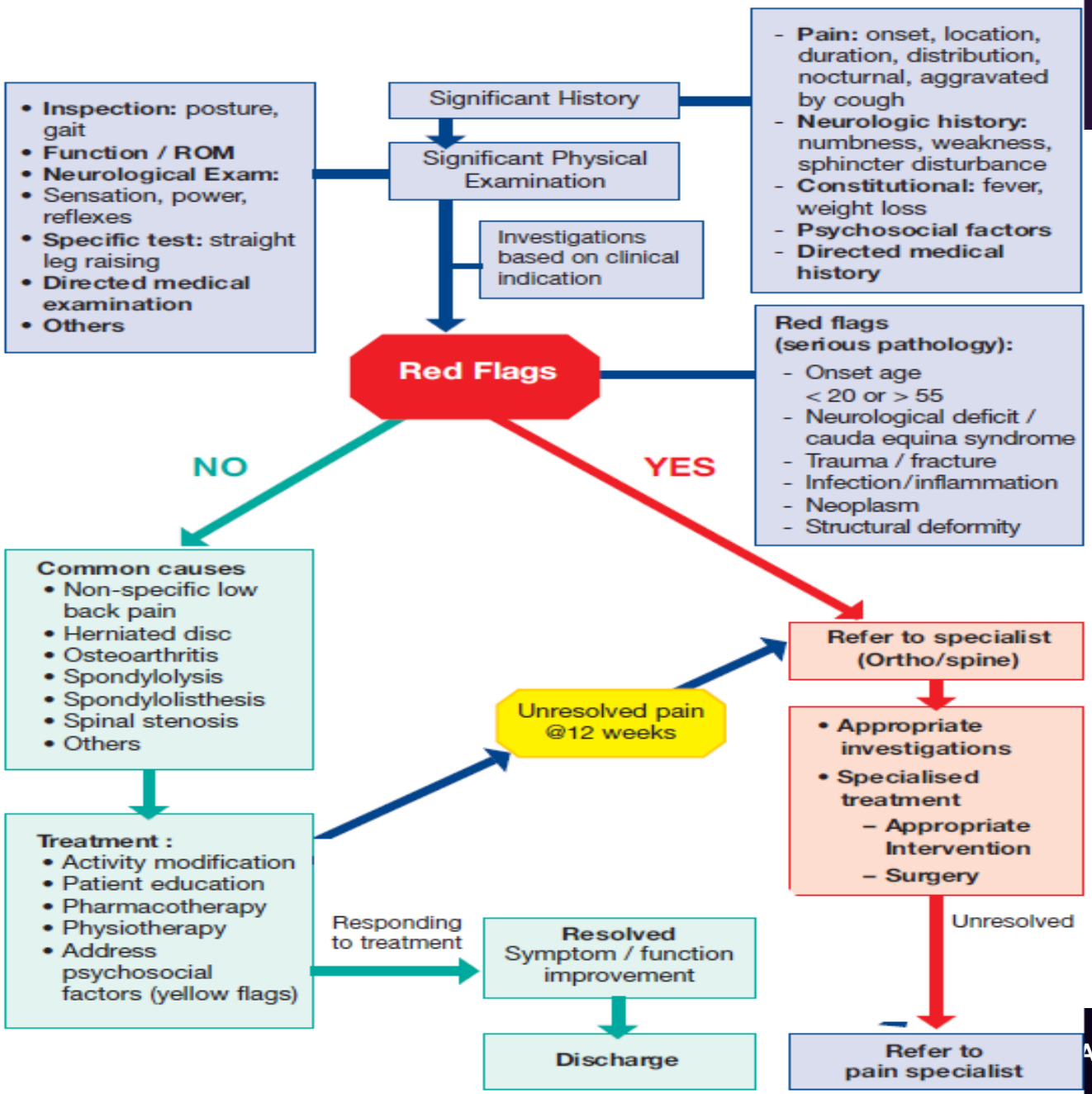
Back pain

Introduction

- Prevalence :10-63%
- Malaysia: 12-60%
- Back pain: pain in the lumbosacral region, buttocks and/or thighs
- sciatica pain: pain in the back associated with leg pain, which radiates to the calf, foot or toes and may be associated with numbness and/or muscle weakness
- acute : < 12 weeks

  chronic : > 12 weeks

Diagnostic and Management Algorithm for Low Back Pain



Case 1

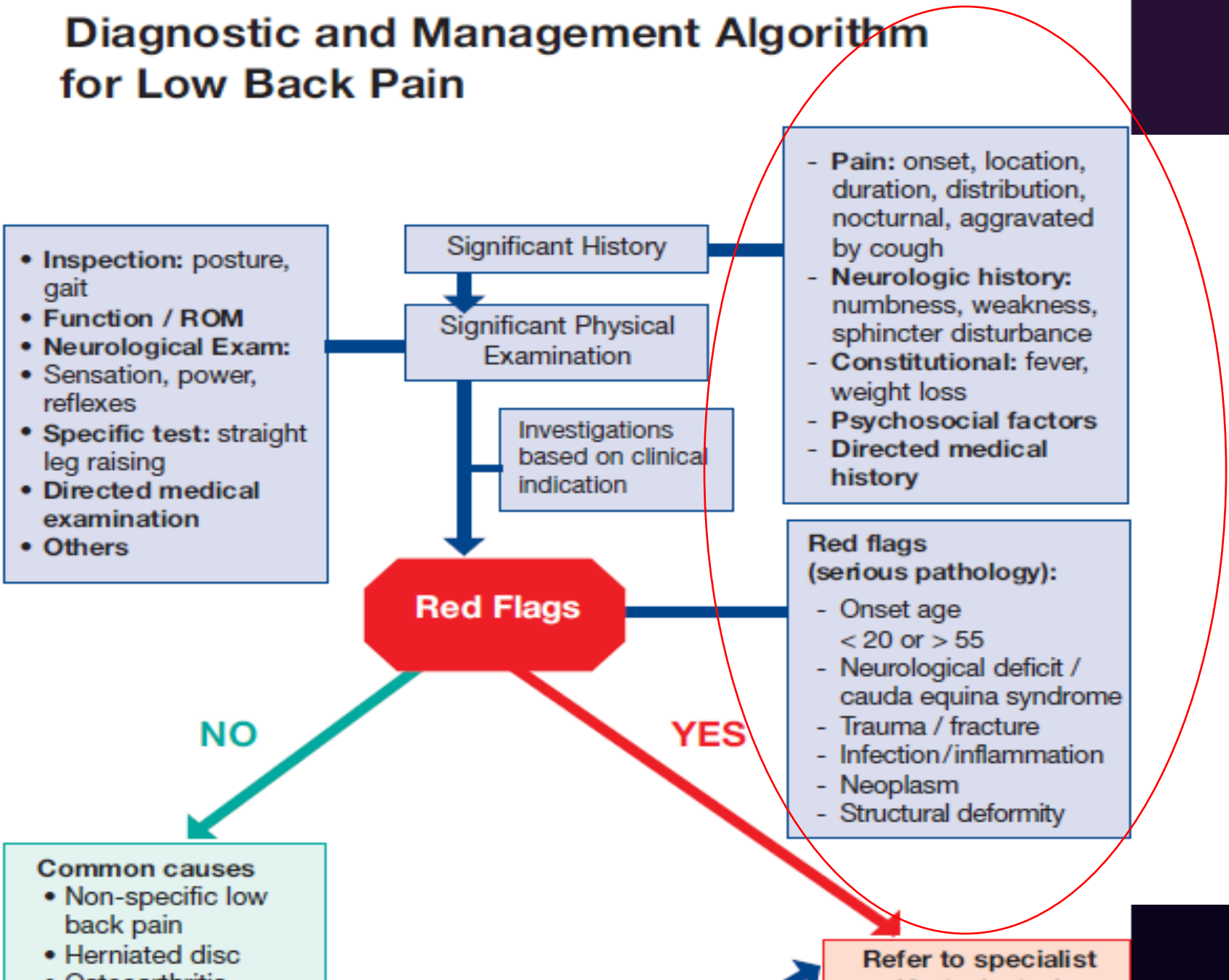
Profile

- Name : Mr R
- Age : 35 years old
- Occupation : store keeper

Chief complain

- C/o back pain for the past two days
- What further history?

Diagnostic and Management Algorithm for Low Back Pain



Case 1(cont)

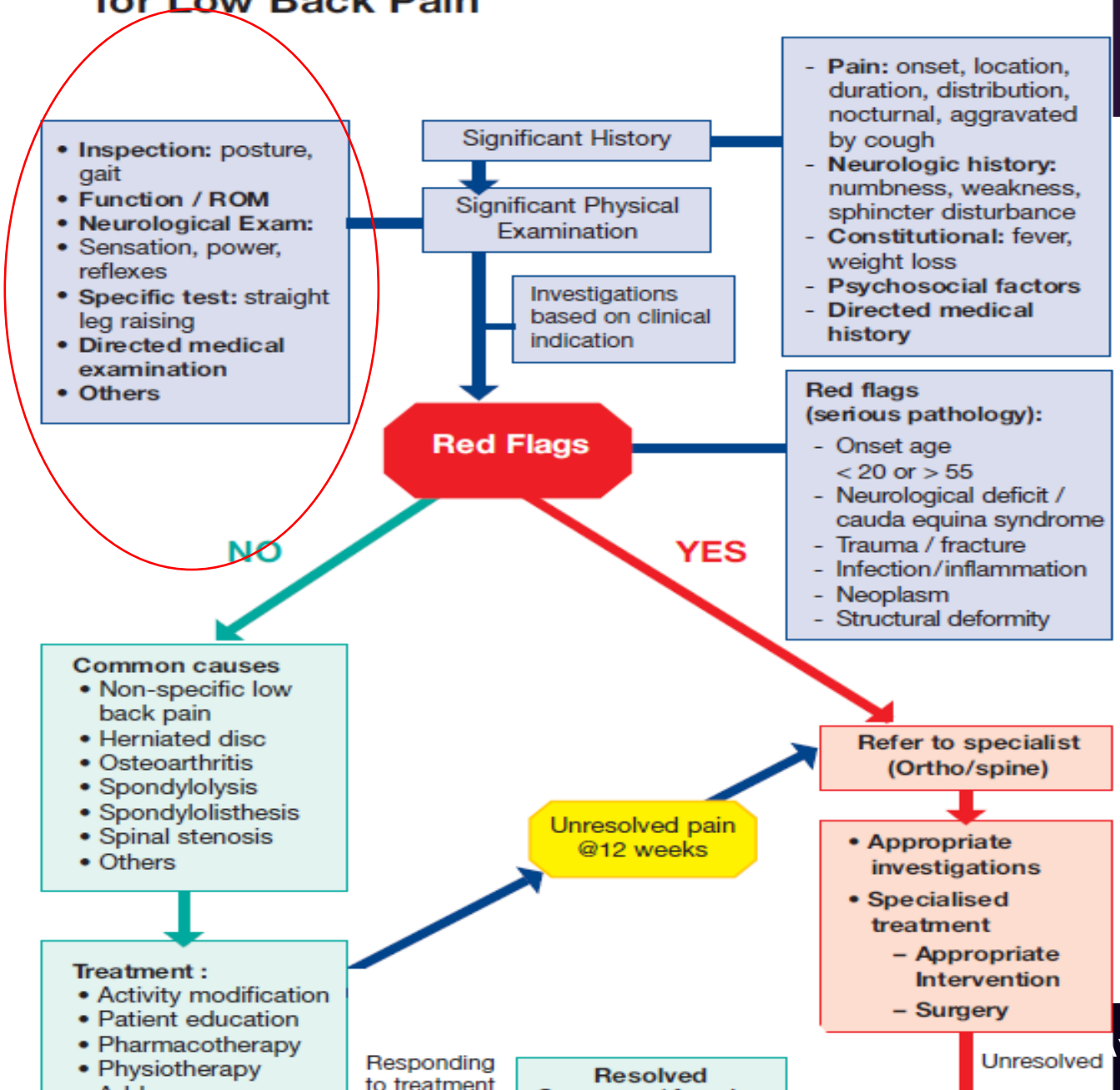
History

- No red flag. Having the pain for past two year. On and off. Started when he do heavy lifting.
- Yesterday, stock audit day.
- Pain located at lumbar region. No radiation.
- Pain score: 7-8
- No numbness, no weakness
- No s/s of depression

- Next step?

Physical examination

Diagnostic and Management Algorithm for Low Back Pain



Physical examination of the Spine

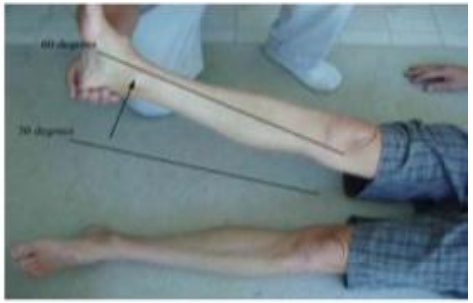
Standing	Inspect the back for deformities Palpate for muscle guarding, trigger points range of motion Gait Heel and Toe Walking
Supine	Hip joint range of motion Straight Leg Raising Test* Cross SLR* Neurological examination
Prone	Palpate for muscle guarding, trigger points
Sitting	Straight Leg Raising Test* (SLR)

Physical examination (cont)

Straight leg raising Test

- ***How***:
  - Ask the patient to lie down on their back.
  - Have the patient completely relax the affected leg.
  - Cup the heel of their foot and gently raise the leg

  .
- ***Positive test:***
  - Sciatic pain at 30-70 degree
  - Aggravation of pain dorsiflexion of the foot
  - Relief of pain by knee flexion



Physical examination (cont)

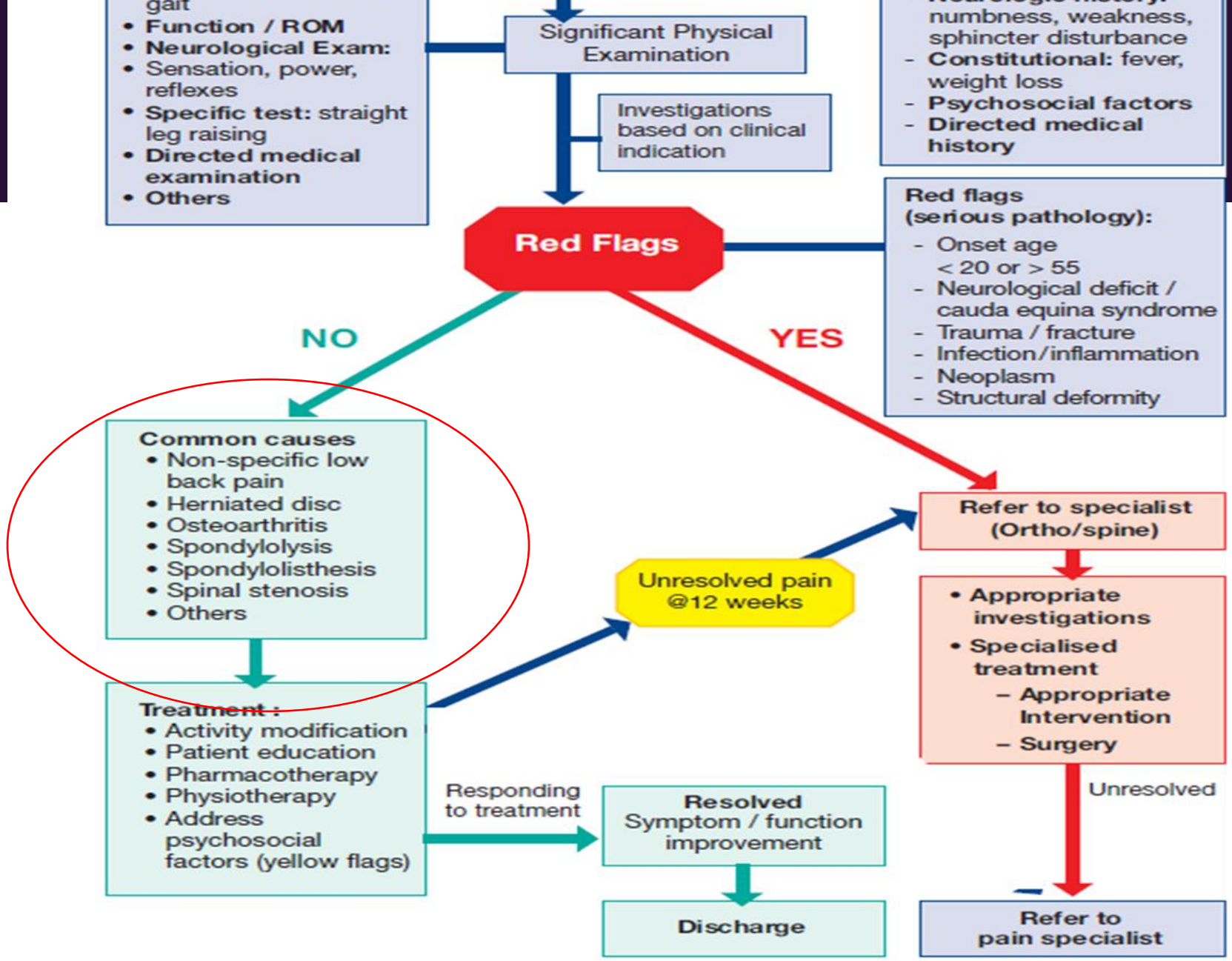
Neurological Examination of The Lower Limbs	
Inspect for muscle atrophy (calf and thigh)	
Muscle Strength	Hip flexion, extension, abduction and adduction Knee flexion and extension Ankle flexion and extension Big toe flexion and extension(Prolapsed disc with significant nerve root impingement
Deep Tendon Reflexes	Knee Ankle
Sensation	Light touch Pin prick (Saddle anaesthesia and/or lax anal tone indicates cauda equina lesion

Case 1(cont)

Physical examination

- Inspection: Posture normal
- ROM: flexion-60, extension-15
- Neurological exam: power and sensation normal, no deficit
- Special test: Straight leg raising negative

- Diagnosis?

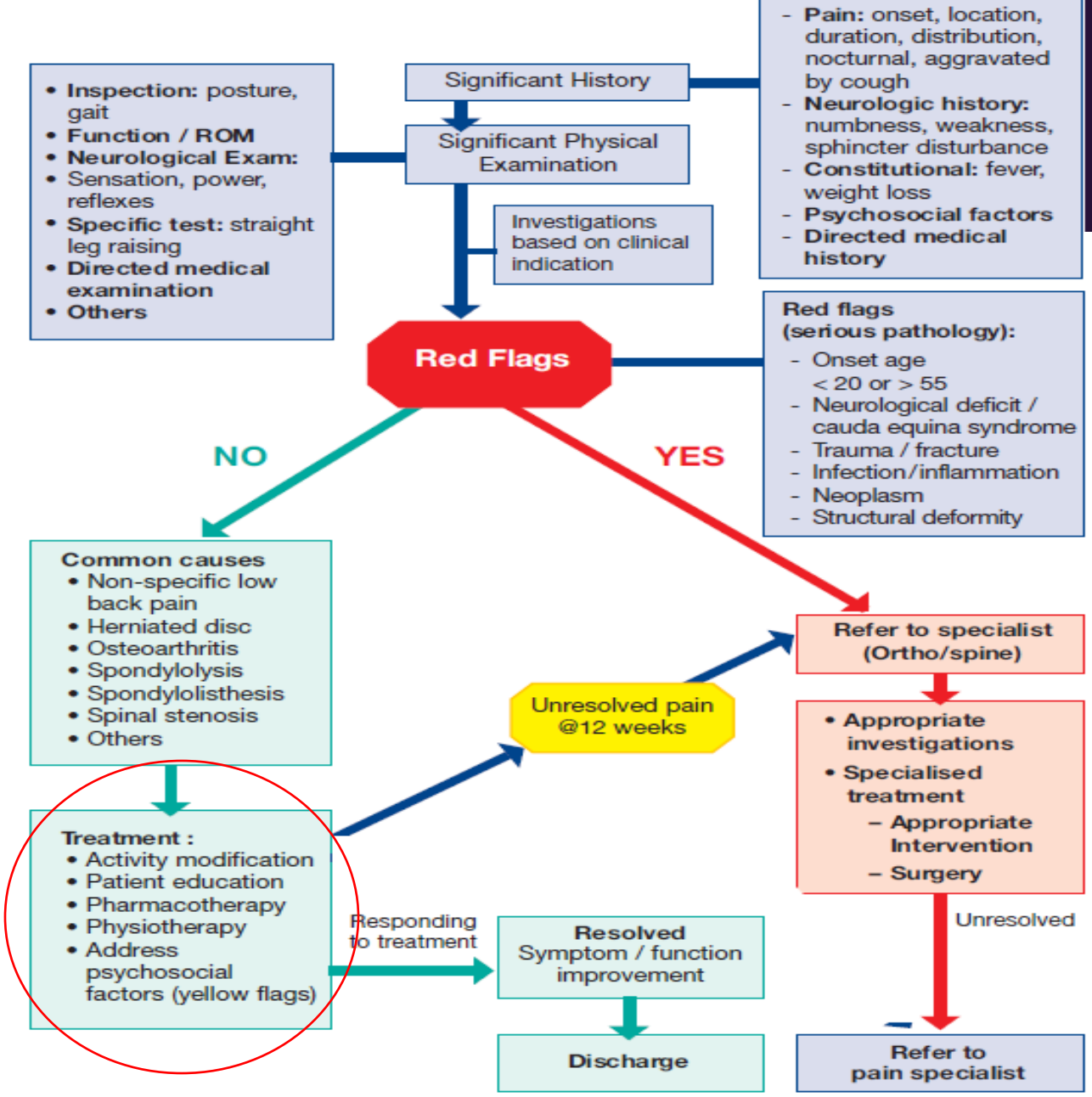

gait
• Function / ROM
• Neurological Exam:
• Sensation, power, reflexes
• Specific test: straight leg raising
• Directed medical examination
• Others
Significant Physical Examination
Investigations based on clinical indication
numbness, weakness, sphincter disturbance
- Constitutional: fever, weight loss
- Psychosocial factors
- Directed medical history
Red Flags
Red flags (serious pathology):
- Onset age < 20 or > 55
- Neurological deficit / cauda equina syndrome
- Trauma / fracture
- Infection/inflammation
- Neoplasm
- Structural deformity
NO
YES
Common causes
• Non-specific low back pain
• Herniated disc
• Osteoarthritis
• Spondylolysis
• Spondylolisthesis
• Spinal stenosis
• Others
Refer to specialist (Ortho/spine)
Unresolved pain @12 weeks
• Appropriate investigations
• Specialised treatment
– Appropriate Intervention
– Surgery
Treatment :
• Activity modification
• Patient education
• Pharmacotherapy
• Physiotherapy
• Address psychosocial factors (yellow flags)
Responding to treatment
Resolved
Symptom / function improvement
Unresolved
Discharge
Refer to pain specialist

Case 1(cont)

Diagnosis:

Non-specific low back pain/ mechanical

- Treatment?


- Pain: onset, location, duration, distribution, nocturnal, aggravated by cough
- Neurologic history: numbness, weakness, sphincter disturbance
- Constitutional: fever, weight loss
- Psychosocial factors
- Directed medical history
Significant History
• Inspection: posture, gait
• Function / ROM
• Neurological Exam:
• Sensation, power, reflexes
• Specific test: straight leg raising
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Pharmacological approach

Types of pain	Drug class	Drug group-options
Nociceptive/ somatic • Back pain with or without referred pain	Simple analgesics	Paracetamol
	Compound analgesics	Paracetamol + codeine
	NSAIDS	Diclofenac, mefenamic acid, ibuprofen
	COXIBs	Celecoxib, Etoricoxib
	Opiods	Tramadol
Neuropathic/ radicular pain • Burning back pain • Radicular leg pain	Anticonvulsants	Gabapentin, Pregabalin
	Antidepressants (TCA, SNRI)	Amitriptyline, Prothiaden Venlafaxine, Duloxetine
	Opiods	Tramadol, Oxycodone
Mixed nociceptive and neuropathic pain	Combination of drugs from above classes can be used	

Non-pharmacological approach

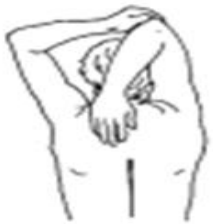
- active physiotherapy i.e. exercise
- Initiation of exercise is to prevent deconditioning.
- The aim of physical therapy in patients with chronic back pain is functional restoration.
- The 3 main components of exercise are stretching , strengthening and aerobic exercises
- Patients must be advised to have a consistent daily exercise routine regardless of pain level
- Activity levels should be gradually built up from the patient's baseline to a specific target.
- Patients should also be advised not to overdo on days when they have less pain

Stretches

It is recommended to do stretches 2-3 times a day at least. For a stretch to be effective, the position should be held up to a count of 15, and each stretch should be done twice on each side.

Shoulder-neck stretch

Posterior shoulder stretch



Triceps stretch

Spinal rotation

Pectoral and anterior chest wall stretch

Calf stretch

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Quadriceps stretch

Hamstrings stretch

Hip exterior stretch

Gluteals stretch

Back arch press-up

Sciatic nerve stretch

Latissimus stretch

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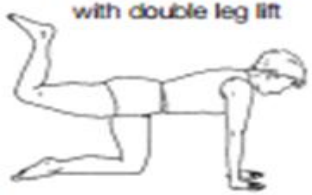
Strengthening Exercises

It is recommended to do strengthening exercises at least 3 times a week. The number of repetitions for each exercise should be increased as your strength increases with time.

Abdominal hollowing

Abdominal hollowing with double leg lift

Hip extension with knee extension



Hip extension with knee bent

Lunge

Vastus medialis obliquus retraining

Neck retraction

Hip abductor strengthening

Shoulder retraction with arm raise

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References : • Chou R et al: Diagnosis and Treatment of Low Back Pain: A Joint Clinical Practice Guideline from the American College of Physicians and the American Pain Society. Annals of Internal Medicine 147(7):478-491, 2007. • Guzman J et al: Multidisciplinary rehabilitation for chronic low back pain: systematic review. BMJ 2001;322:1511- 1516. • S.P. Stanos et al: The Physiatric Approach to Low Back Pain. Seminars in Pain Medicine. 2:186-196, 2005. • Guideline from National Guideline Clearinghouse for Acute Low Back Pain www.guideline.gov/summary/summary • Karen R Barr and Mark A. Harrast: Low Back pain, in Randall L. Braddom (ed) Physical Medicine and Rehabilitation, 2007, pp 883-908.

Case 1 (cont)

Management

- Activity modification: MC but with normal daily activity
- Education : Back care
- Pharmacotherapy : NSAIDS
- Physiotherapy : pain relieve, back care
- Address psychological factor

Case 1 (cont)

Follow up

- Review after two weeks
- Pain resolved
- on regular back exercise and back physio

Case 2

Profile

- Name : Madam R
- Age : 64
- Occupation : housewife

Chief complain

- Back pain for 1 years

Case 2: History

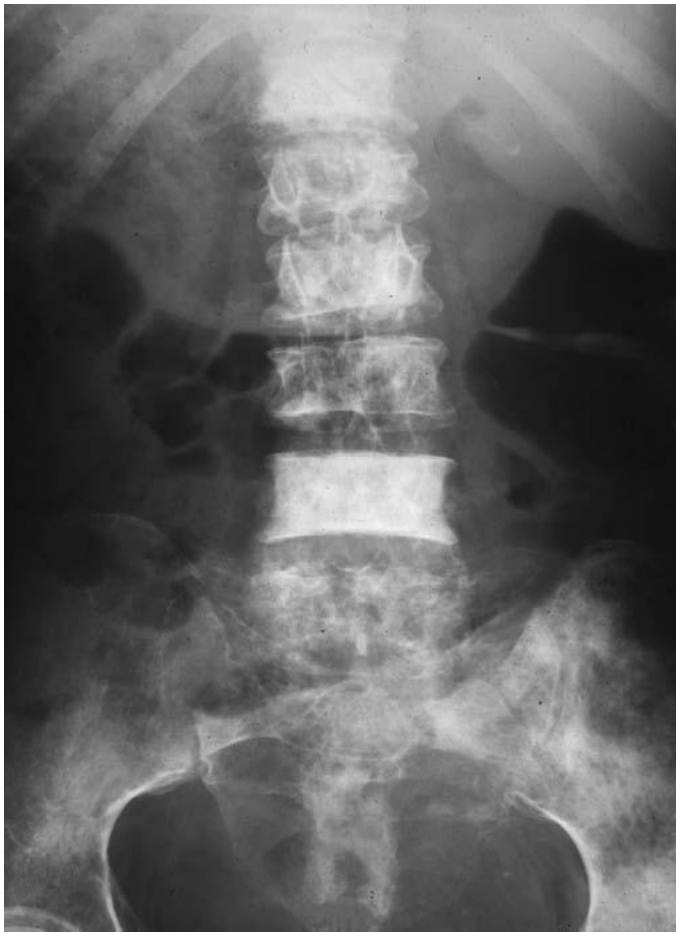
- Having the pain for past one year. On and off. No specific aggravating or relieving symptoms
- Pain located at lumbar region. No radiation.
- Pain score: 5-6
- No numbness, no weakness
- No s/s of depression
- Occasionally wake up at night due to pain
- No fever.
- History of breast cancer 5 years ago. Mastectomy done. No chemotherapy
- No history of trauma
- Patient had visited GP many times due to the pain. Given analgesic and back physio but no improvement

Case 2 (cont)

Physical examination

- Inspection: slightly scoop forward
- ROM: flexion-70, extension-10
- Neurological exam: power and sensation normal, no deficit
- Special test: Straight leg raising negative

Investigation



Case 2 (cont)

Management:

- Refer back to surgical and oncology
- Diagnose as metastasis bone disease
- Palliative care
- Pain management
- Pass away in one year