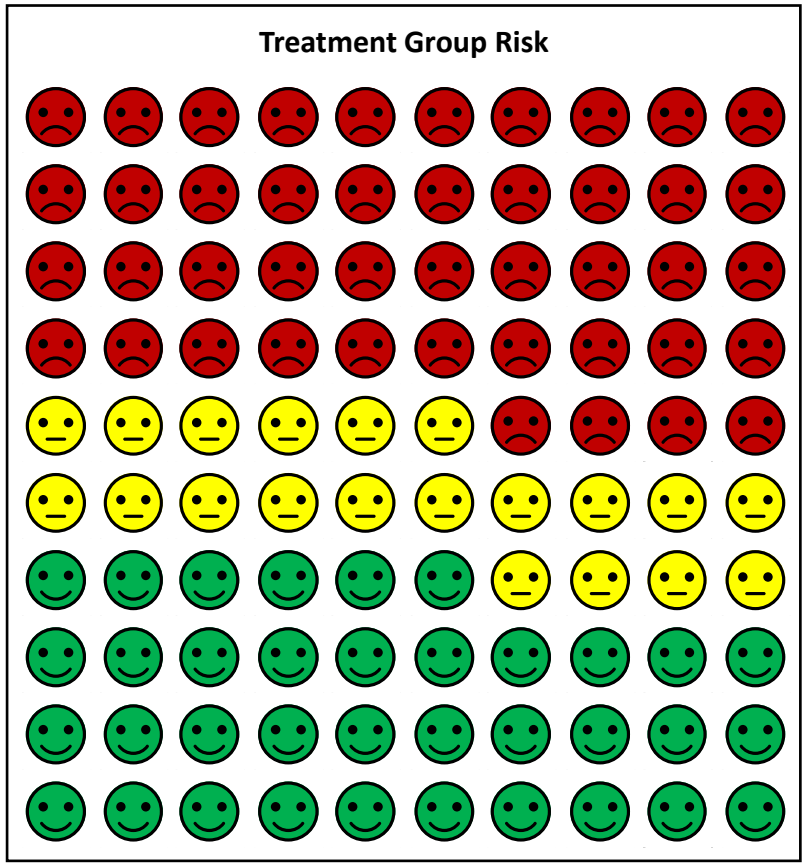
NICE NG59 2020, Bernstein BMJ 2017

“Refusing to go to the gym is not the same thing as resistance training.”

Cates Plots: Exercise for LBP

NNT 5 (95% CI 3-11), UK Beam, Froud 2009





Key

- Good outcome
- Poor outcome
- Better with treatment

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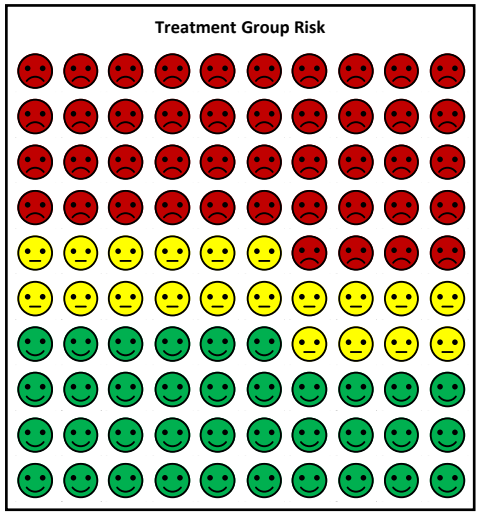
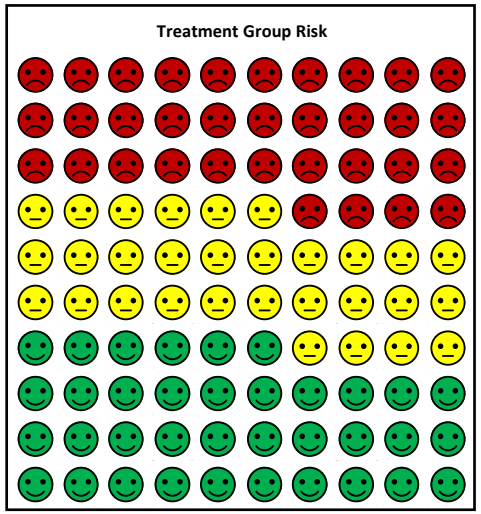
Cates Plots:
Non-invasive Interventions for Low Back Pain

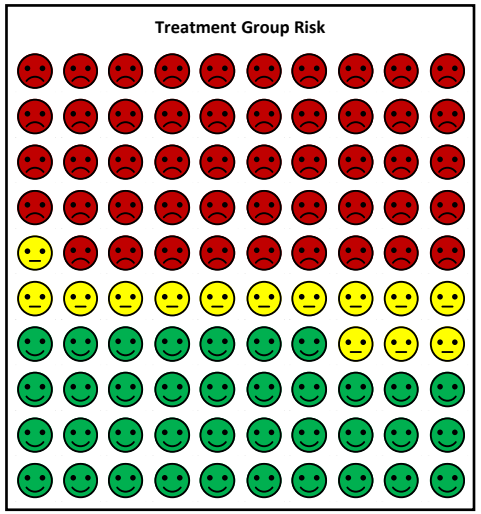
Exercise
NNT 5 (95% CI 3-11)
UK Beam, Froud 2009



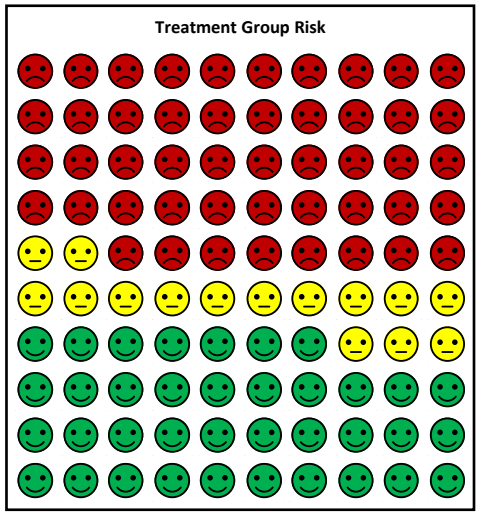
Exercise + Manual Therapy
NNT 3 (95% CI 2-5)
UK Beam, Froud 2009

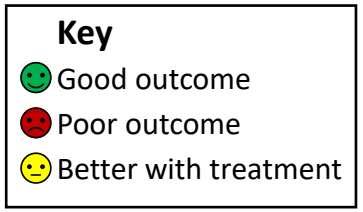


Cognitive Behavioural Approach
NNT 7 (95% CI 6-9)
Lamb, BeST trial 2010



NSAIDs
NNT 7 (95% CI 4-22)
Gaag, CDSR 2020





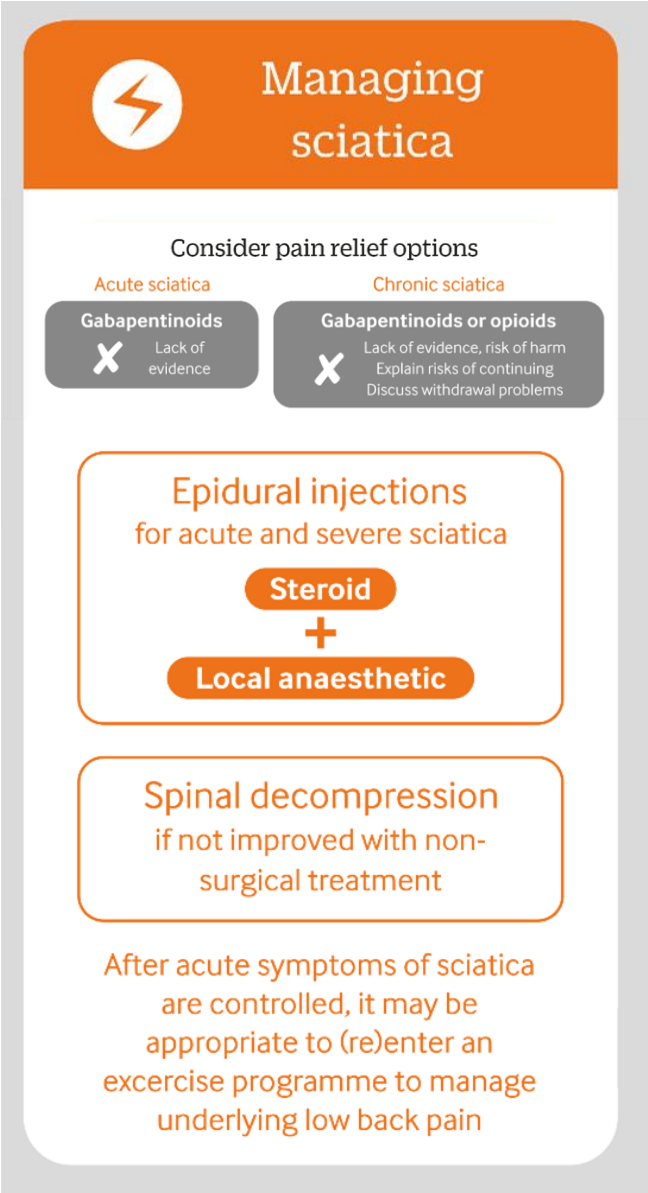
Bernstein 2022

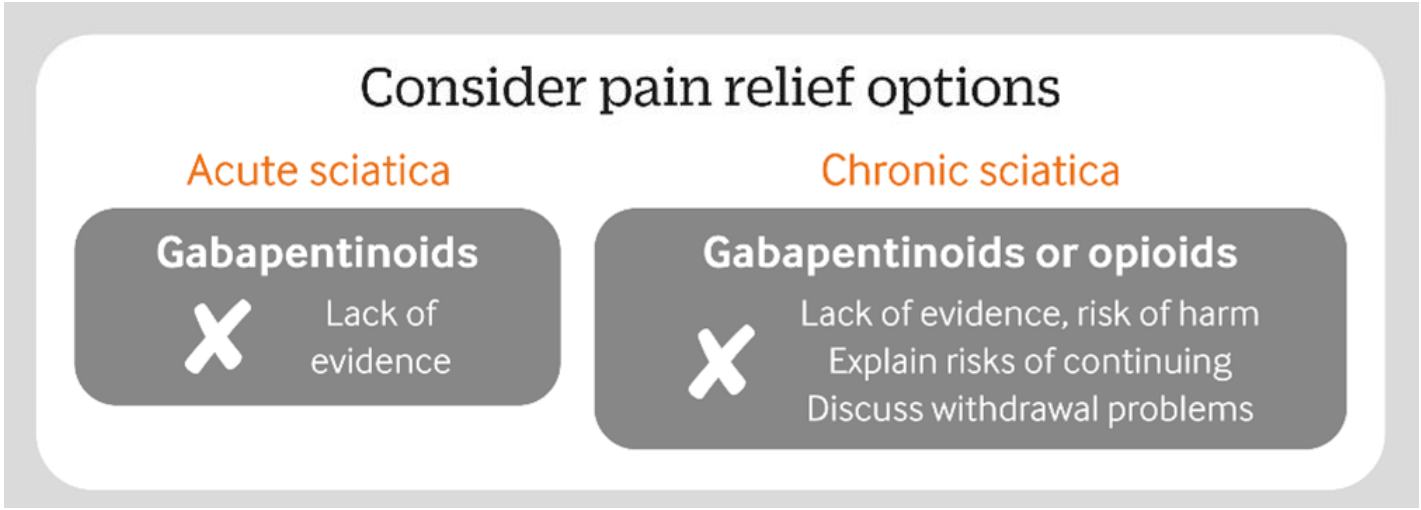
Case 3: Mrs Hendy
Sciatica

- 48 year old cleaner pulled a heavy bucket out of a low cupboard. Over the next 3 days she developed left low back pain radiating to the buttock
- One week later, after she sat up in bed, she developed severe lancinating pain from the posterior thigh to the calf with tingling and reduced sensation on the outer border of her left foot
- No weakness, sphincter disturbance or perianal loss of sensation
- She wanted further analgesia from you as she could not get comfortable and had no relief with tramadol, naproxen + omeprazole and paracetamol prescribed from casualty last week
- What does the guideline advise regarding the management of sciatica?

Chat

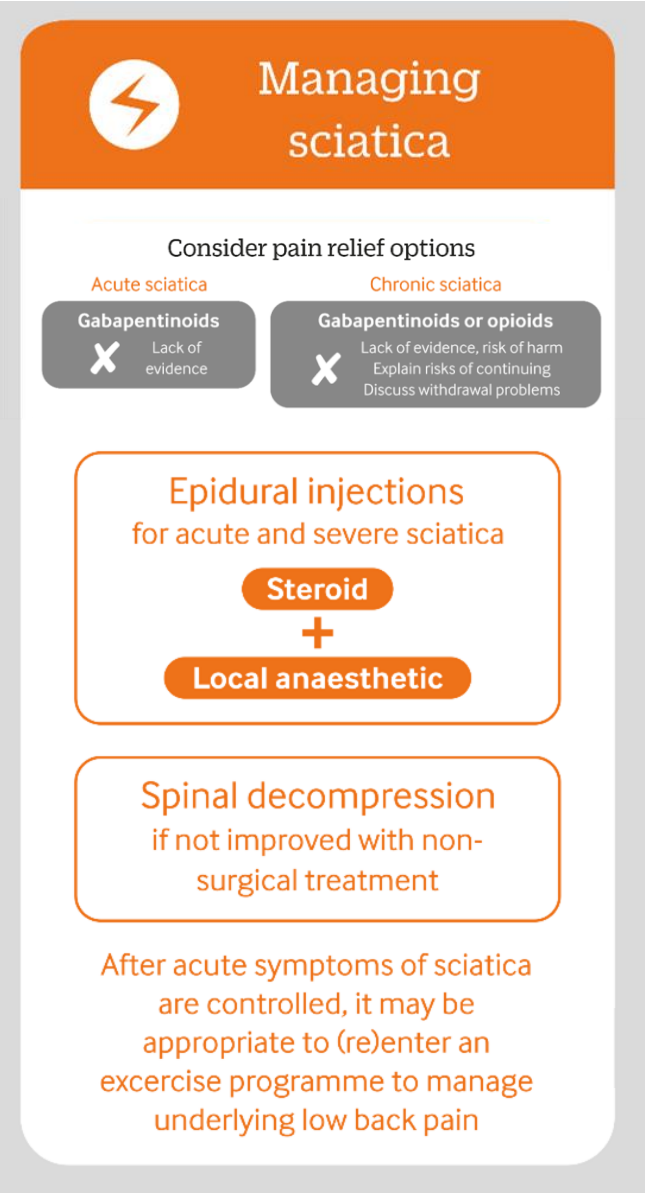
Bernstein, Bourke 2022





- Acute sciatica (<3 months) – limited used of medication
  - NSAIDs + PPI (be aware of limited evidence and risk of harms)
  - Amitriptyline (research recommendation)
  - Opioids (have plan to stop medication before 3 months)
  - Do not use gabapentinoids, oral steroids or benzodiazepines
- Chronic sciatica (≥ 3 months)
  - Do not use gabapentinoids or opioids for chronic low back pain or chronic sciatica

NICE NG59 2020, Bernstein BMJ 2017



- Pharmacological
  - Do not offer gabapentinoids, other antiepileptics, oral corticosteroids or benzodiazepines for managing sciatica as there is no overall evidence of benefit and there is evidence of harm
  - Do not offer opioids for managing **chronic** sciatica
  - If a person is already taking opioids, gabapentinoids or benzodiazepines for sciatica, explain the risks of continuing these medicines
  - As part of shared decision making about whether to stop opioids, gabapentinoids or benzodiazepines for sciatica, discuss the problems associated with withdrawal with the person
  - Be aware of the risk of harms and limited evidence of benefit from the use of non-steroidal anti-inflammatory drugs (NSAIDs) in sciatica
- Epidural steroid + local anaesthetic
  - Consider epidural injections of local anaesthetic and steroid in people with acute and severe sciatica. (Acute: <3 months duration)
- Spinal decompression
  - Consider spinal decompression for people with sciatica when non-surgical treatment has not improved pain or function and their radiological findings are consistent with sciatic symptoms
- *The timing of these options depends on the clinical circumstances*
- Non-invasive treatments *as per low back pain*

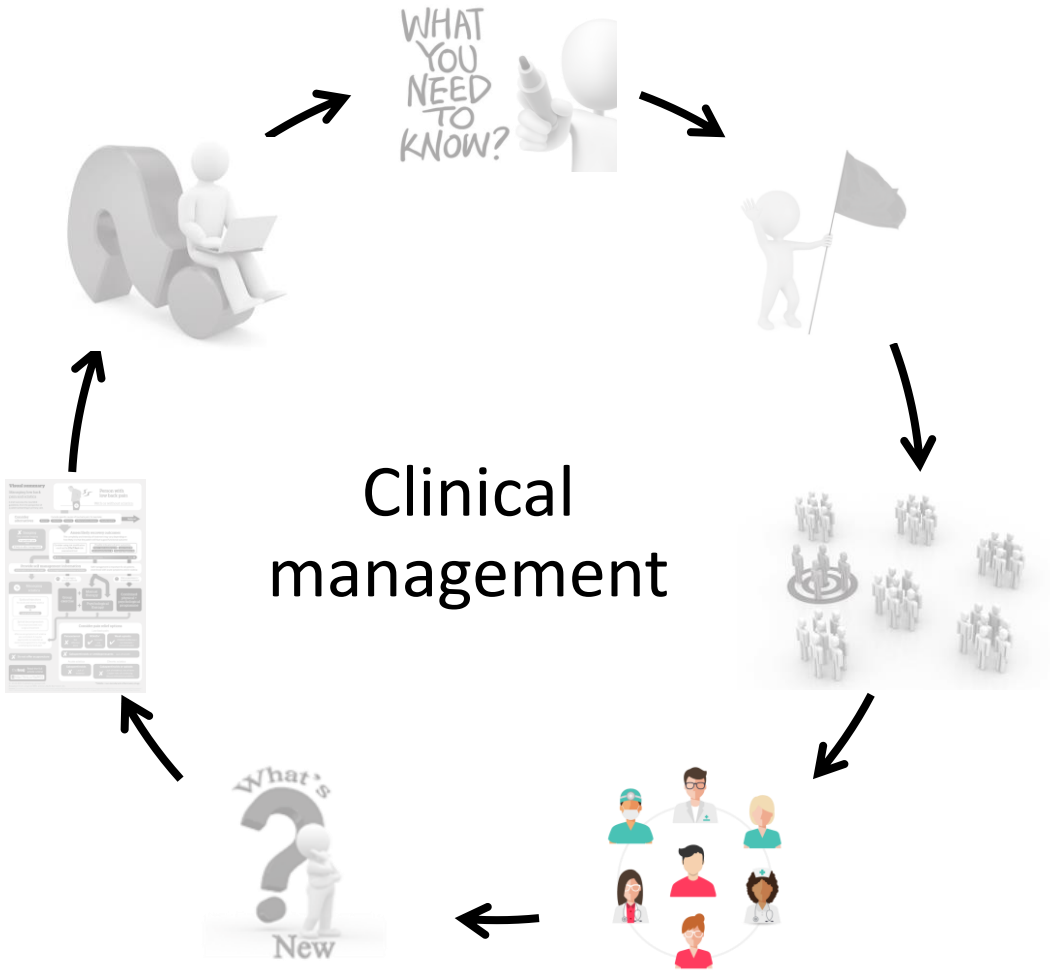
Discuss

NICE NG59 2020, Bernstein BMJ 2017

“You see, Ms. Jenkins, by doubling up on patients in the MRI, we’re able to cut costs in half.”

- Do not routinely offer imaging in a non-specialist setting for people with low back pain ± sciatica
- Explain to people with low back pain ± 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 ± sciatica only if the result is likely to change management

NICE NG59 2020, Bernstein BMJ 2017


WHAT YOU NEED TO KNOW?
Clinical management
What's New

Case 4: Mr Grimsby

Facet joint pain

- 59 year old medically retired trackman. Worked on railways for 30 years, heavy lifting and bending. 22 year history of low back pain following right sciatica. Also has osteoarthritis of hands, hips, knees and right shoulder.
- Severe pain and stiffness on extending from flexed position, arising from sitting, lifting, twisting and turning over in bed. Pain in low back radiating to both buttocks on standing. Can walk 200m with a stick (osteoarthritis knees).
- No suspicion of serious underlying pathology on history or examination. Bilateral absent ankle jerks. Severe pain and bony restriction of movement on facet joint compression tests. Flexion stiff but no change in low back pain.
- Previous treatment: multiple courses of physiotherapy including exercises and manual therapy. Gets some relief for a day after manipulation. Does stretching exercises every morning. Analgesics not helpful, NSAIDs help morning stiffness but stopped because chronic kidney disease (CKD) stage 4. Depressed with chronic pain and loss of work. Tried pain management programme.
- What does the guideline advise regarding the management of severe facet joint pain?

Chat

Bernstein, Bourke 2022

“Intervention time!”

Radiofrequency denervation
Chronic low back pain

- Consider referral for assessment for RF denervation for people with chronic low back pain when
  - non-surgical treatment has not worked for them ***and***
  - main source of pain is thought to come from structures supplied by the medial branch nerve ***and***
  - moderate or severe levels of localised back pain (rated as 5 or more on a visual analogue scale, or equivalent) at time of referral
- Only perform RF denervation after a positive response to a diagnostic medial branch block.
- Do not offer imaging for people with low back pain with specific facet join pain as a prerequisite for RF denervation

Discuss

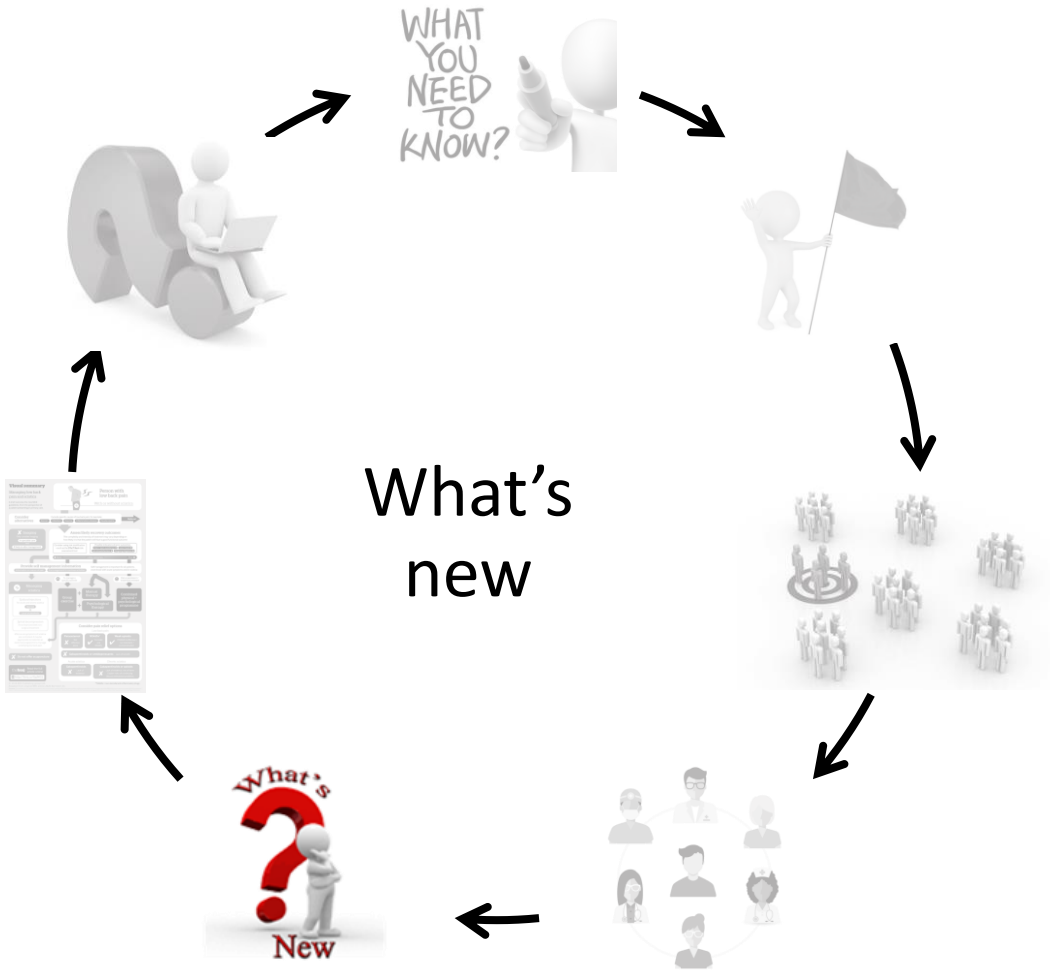
NICE NG59 2020

“My backache has gone but now I’ve got pins and needles!”

Do not offer

- Acupuncture
- Electrotherapy
- Traction
- Orthotics, belts, corsets
- Spinal injections
- Disc replacement
- Spinal fusion (unless part of a RCT)

NICE NG59 2020


WHAT YOU NEED TO KNOW?
What's New
What's new

Research recommendations NICE NG59

Literature review Apr 2022

What is the clinical and cost effectiveness of **benzodiazepines** for the acute management of non-specific low back pain?	No new evidence
What is the clinical and cost effectiveness of **codeine with and without paracetamol** for the acute management of non-specific low back pain?	No new evidence
What is the clinical and cost effectiveness of **radiofrequency denervation** for chronic non-specific low back pain in the long term?	New evidence
What is the clinical and cost effectiveness of **image-guided compared with non-image-guided epidural injections** for people with acute sciatica?	New evidence (low qual)
Should people with non-specific low back pain be offered **spinal fusion** as a surgical option?	New evidence
What is the cost-effectiveness of providing **long term support** (>12 months) for people with chronic, non-specific low back pain with or without sciatica, in reducing health care utilisation?	No new evidence (NICE NG193 (chronic pain), 2021)
What is the clinical and cost-effectiveness of **laser therapy** in the management of low back pain and sciatica?	New evidence (v low qual)
What is the clinical and cost effectiveness of **antidepressants** for the management of sciatica?	New evidence

Bernstein 2022

What's New – non-pharmacological, injections and surgical interventions

Intervention	New or Change from NICE NG59	Author(s)
Stratified care for sciatica	Not better than usual care, not cost effective	Konstantinou 2020 Lancet
Psychological interventions + exercise	No change from current rec	Kwan-Yee Ho, 2022, BMJO Sys Rev
Manipulation alone for chronic LBP	Similar effect to exercise, NSAIDs, analgesics	Rubenstein 2019 BMJ Sys Rev
Acupuncture in immediate term <7 days	More effective than no tx (excl by NICE)	Mu 2020 Cochrane
Imaging when no serious pathology	More harm than good, slower recovery, higher costs, more absence from work	Lemmers 2018 Eu Sp J Sys Rev Hall BMJ 2021 Review
Epidural steroid for sciatica	No change from current rec	Oliveira 2020 Cochrane
Radiofrequency denervation	No improvement compared to exercise prog	Juch MINT trials 2017 JAMA
Spinal fusion for chronic LBP	No change from current rec	Mannion 2016 The Spine J Review
Vertebroplasty in short, med, long term	No benefit vs placebo	Buchbinder 2018 Cochrane Firanesco 2018 BMJO

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What's New – pharmacological interventions

Intervention	New or Change from NICE NG59	Author(s)
NSAIDs for acute LBP	Small, non-clinically important benefit	Gaag 2020 Cochrane
NSAIDs for back and neck pain	Small, non-clinically important benefit	Machado 2017 ARD Sys Rev
Antidepressants for LBP	No change from current rec	Ferreira 2021 Sys Rev
Antidepressants for sciatica	Small improvement over 2-4 weeks	Pinto 2017 BMJ Review
Non benzo muscle relaxants	Small, non-clinically important benefit	Cashin 2021 BMJ Sys Rev
Pregabalin for acute and chronic sciatica	No change from current rec	Mathieson 2017 NEJM
Benzodiazepines + Opioids	Only prescribe benzodiazepines (or benzodiazepine-like drugs) and opioids together if there is no alternative. If concurrent use is unavoidable, the lowest doses possible should be prescribed for the shortest duration and patients carefully monitored for signs of respiratory distress. (Combination not considered by NICE)	MHRA 2020

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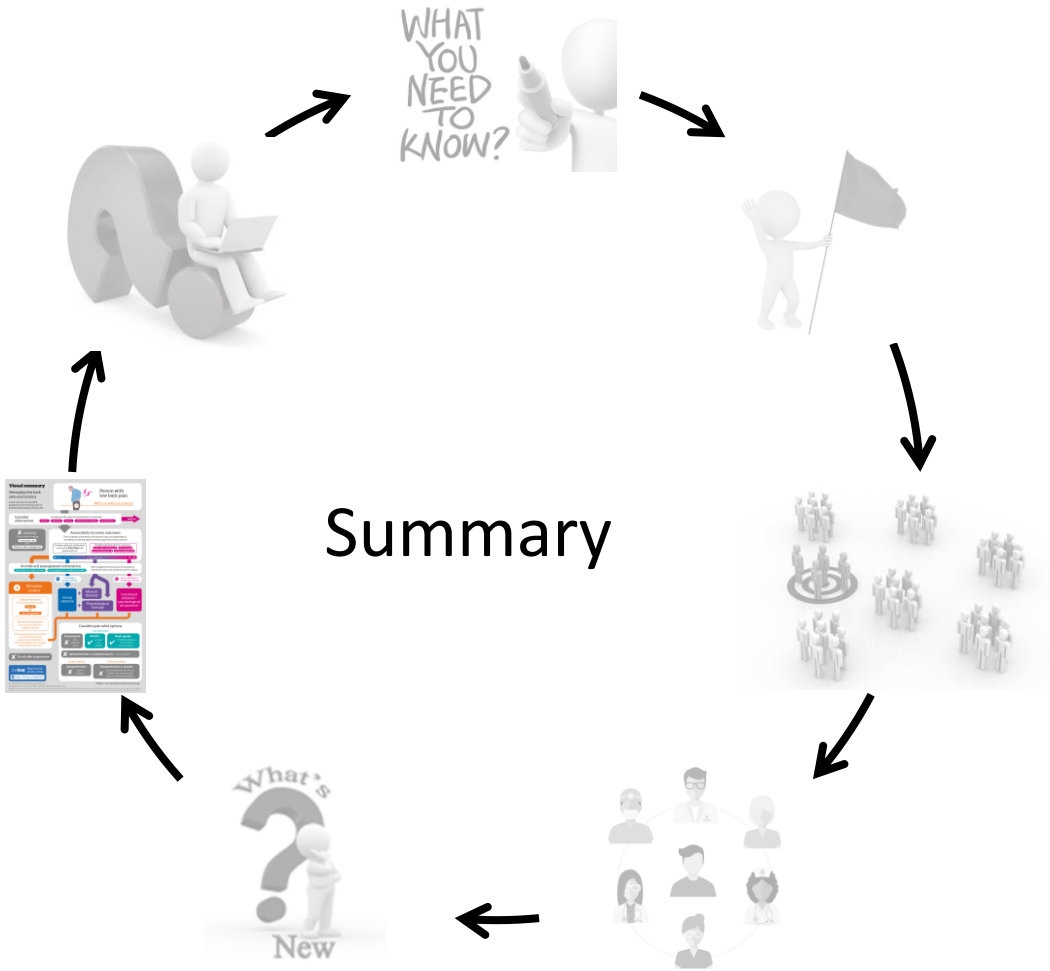
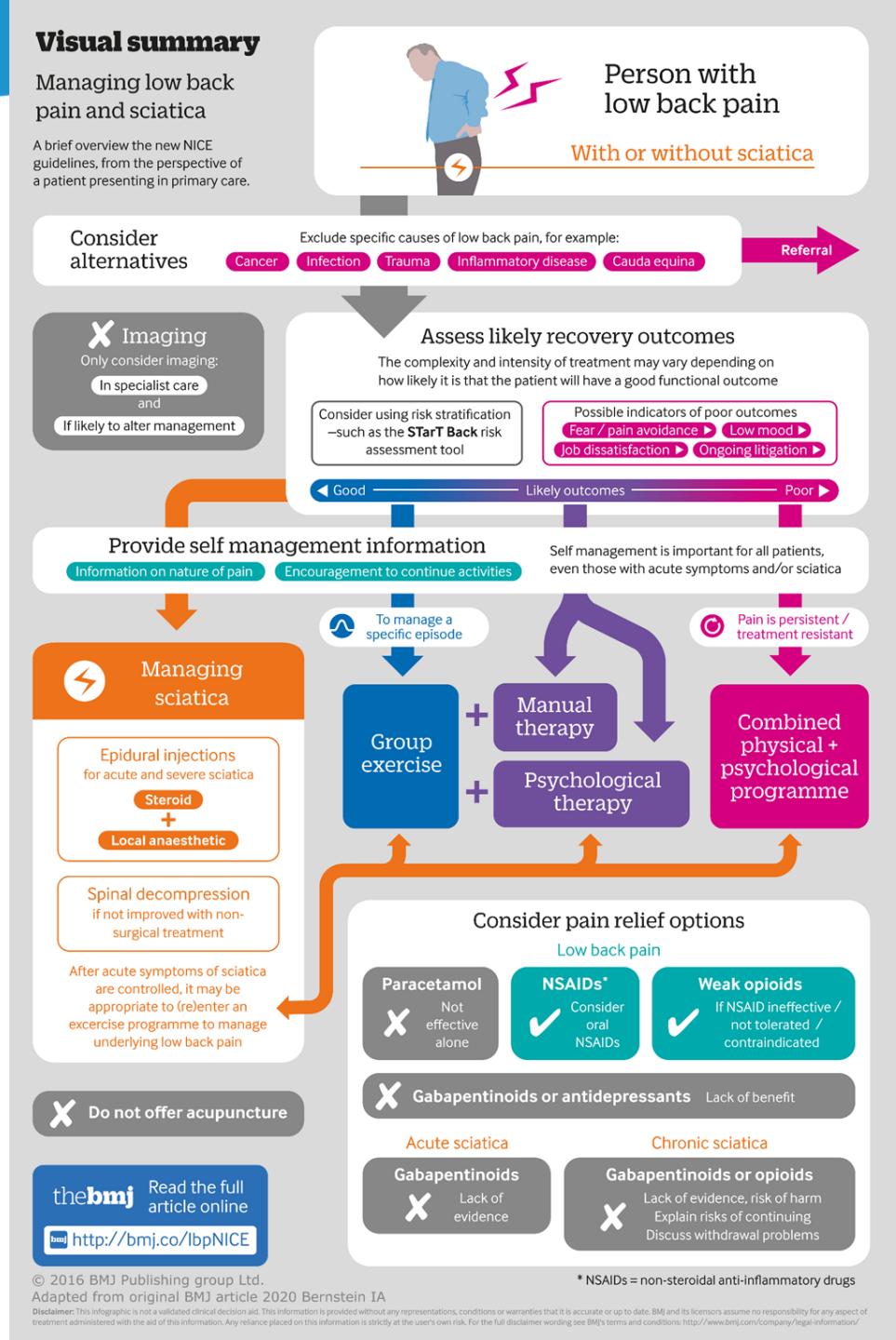

WHAT YOU NEED TO KNOW?
Summary
What's New



BMJ 2017, Bernstein 2020
https://tinyurl.com/NICElbp

Management Summary
Low back pain

- Consider serious underlying pathology
- Advise on natural recovery and positions of comfort
- Consider non-invasive treatments:
  Stretching, strengthening, aerobic, yoga or Tai Chi ± manual therapy ± psychological approach
- Low back pain – limited used of medication:
  - NSAIDs + PPI (be aware of limited evidence and risk of harms)
  - or weak opioids ± paracetamol (have plan to stop medication before 3 months)
  - Benzodiazepines (acute LBP – research recommendation)*
  - Do not use gabapentinoids, antidepressants or paracetamol alone
  - Do not use opioids for chronic low back pain
- Consider a combined physical and psychological programme when previous treatments have not been effective
- Consider radiofrequency denervation in very limited circumstances

** See MHRA warning 2020 to avoid combination of opioids and benzodiazepines*

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Management Summary
Sciatica

- Consider serious underlying pathology
- Advise on natural recovery and positions of comfort
- Consider non-invasive treatments:
  Stretching, strengthening, aerobic, yoga or Tai Chi ± manual therapy ± psychological approach
- Acute sciatica (<3 months) – limited used of medication
  - NSAIDs + PPI (be aware of limited evidence and risk of harms)
  - Amitriptyline (research recommendation)
  - Opioids (have plan to stop medication before 3 months)
  - Do not use gabapentinoids, oral steroids or benzodiazepines
- Chronic sciatica (≥ 3 months)
  - Do not use gabapentinoids or opioids for chronic low back pain or chronic sciatica
- Consider epidural for acute and severe sciatica (<3 months)
- Consider surgical decompression if not improved with non-surgical options

Bernstein 2022

References

Bernstein I, Malik Q, Carville S et al. Low back pain and sciatica: summary of NICE guidance. BMJ 2017;i6748 http://bmj.com/cgi/content/full/bmj.i6748

http://www.bmj.com/content/356/bmj.i6748 (infographic 2017)

https://tinyurl.com/NICElbp (infographic updated 2020)

National Institute for Health and Care Excellence. *Low back pain and sciatica in over 16s: assessment and management. NG59.* 2016, updated 2020 https://www.nice.org.uk/guidance/ng59

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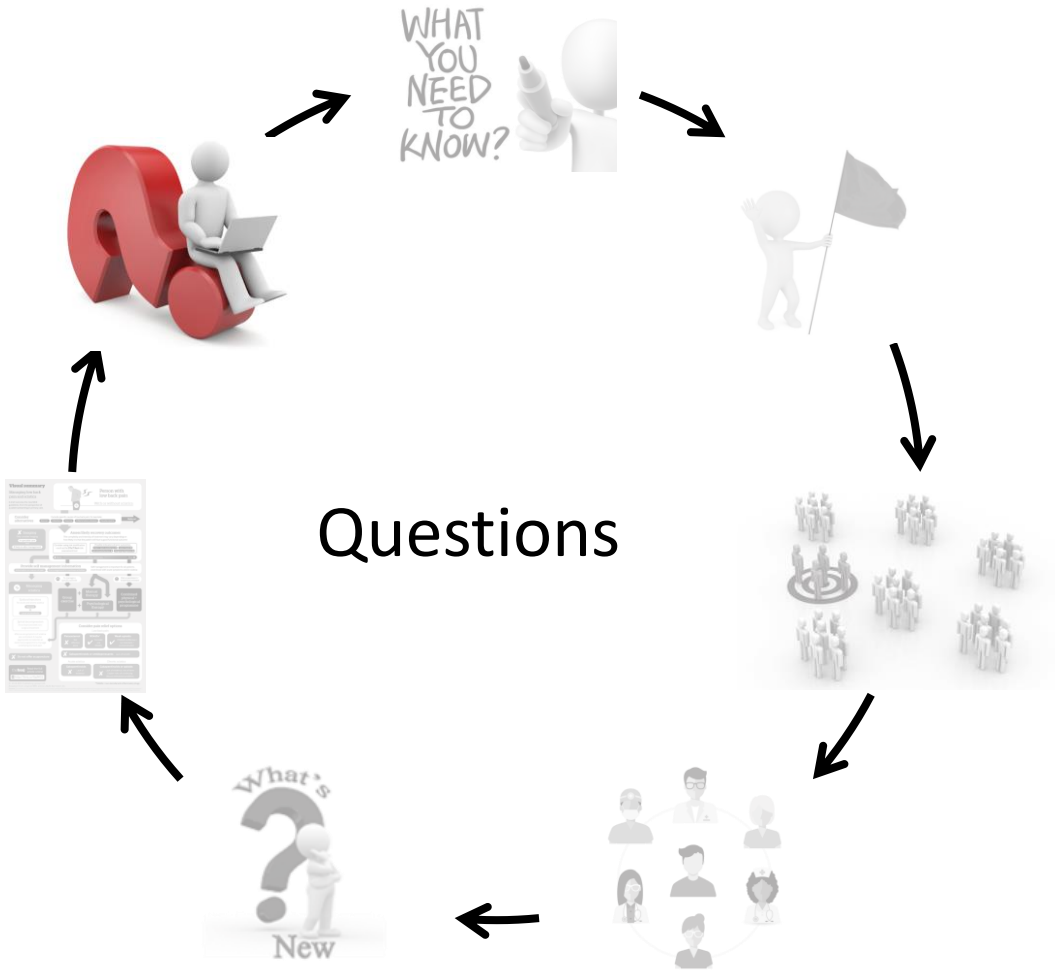
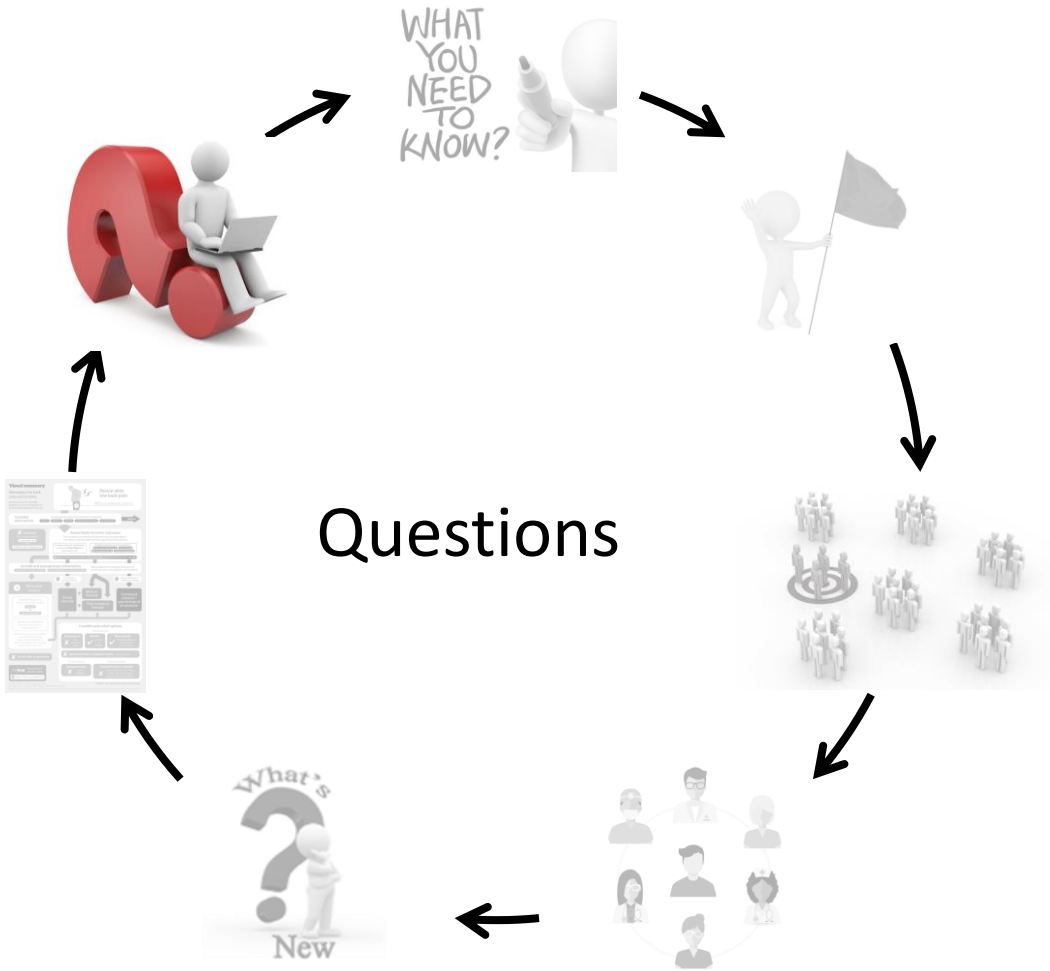

WHAT YOU NEED TO KNOW?
What's New
Questions

Low Back Pain and Sciatica

Questions?



END

Low Back Pain and Sciatica

Supplementary Slides

STarT Back performance (full guideline)

- Sufficient evidence and levels of discrimination and calibration to consider STarT Back as a reasonably useful risk assessment tool with regards to functional outcome. Additionally this tool only takes a few minutes to complete, which would be feasible to use in clinical practice
- Calibration measures how well the predicted risks compare to observed risks. Discrimination refers to the ability of the prediction model to distinguish between those who do or do not experience the event of interest
- The R2 statistic for calibration of the STarT Back tool is 42-46% for functional improvements and 8-17% for pain
- Hill 2008 gives the sensitivity of Low Risk v. Med+High Risk as 78-80%. Therefore, the false negative rate is 20-22%. This means that 20-22% of patients who are in the medium and high risk groups will be misclassified as low risk
- Discrimination data shows that STarT Back has an AUC for function of 0.82 (primary care), and for 0.66 for pain (primary care). The tool therefore misclassifies about 30% of patients
- IMPacT cohort (Whitehurst 2015) STarT Back risk tool versus no risk tool demonstrated no clinical difference overall for all outcomes. The intervention dominates non-stratified care, with a saving of £4.89. The QALY gain is 10 fold smaller than the RCT, 0.003, based on 2 and 6 month follow up, but the confidence limits cross the line of no effect.
- In the RCT, all the patients in the low risk group received 'best care' – a 30 minute appt with a physio, and this does not normally occur in primary care

NICE NG59 2020

No Recommendations Made

- Clinical examination
  No relevant clinical studies were identified which looked for 'test and treat' outcomes
- Postural therapies (e.g. Alexander technique)
  Uncertainty about effectiveness from just one study, and further studies underway
- Laser
  Conflicting evidence, not UK-based, further research needed
- Antibiotics
  External validity concerns due to unclear selection criteria, single study

NICE NG59 2020

Not recommended

- Acupuncture
  - Comparison of acupuncture with usual care demonstrated improvements in pain, function and quality of life in the short term
  - Comparison with sham acupuncture showed no consistent clinically important effect, leading to the conclusion that the effects of acupuncture were probably the result of contextual effects
  - The GDG considered that other treatments reviewed in the guideline had specific and clinically important treatment effects beyond contextual effects
  - No evidence for subgroups who might benefit
  - No firm evidence for acupuncture in combination with other treatments
  - Although cost-effective, the GDG wanted evidence of treatment-specific effects before considering health economic data
  - Mature evidence base; further research unlikely to change recommendation

NICE NG59 2020

Not recommended cont…

- **Manual therapy without exercise**
  Conflicting evidence, and uncertainty about long term clinical and cost-effectiveness of manual therapy alone. Some evidence for use alongside exercise
- **Psychological treatments without exercise**
  Limited clinical evidence and conflicting cost-effectiveness evidence of psychological treatments alone. Some evidence for use alongside exercise
- **Paracetamol**
  No efficacy for acute LBP, no evidence for chronic LBP
  Data on risk of harm not reviewed by GDG
- **Opioids** except weak opioids ± paracetamol
  for acute LBP if NSAID not tolerated or ineffective
  - **Acute LBP:** *lack of evidence for clinical or cost-effectiveness. Consensus view that alternative needed where NSAID could not be used or was not effective, alongside a research recommendation*
  - **Chronic LBP:** *potential harms and adverse events outweighed small benefits. Not cost-effective.*
- **Antidepressants:** Amitriptyline, SSRIs, SNRIs
  No clinically important differences compared to placebo

NICE NG59 2020

Not recommended cont…

- **Orthotics, belts, corsets, rocker sole shoes**
  Very limited clinical evidence of benefit
- **Traction**
  Very limited clinical evidence of benefit
- Electrotherapies
  - **PENS:** *clinical benefit, insufficient evidence as recommendation would be a significant change in clinical practice*
  - **TENS:** *conflicting evidence*
  - **Interferential:** *evidence of no clinical benefit*
  - **Therapeutic ultrasound:** *insufficient evidence of clinical benefit*

NICE NG59 2020

Not recommended cont…

- Spinal injections for low back pain (without sciatica)
  - **Facet joint injections:** *no short term clinical effect versus saline, uncertainty of clinically important differences versus active comparators*
  - **Medial branch blocks:** *no clinically important difference*
  - **Intradiscal therapy:** *heterogeneous results, low quality evidence, may not be applicable to UK population, risk of potential harm*
  - **Prolotherapy:** *considerable uncertainty in effect size, confounding treatments (manipulation)*
  - **Trigger point injections:** *Steroid + local anaesth: no short term clinical effect. Botulinum toxin: insufficient evidence*
  - **Epidural steroid**: *no clinically important difference*

NICE NG59 2020

Not recommended cont…

- **Spinal fusion for low back pain**, except as part of RCT
  No consistent clinical benefit over comparator treatments, considerable evidence of harm, not cost effective. Studies generally suffer from low number of patients, large cross over and case selection bias. Research recommendation for multi-centre RCT with sufficient power. Specific causes of LBP out of scope for this review
- **Lumbar disc replacement**
  No consistent clinical benefit over comparator treatments, considerable evidence of harm, lack of long term follow up, uncertainty about cost effectiveness. Specific causes of LBP out of scope for this review

NICE NG59 2020

Research recommendations

- What is the clinical and cost effectiveness of **benzodiazepines** for the acute management of non-specific low back pain?
- What is the clinical and cost effectiveness of **codeine with and without paracetamol** for the acute management of non-specific low back pain?
- What is the clinical and cost effectiveness of **radiofrequency denervation** for chronic non-specific low back pain in the long term?
- What is the clinical and cost effectiveness of **image-guided compared with non-image-guided epidural injections** for people with acute sciatica?
- Should people with non-specific low back pain be offered **spinal fusion** as a surgical option?
- What is the cost-effectiveness of providing **long term support** (>12 months) for people with chronic, non-specific low back pain with or without sciatica, in reducing health care utilisation?
- What is the clinical and cost-effectiveness of **laser therapy** in the management of low back pain and sciatica?
- What is the clinical and cost effectiveness of **antidepressants** for the management of sciatica?

NICE NG59 2020