Non-Operative Management of Sciatica

Date:

June 6th, 2018

Presented By:

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spinemobility.com

OCA advance

Ontario Chiropractic Association

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Mount Sinai Hospital
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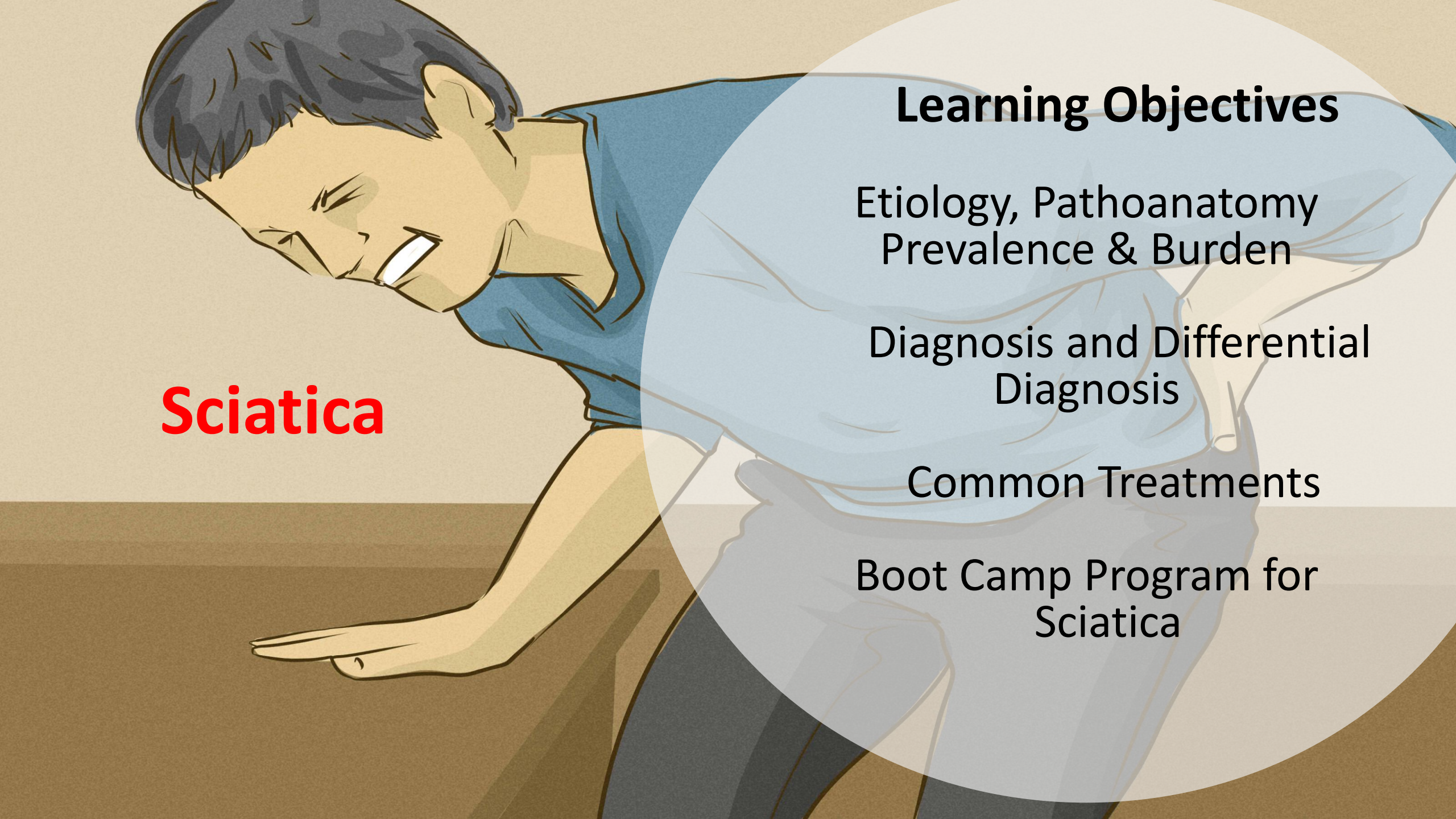


Sciatica

Learning Objectives

Etiology, Pathoanatomy
Prevalence & Burden

Diagnosis and Differential Diagnosis

Common Treatments

Boot Camp Program for Sciatica

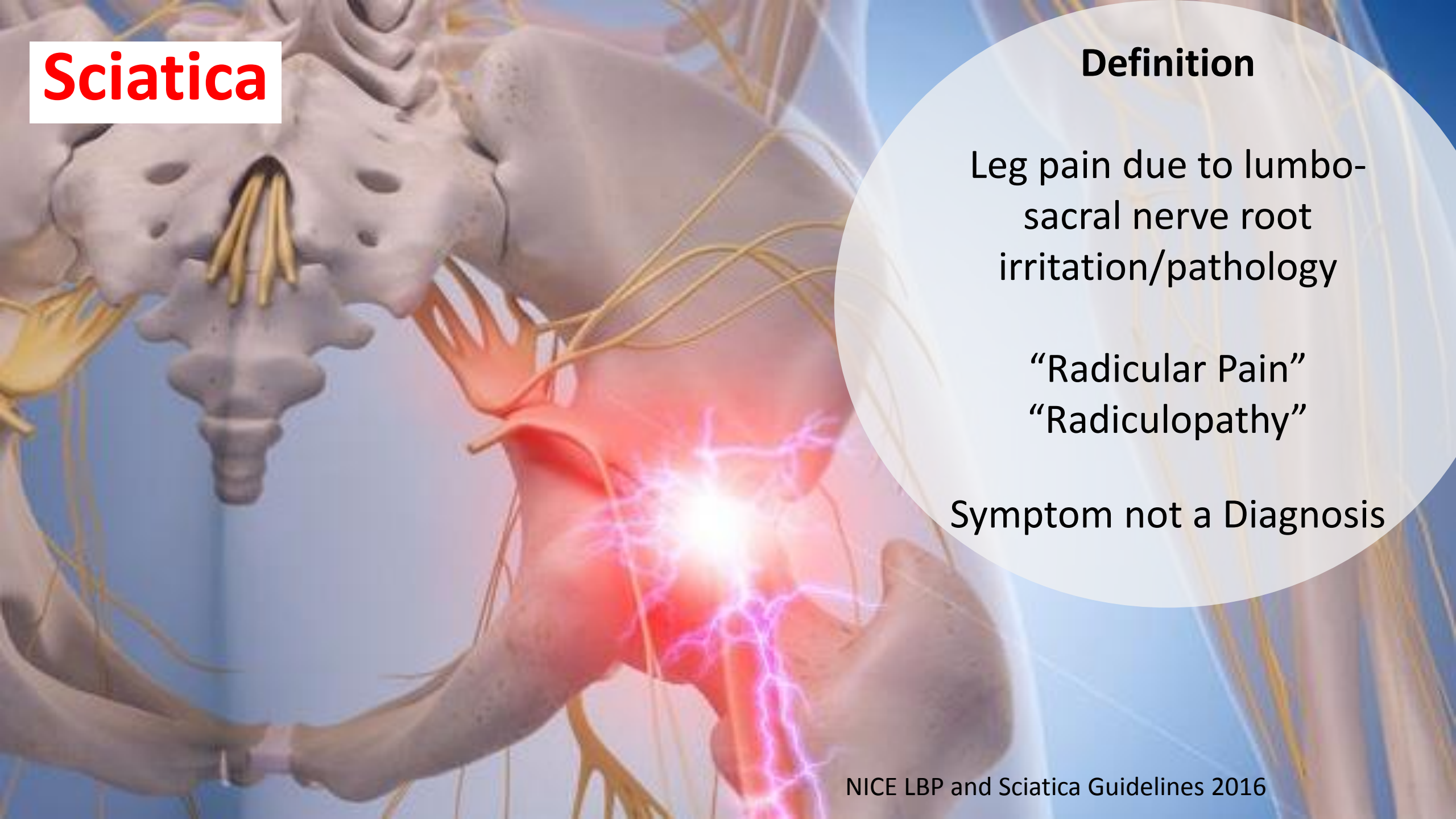
Disclosures

No Relationships with Commercial Interests

Funding: Canadian Chiropractic Research Foundation (CCRF)
and The Arthritis Society

Founder spinemobility Research & Resource Centre-
Not-for-Profit Organization

Sciatica



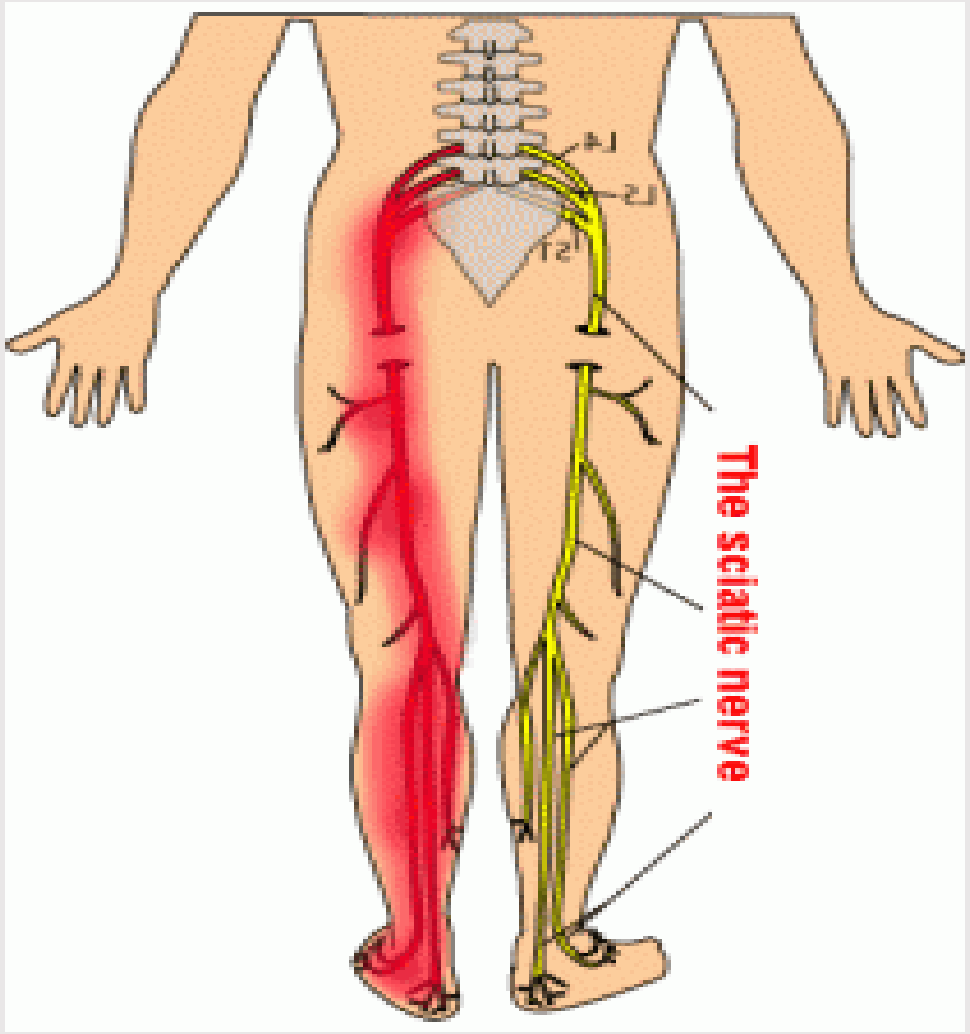
Definition

Leg pain due to lumbo-sacral nerve root irritation/pathology

"Radicular Pain"
"Radiculopathy"

Symptom not a Diagnosis

NICE LBP and Sciatica Guidelines 2016

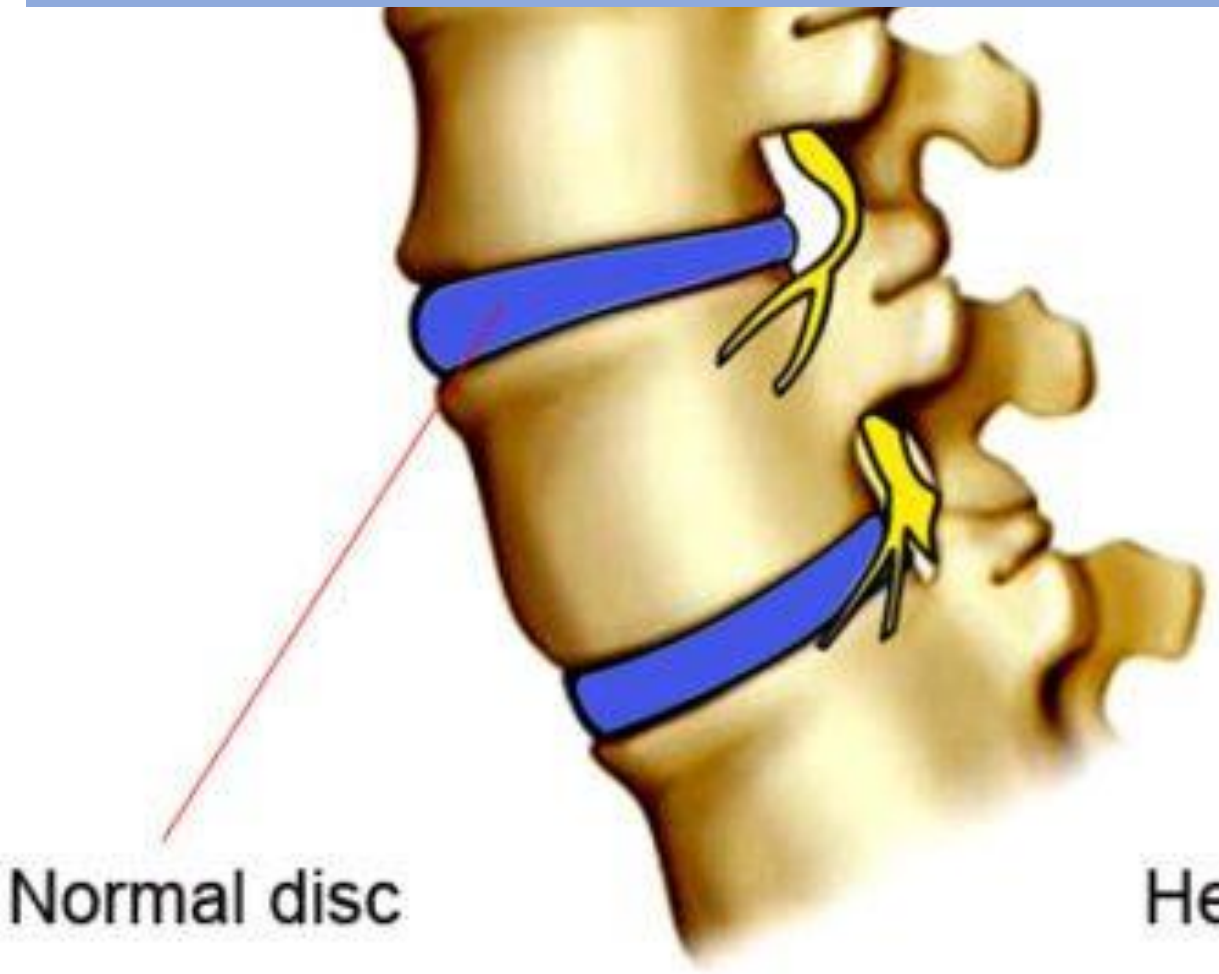


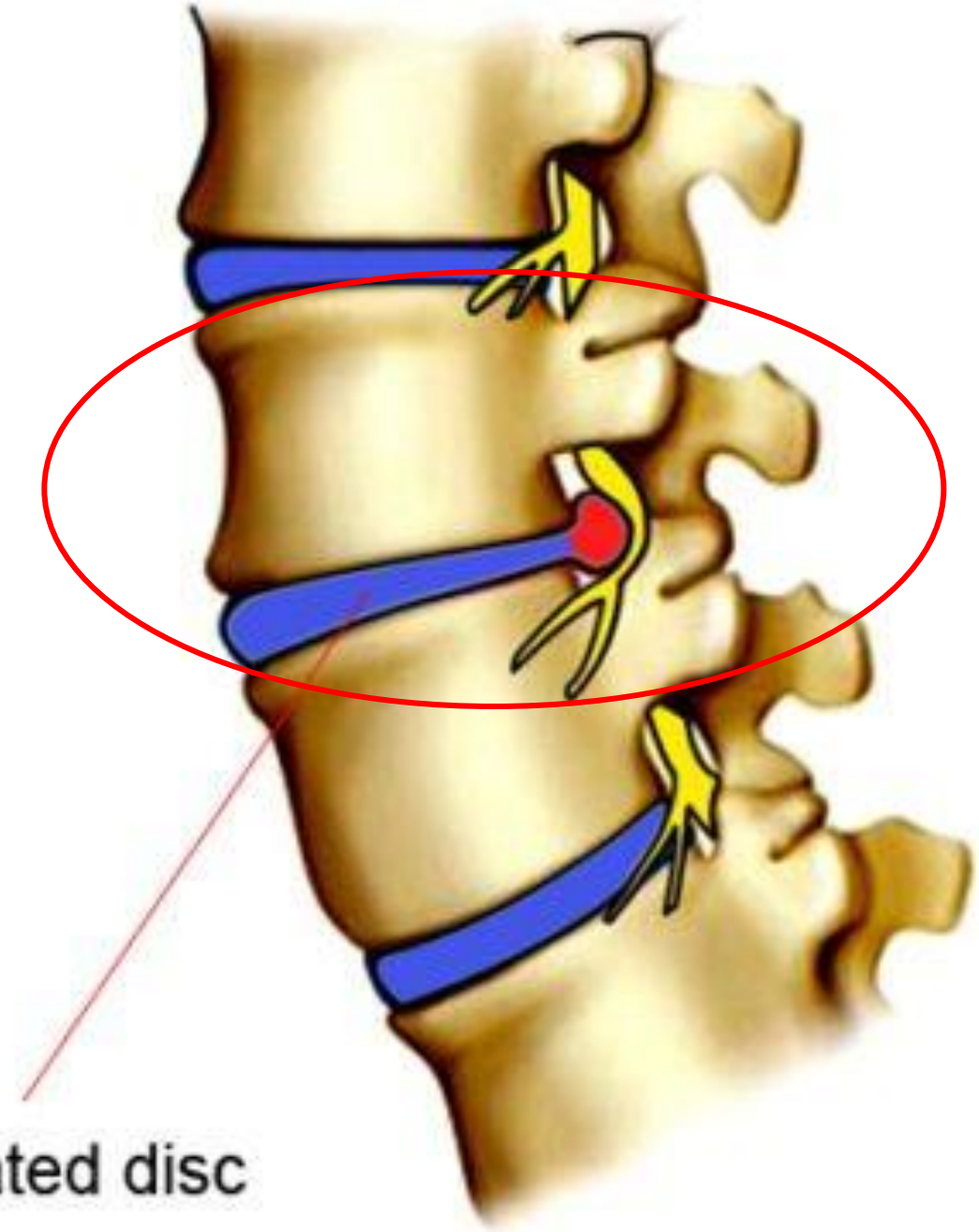
Causes of Nerve Root Irritation/Pathology

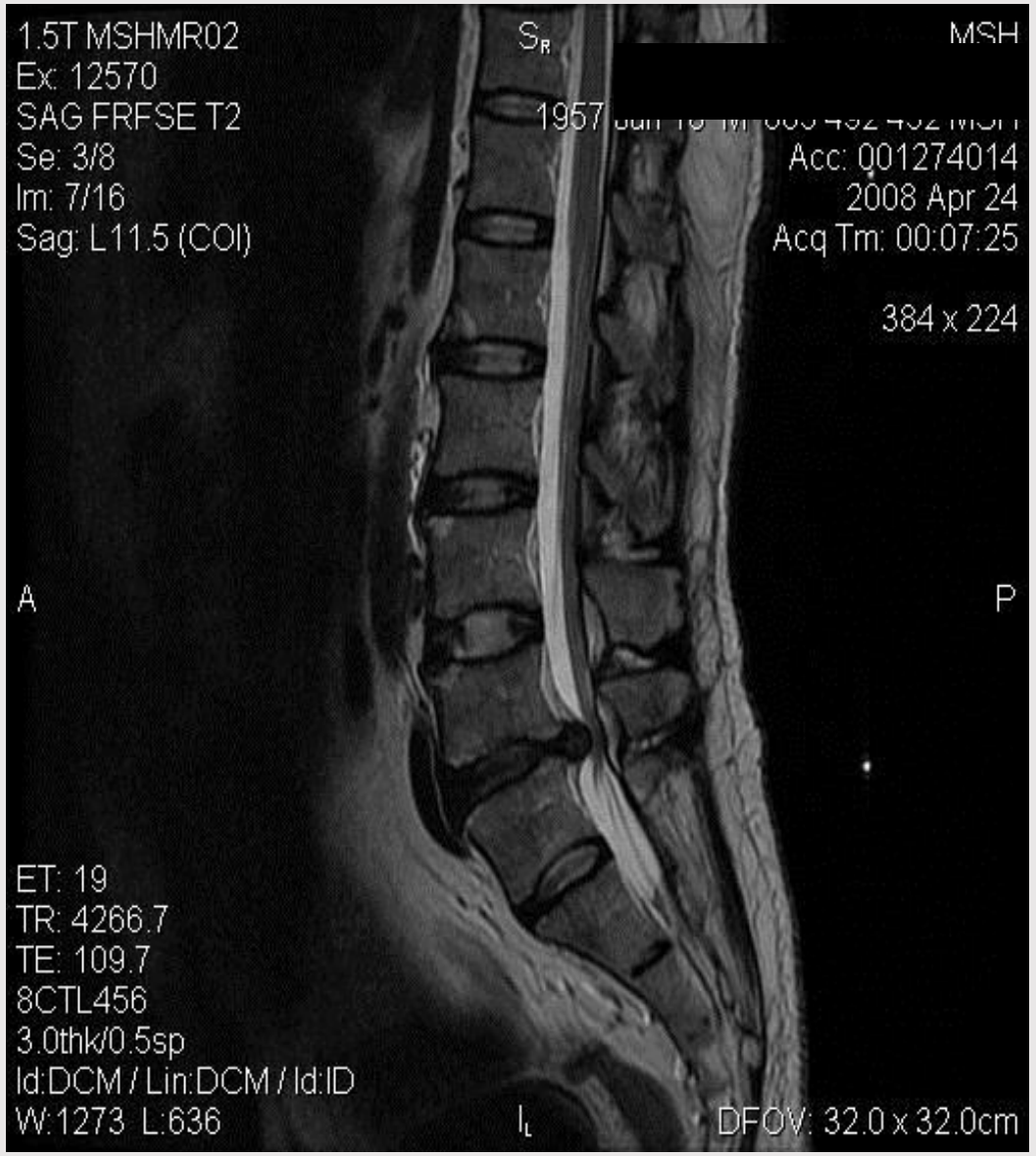
- Pelvic abscess/tumors/inflammation
- Spinal cancers/infection/fractures
- Neuro-ischemia due to lumbar spinal stenosis
- Lumbar disc lesion (herniation)

Valat et al Best Pract Res Clin Rheumatol 2010

Displacement of nucleus pulposus or annulus fibrosis beyond the intervertebral disc space







Lumbar Disc Herniation

Causes of Nerve Root Irritation/Pathology

- **Inflammatory mediators**
- **Direct compression**
- **Inflammatory adhesions**

Sciatica due LDH

Epidemiology

Highest prevalence 30-50 age
Male/Female ratio 2:1
Life-time prevalence 13%-40%
Annual prevalence 1%-5%
4% of all LBP
L5-S1 and L4-L5 most common

Haro et al J ortho Sci 2014, Jordan et al BMJ Clin Evid 2009, Stanford et al Br J Anaes 2007

Sciatica due LDH

Epidemiology

One of the most painful spinal conditions

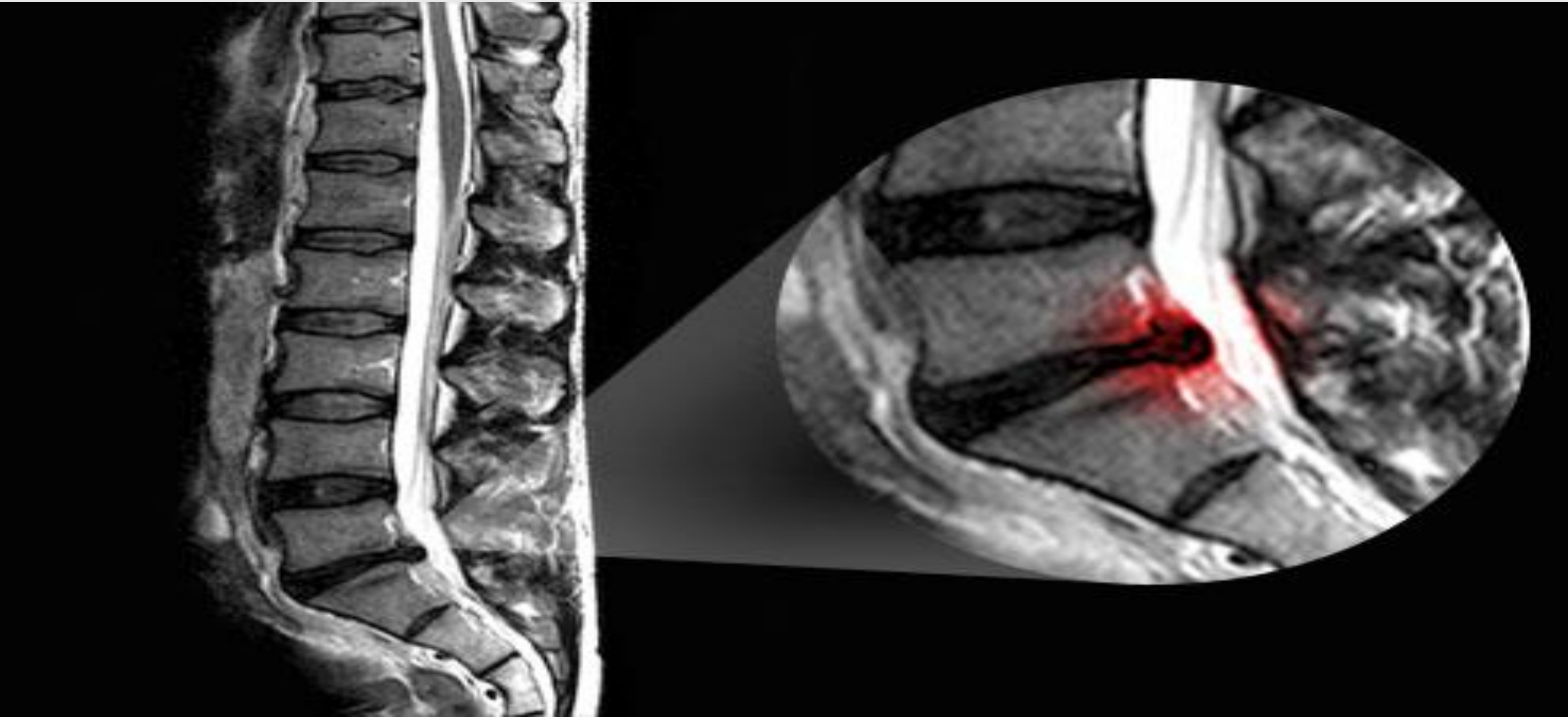
Majority cases resolve spontaneously

Modifiable risk factors: smoking, obesity, occupation and health status

Estimated heritability=21%

Haro et al J ortho Sci 2014, Jordan et al BMJ Clin Evid 2009, Stanford et al Br J Anaes 2007

Assessment

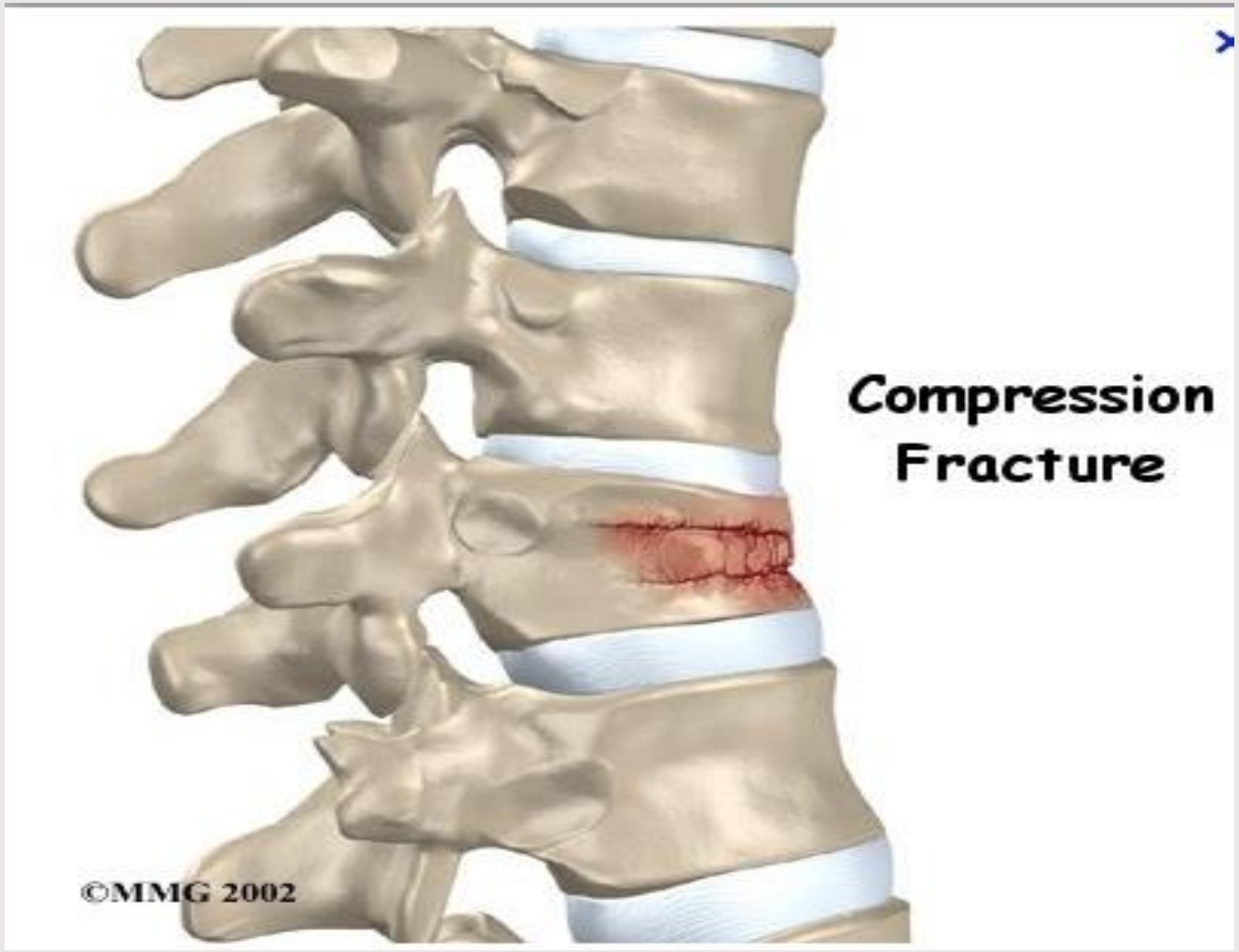


Condition	Red Flags
Cancer or Infection	History of cancer, unexplained weight loss, immunosuppression, urinary infection, IV drug use, prolonged corticosteroids, pain not improved with rest, especially for patient over age 50.
Spinal fracture	History of age-specific significant trauma, age >70, prolonged steroid use.
Cauda equina or Severe neurologic compromise	Acute onset of urinary retention or overflow incontinence, loss of anal sphincter tone or fecal incontinence, saddle anesthesia, global or progressive motor weakness in the lower limbs.
Spinal osteomyelitis	IV drug abuse, UI or skin infection
Herniated disc	Sciatica
Spinal stenosis	Pseudoclaudication, age >/= 50
Ankylosing spondylitis	Age at onset </= 40 pain not relieved supine morning back stiffness pain duration >/= three months

Vertebral Compression Fracture (VCF)

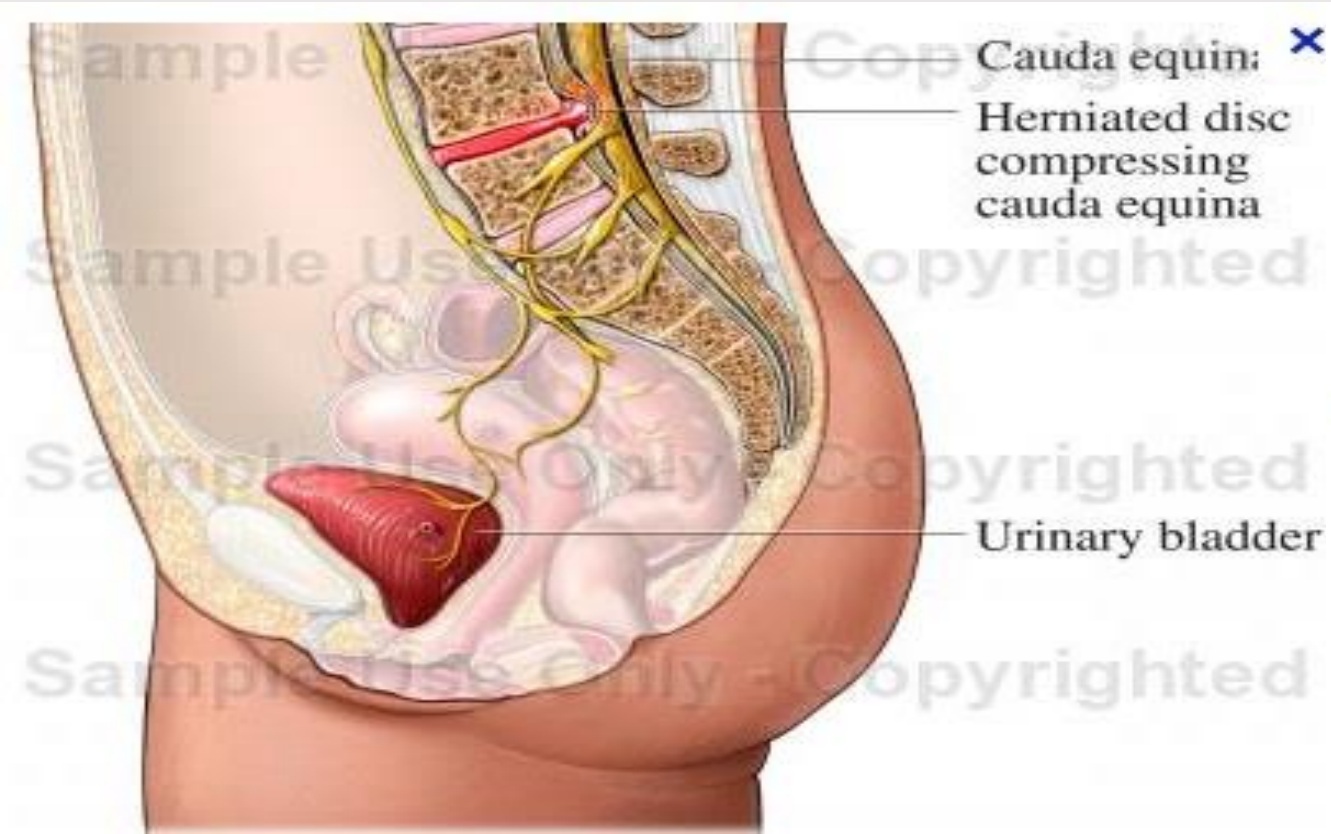
4%

T12-L1*



Cauda Equina Syndrome

Rare: 1 in 33,000 - 100,000
0.04% of all back pain presentations



The Keele STarT Back Screening Tool

Patient name: _____ Date: _____

This tool is used to help clinicians identify people who may potentially develop long term problem with their back and to guide clinicians to provide the right treatment to prevent long term problems.

Whilst any development of the STarT Back Tool (Tool) can be used by the general public, the Tool was not designed for use by the general public and the results should be interpreted in consultation with your health care practitioner.

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	Slightly	Moderately	Very much	Extremely
□	□	□	□	□
0	0	0	1	1

Total score (all 9): _____ **Sub Score (Q5-9):**_____

The overall score is used to separate the low risk patients from the medium-risk subgroup. Total Scores range from 0-9 and are produced by adding all positive items; Patients who achieve a score of 0-3 are classified into the low-risk subgroup and those with scores of 4-9 into the medium-risk subgroup. A sub score is calculated by adding all the positive items from questions 5 to 9. A sub score of 3 or less is classified as medium risk and a sub score of 4 or more is classified as high risk.

Permission to spinemobility to use tool from Keele University

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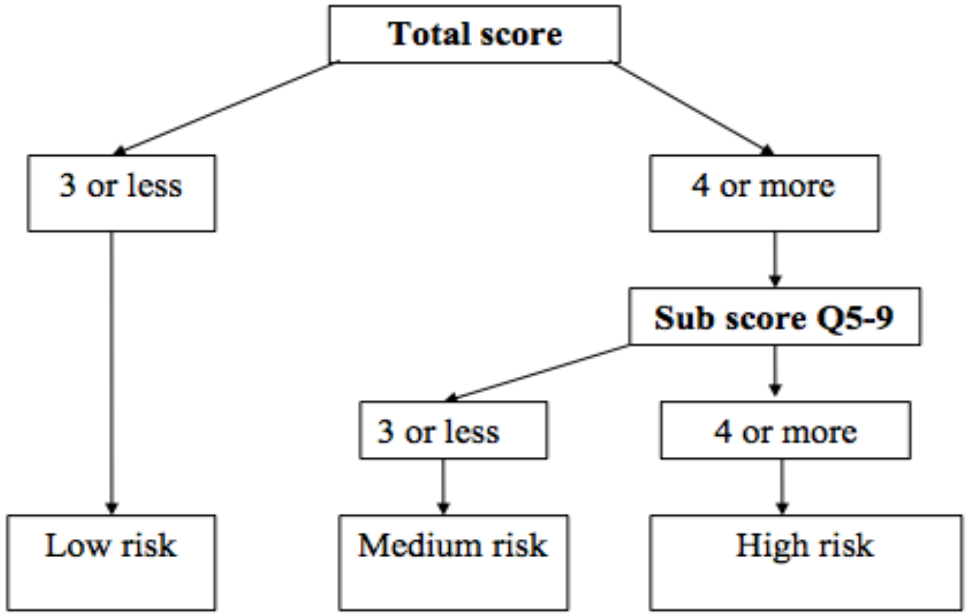
Funded by Arthritis Research UK

The STarT Back Tool Scoring System



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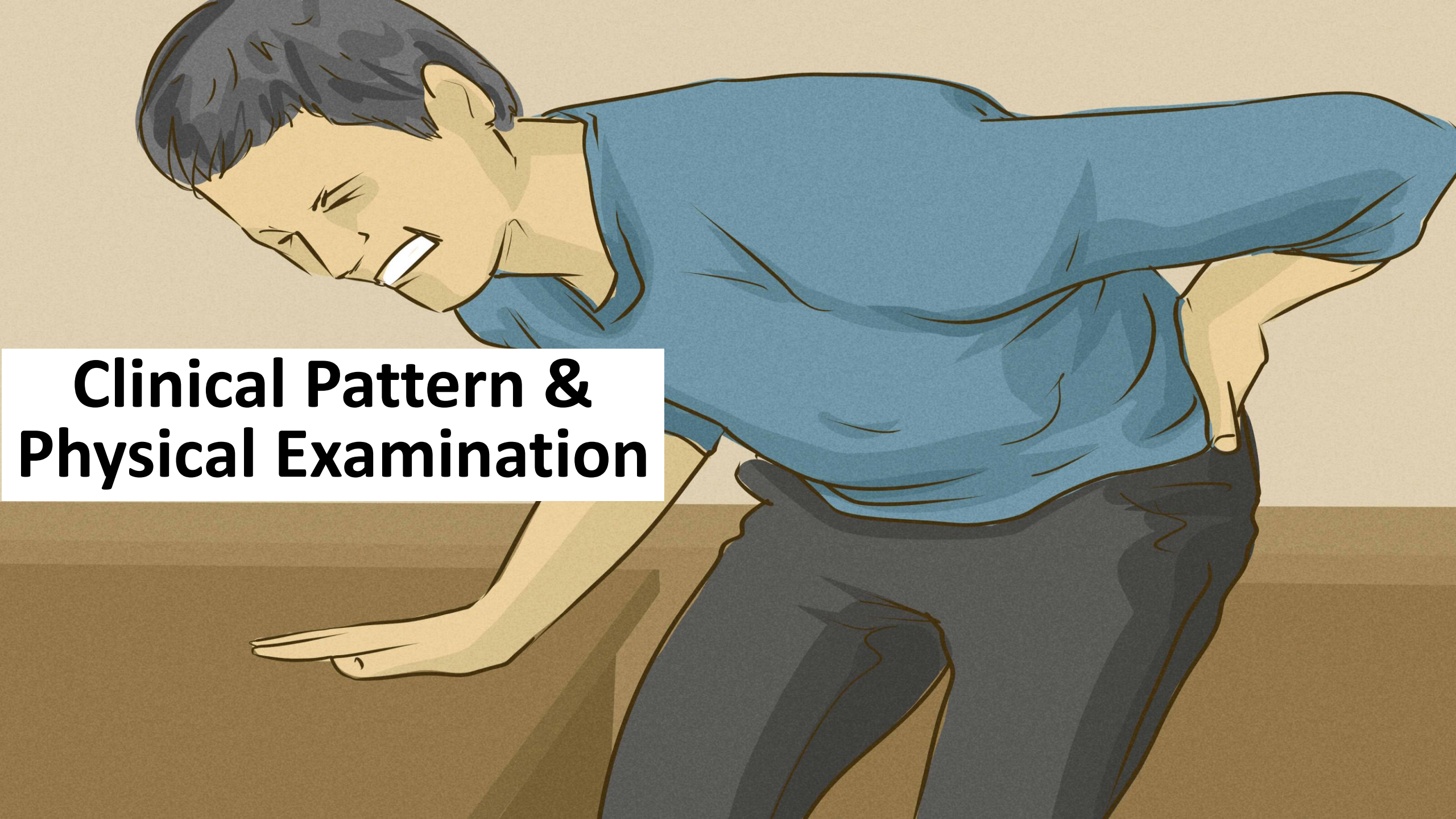
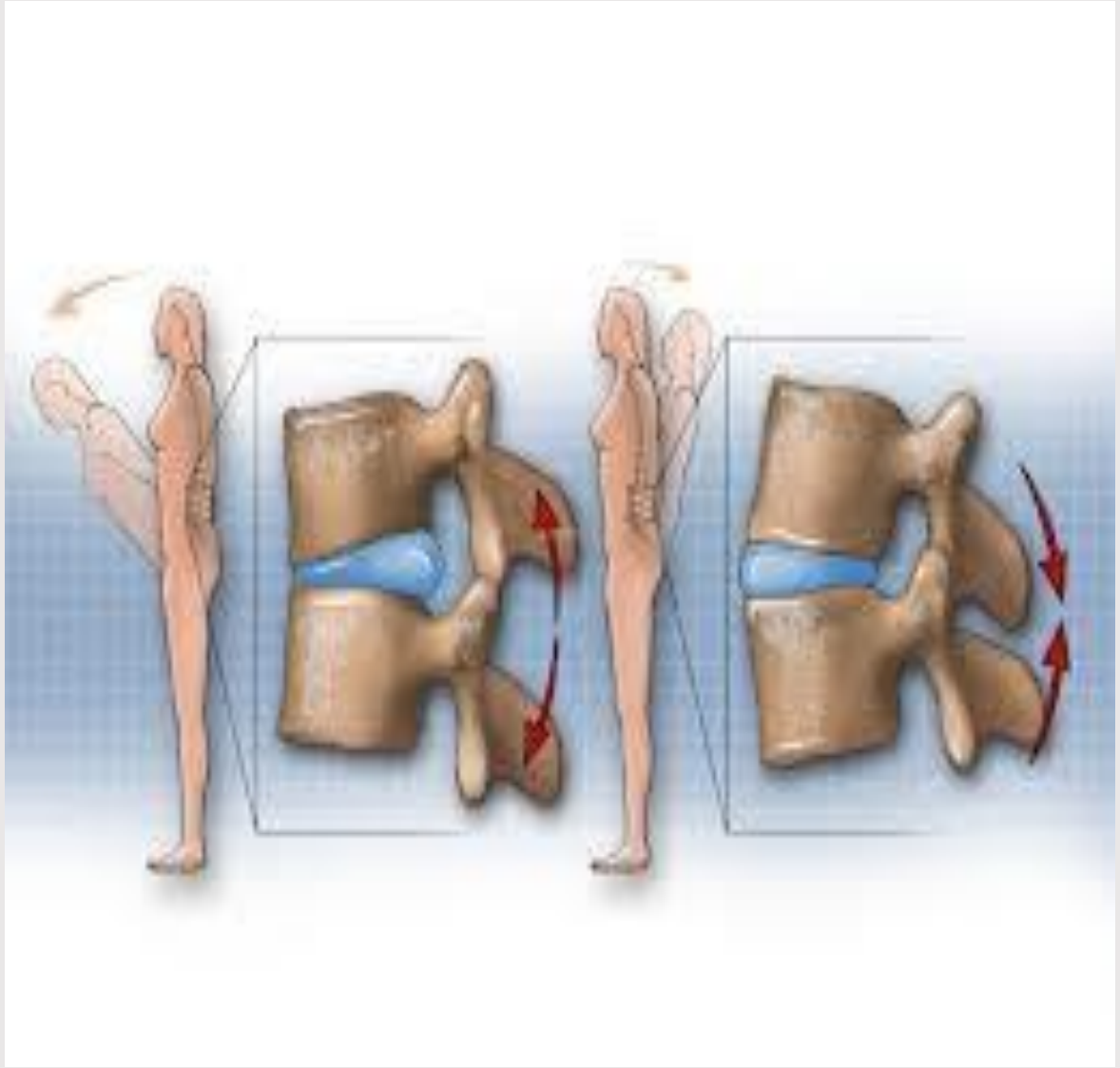
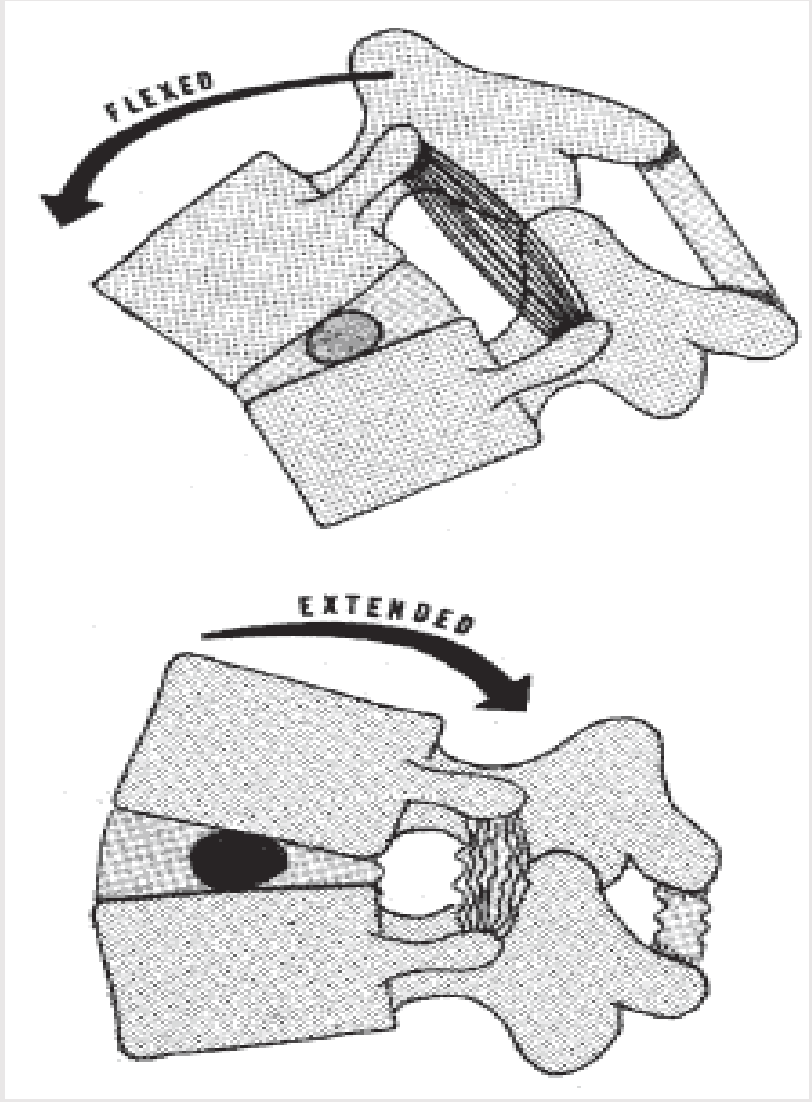
Funded by Arthritis Research UK



Clinical Pattern & Physical Examination

Clinical Pattern or Directional Preference





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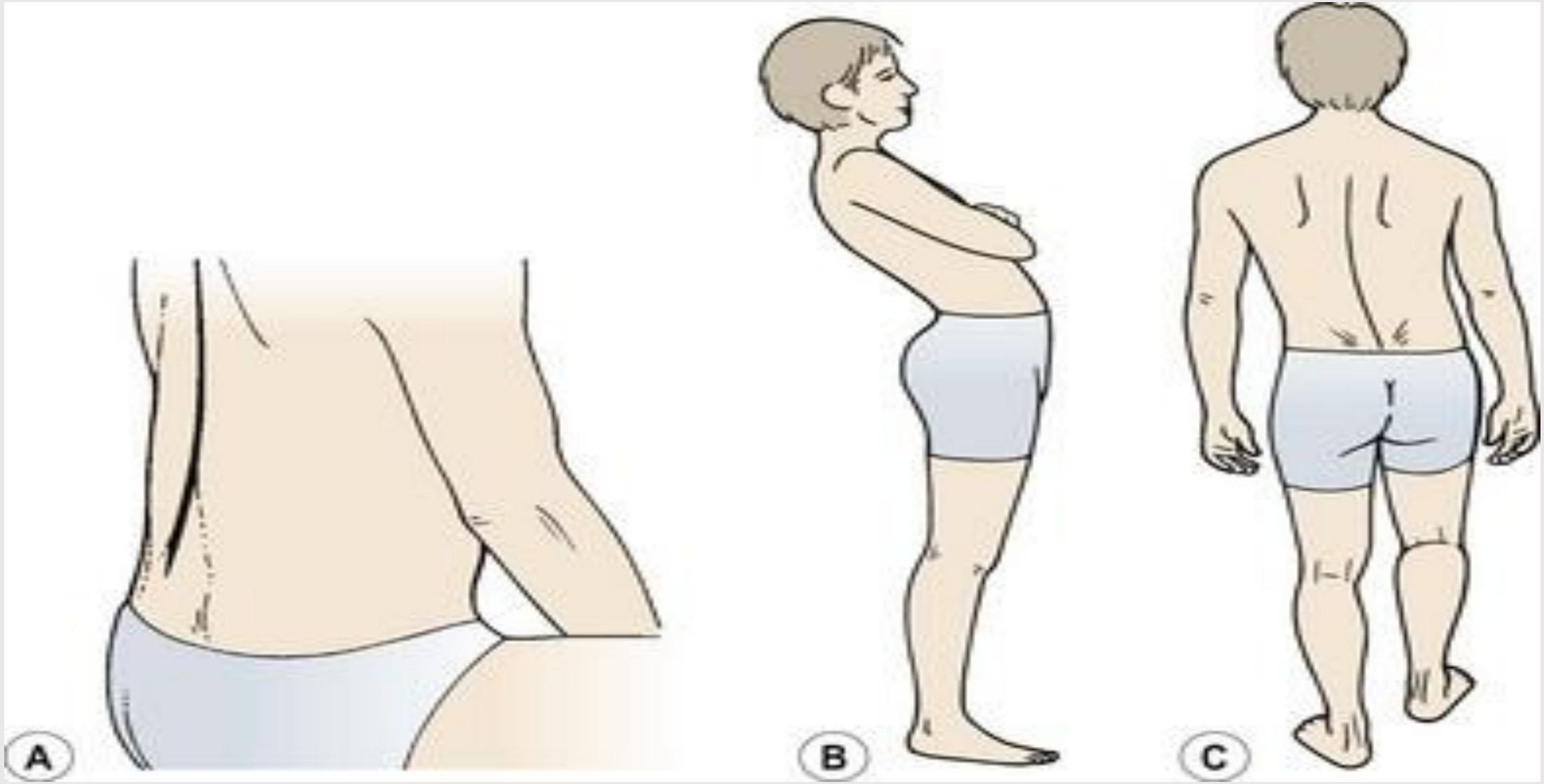
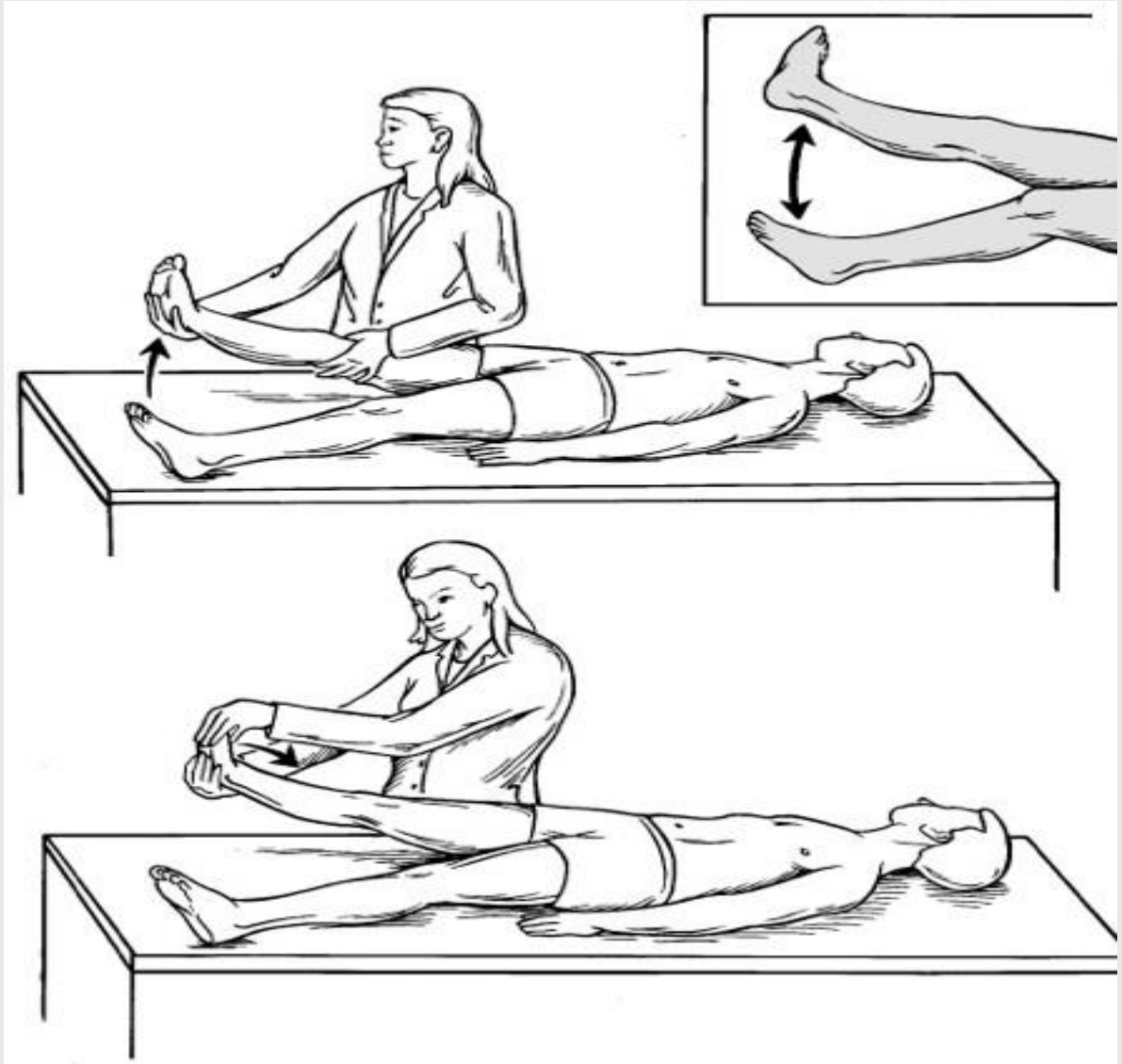


Neural Tension – SLR and Cross SLR

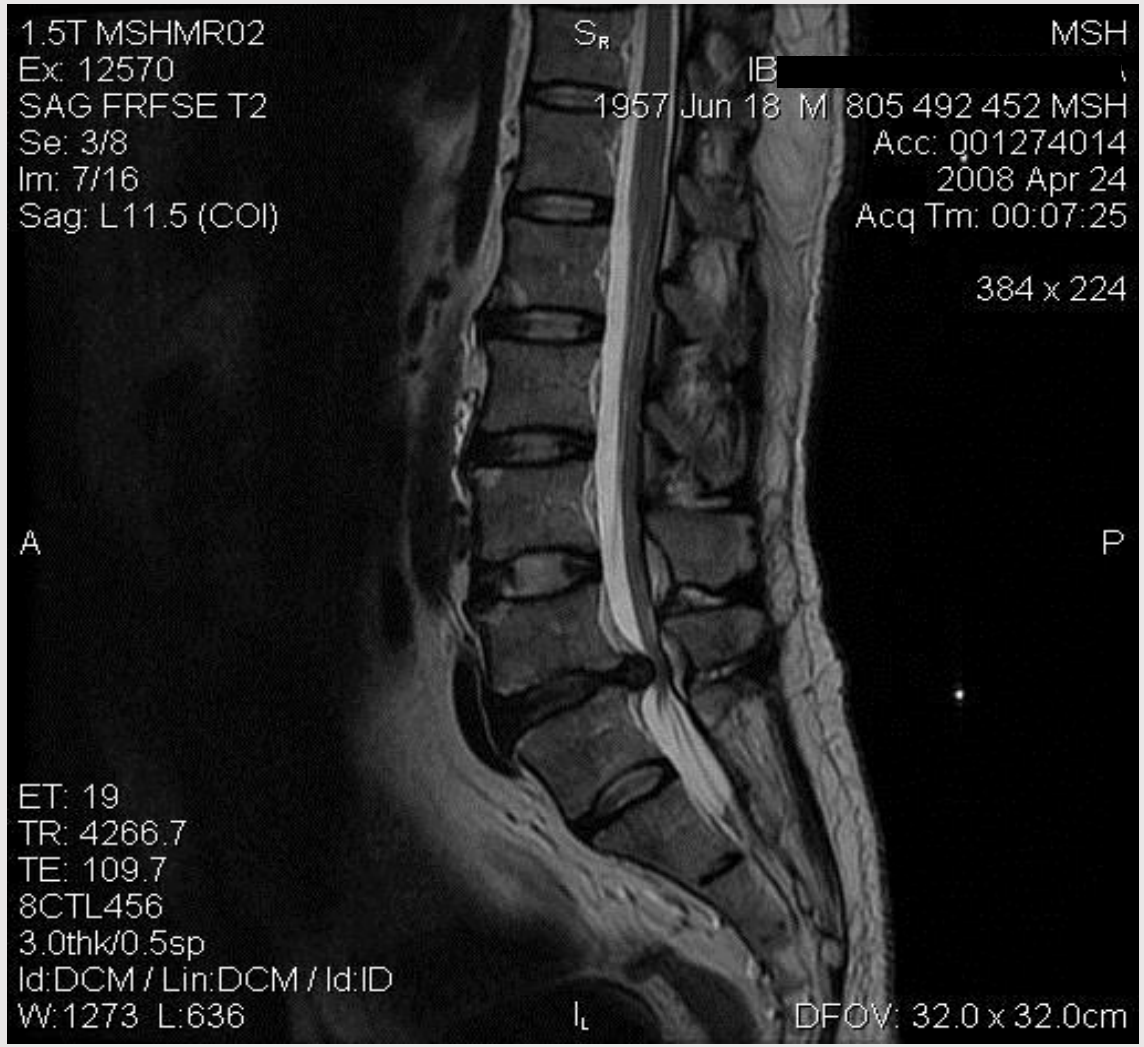


Neural Tension - Slump


VALDOSTA STATE
ATHLETIC TRAINING

Disk	Nerve root	Reflex	Motor examination	Sensory loss signature zone
L3-L4	L4	Patellar	 Ankle dorsiflexion	Medial malleolus 
L4-L5	L5	None	 Great toe dorsiflexion	Dorsal third metatar-sophalangeal joint 
L5-S1	S1	Achilles	 Ankle plantar flexion	Lateral heel 

Imaging

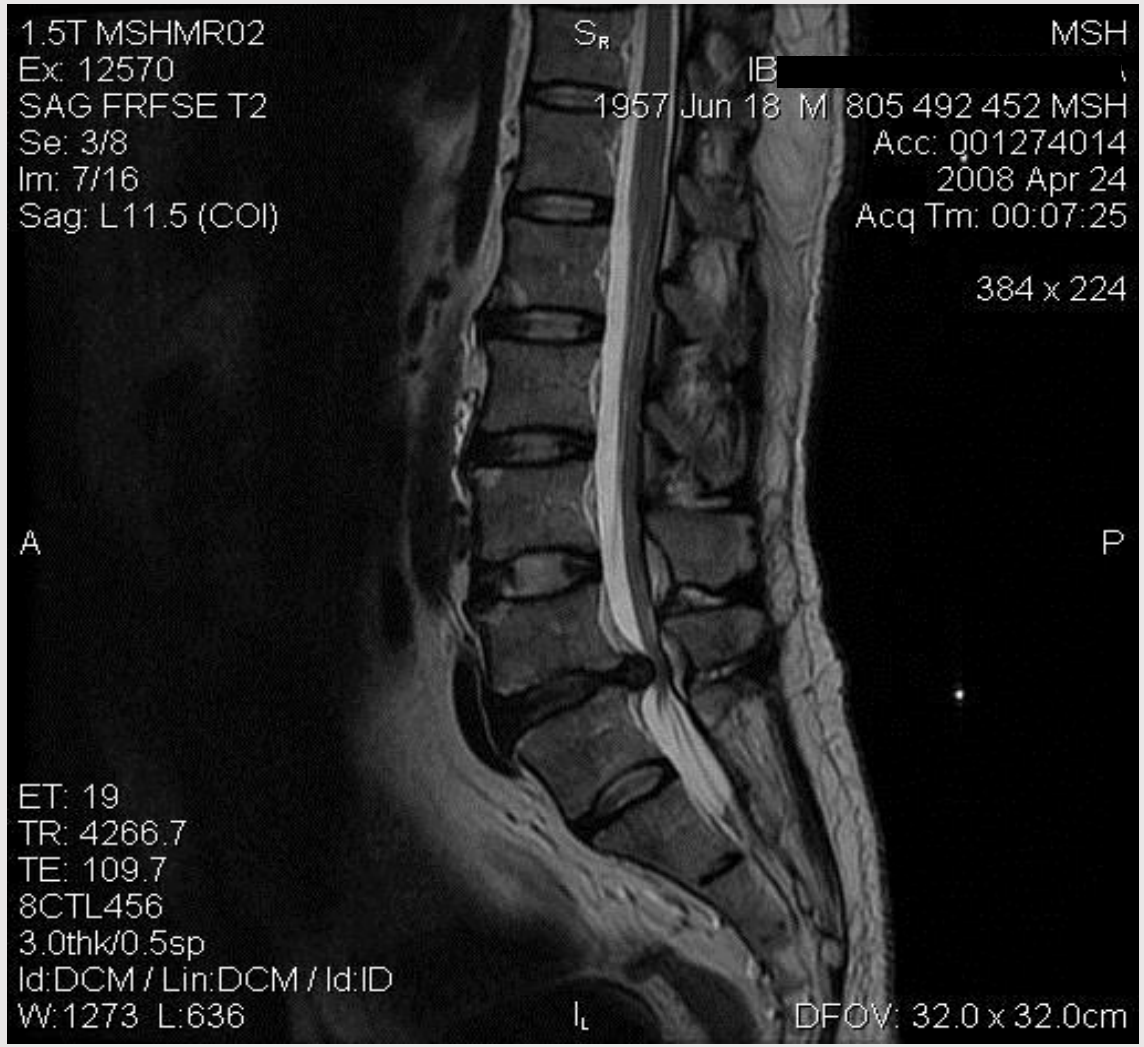


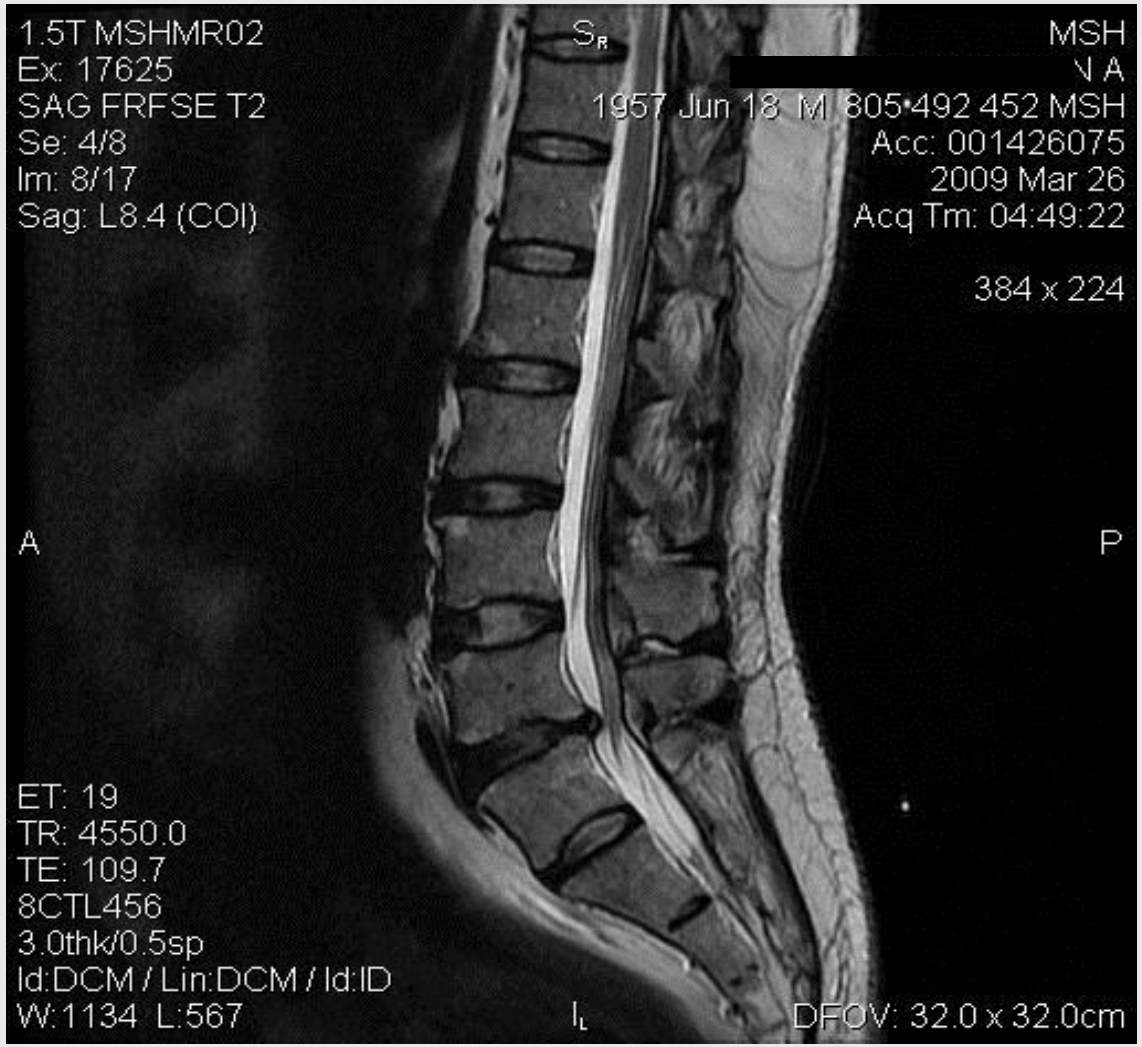
- Not usually needed- lumbar radiculopathy is a clinical diagnosis
- Clinical evidence of serious disease
- Progressive neurological deficits
- If candidate for surgery or epidural injection
- 20% asymptomatic individuals

  < age 60 have LDH
- 36% asymptomatic individuals

  > age 60 have LDH

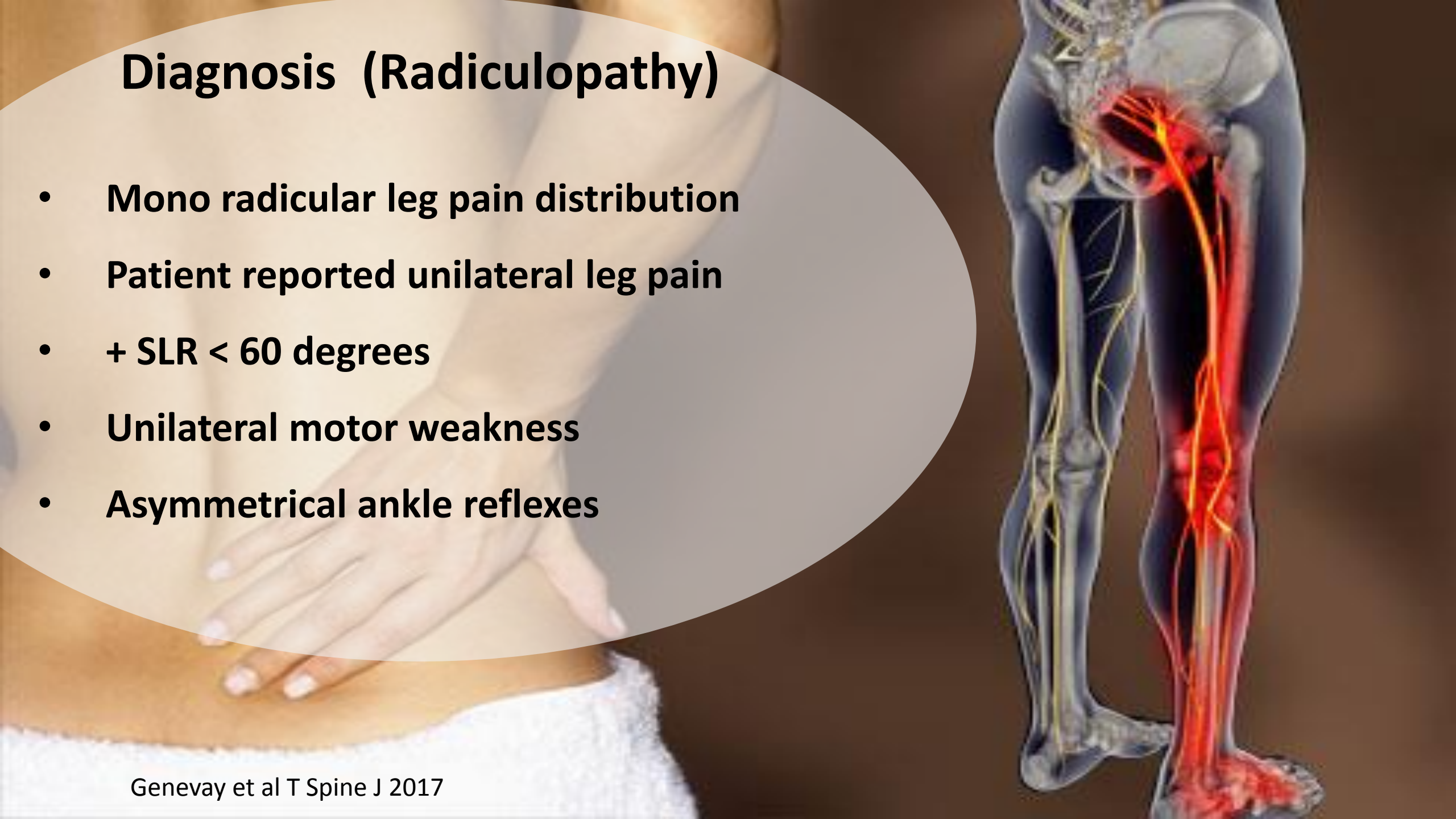
Imaging


1.5T MSHMR02
Ex: 12570
SAG FRFSE T2
Se: 3/8
Im: 7/16
Sag: L11.5 (COI)
MSH
1957 Jun 18 M 805 492 452 MSH
Acc: Q01274014
2008 Apr 24
Acq Tm: 00:07:25
384 x 224
A
P
ET: 19
TR: 4266.7
TE: 109.7
8CTL456
3.0thk/0.5sp
Id:DCM / Lin:DCM / Id:ID
W:1273 L:636
DFOV: 32.0 x 32.0cm


1.5T MSHMR02
Ex: 17625
SAG FRFSE T2
Se: 4/8
Im: 8/17
Sag: L8.4 (COI)
MSH
1957 Jun 18 M 805 492 452 MSH
Acc: 001426075
2009 Mar 26
Acq Tm: 04:49:22
384 x 224
A
P
ET: 19
TR: 4550.0
TE: 109.7
8CTL456
3.0thk/0.5sp
Id:DCM / Lin:DCM / Id:ID
W:1134 L:567
DFOV: 32.0 x 32.0cm

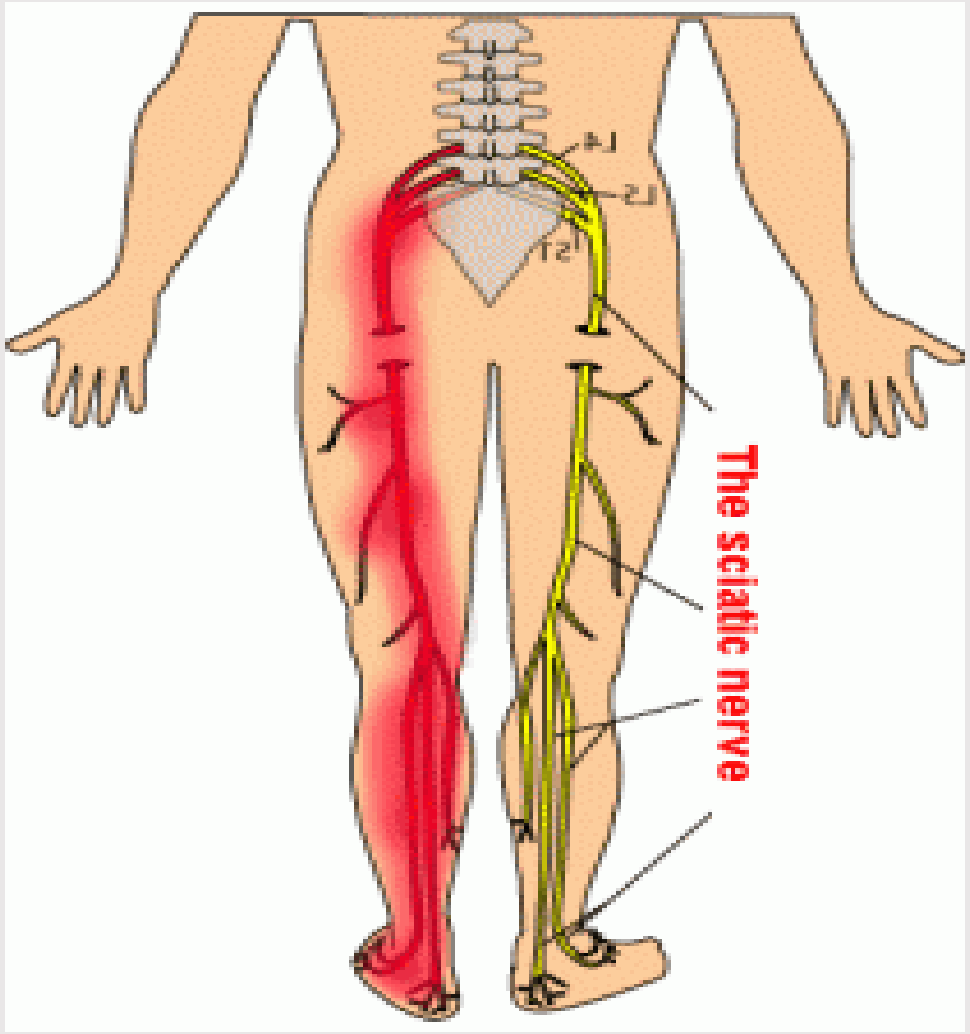
Diagnosis (Radiculopathy)

- Mono radicular leg pain distribution
- Patient reported unilateral leg pain
- + SLR < 60 degrees
- Unilateral motor weakness
- Asymmetrical ankle reflexes



Genevay et al T Spine J 2017

Differential Diagnosis



- Cancer (lung/prostate/ breast)
- Lumbar spinal stenosis-neuroischemia
- Spondylolisthesis
- Far lateral disc herniation
- Greater trochanteric syndrome
- Piriformis syndrome- 6% of sciatica
- Hip Disease -47% pain below knee
- Vascular claudication- ABI < 0.9
- Somatic leg pain- myofascial/facet/ ligaments- most common cause of leg pain

Valat et al Best Pract Res Clin Rheumatol 2010, NICE Guideline LBP & Sciatica 2016, Hicks & Bhimji 2017

Neurogenic Claudication (LSS) vs. Lumbar Radiculopathy (LHD)

	Neurogenic Claudication	Lumbar Disc Herniation
Demographics	> 65	40s
Lumbar flexion	Relief	Worse
Sitting	Relief	Worse
Level	L4-5	L5-S1
SLR	Negative	Positive

Suri 2012, Katz 2008, Rainville 2013

Sciatica

Management

Limited High Quality Evidence

NICE LBP and Sciatica Guidelines 2016

Sciatica

Recommended

Self-management (education)
Advice to stay active
Avoid bed rest (& sitting)

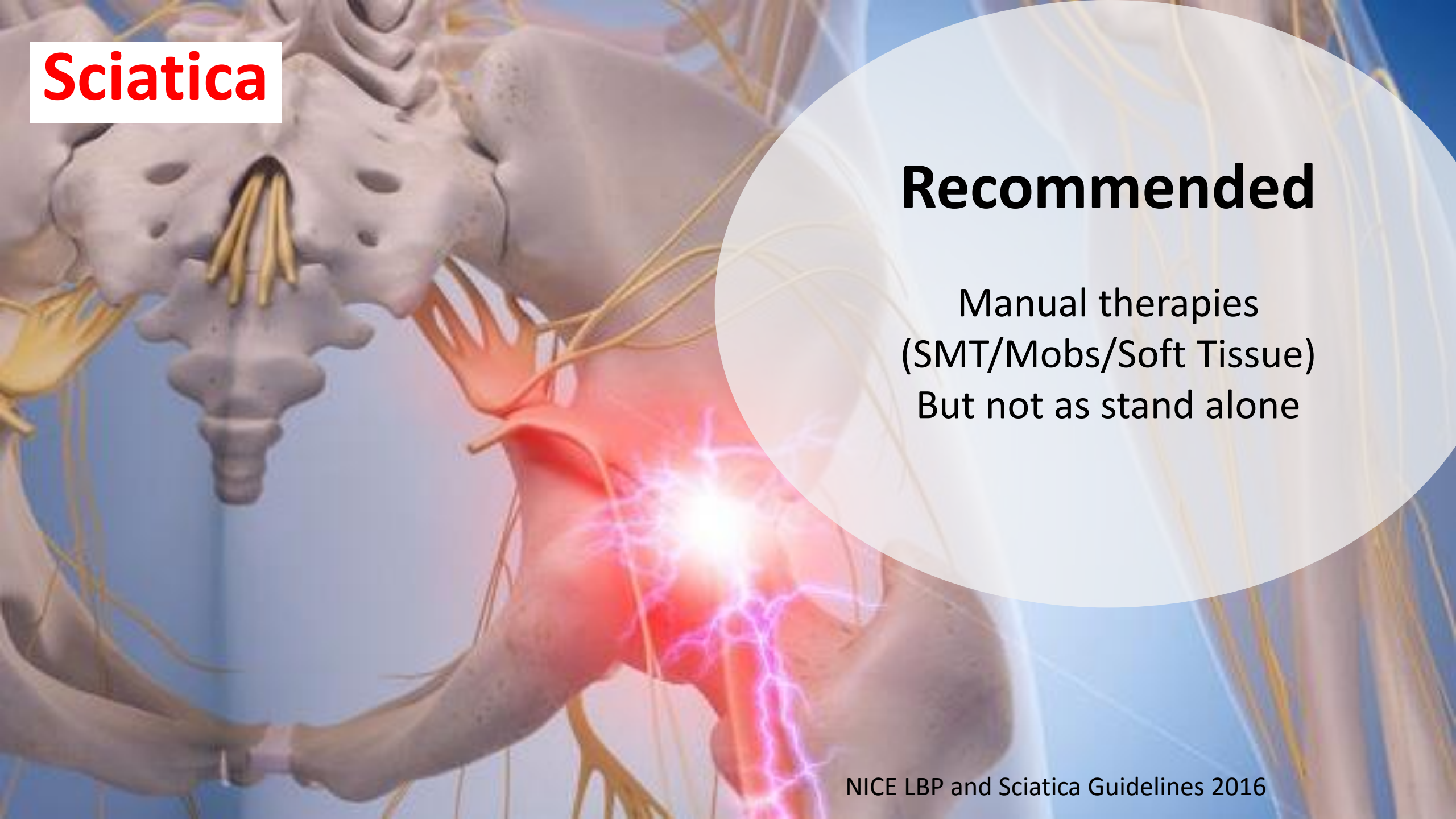
NICE LBP and Sciatica Guidelines 2016

Sciatica

Recommended

- Exercise group/individual
- Type of exercise? (Individualized)
- Yoga

NICE LBP and Sciatica Guidelines 2016



Sciatica

Recommended

Manual therapies
(SMT/Mobs/Soft Tissue)
But not as stand alone

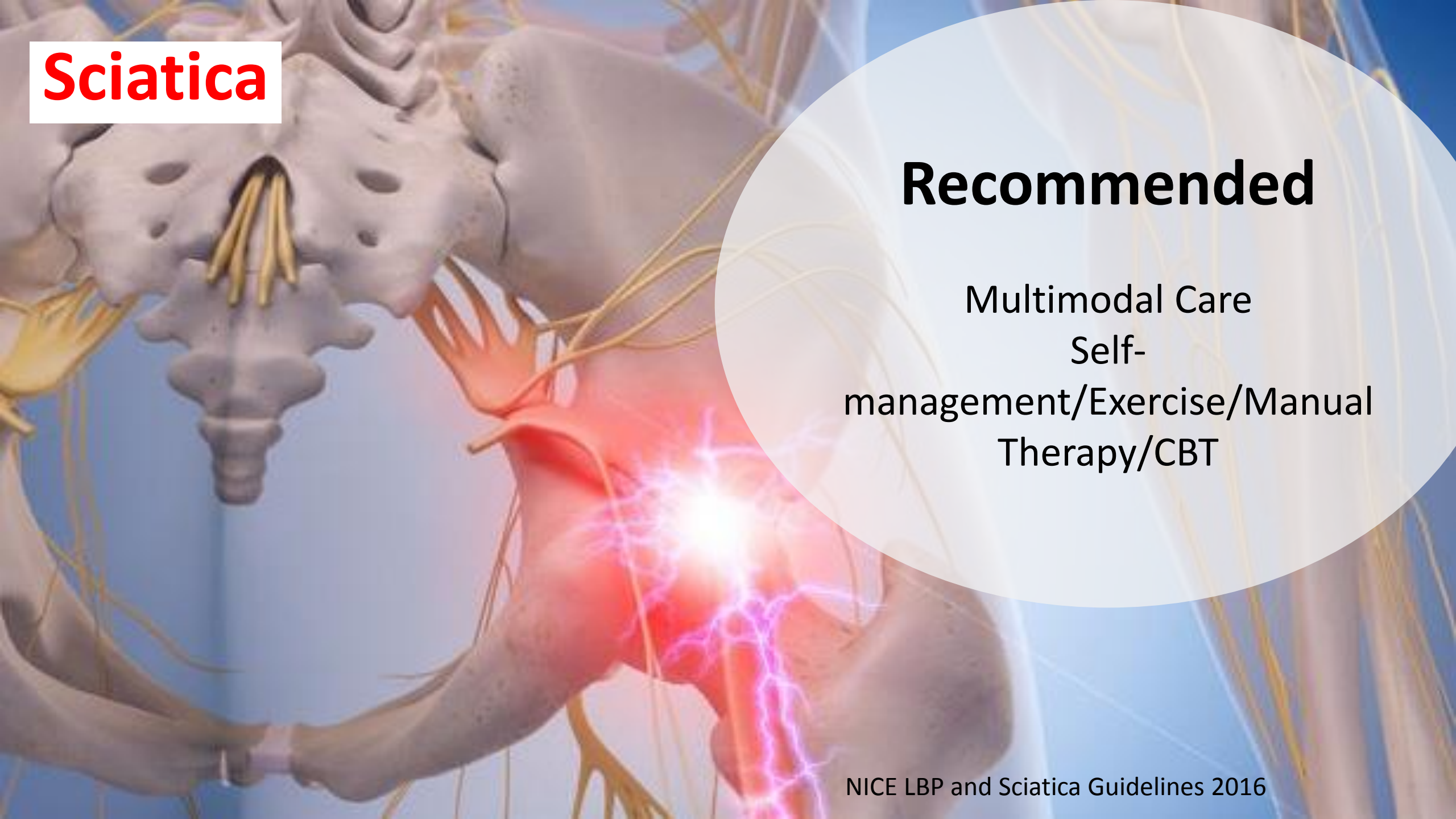
NICE LBP and Sciatica Guidelines 2016

Sciatica

Recommended

Psychological Treatment
CBT
In combination with physical treatment

NICE LBP and Sciatica Guidelines 2016



Sciatica

Recommended

Multimodal Care
Self-management/Exercise/Manual Therapy/CBT

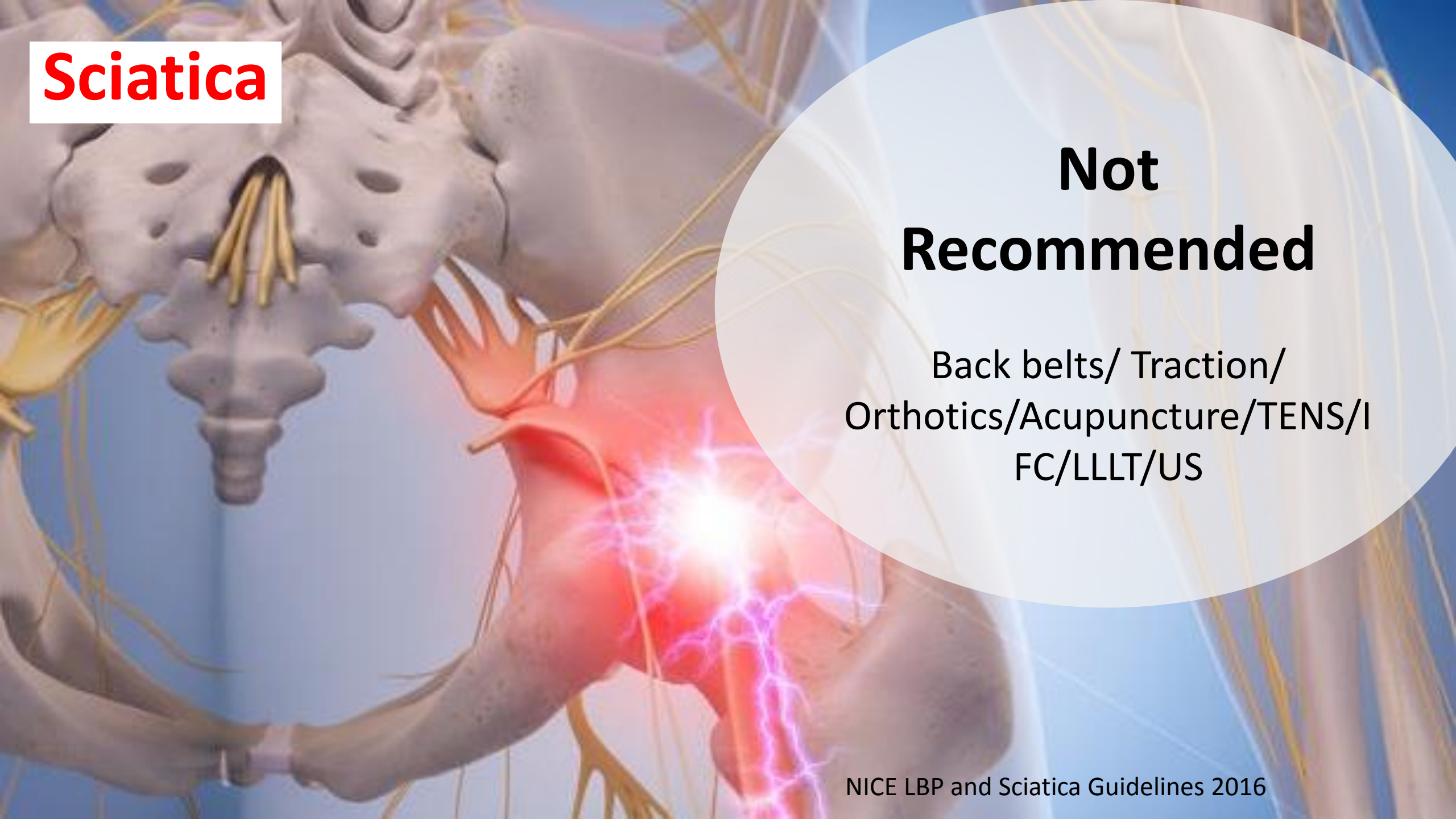
NICE LBP and Sciatica Guidelines 2016

Recommended

Pharmacological

- Amitriptyline, duloxetine, gabapentin or pregabalin (Nice 2013)
- Pregabalin no better than placebo (Mathieson et al NEJM 2017)
- NSAIDS no better than placebo for pain (Rassussen-Barr et al Spine 2017)

NICE Neuropathic Guidelines 2013, Mathieson eta NEJM 2017 , Rassussen-Barr et al Cochrane spine 2017



Sciatica

Not Recommended

Back belts/ Traction/ Orthotics/Acupuncture/TENS/IFC/LLLT/US

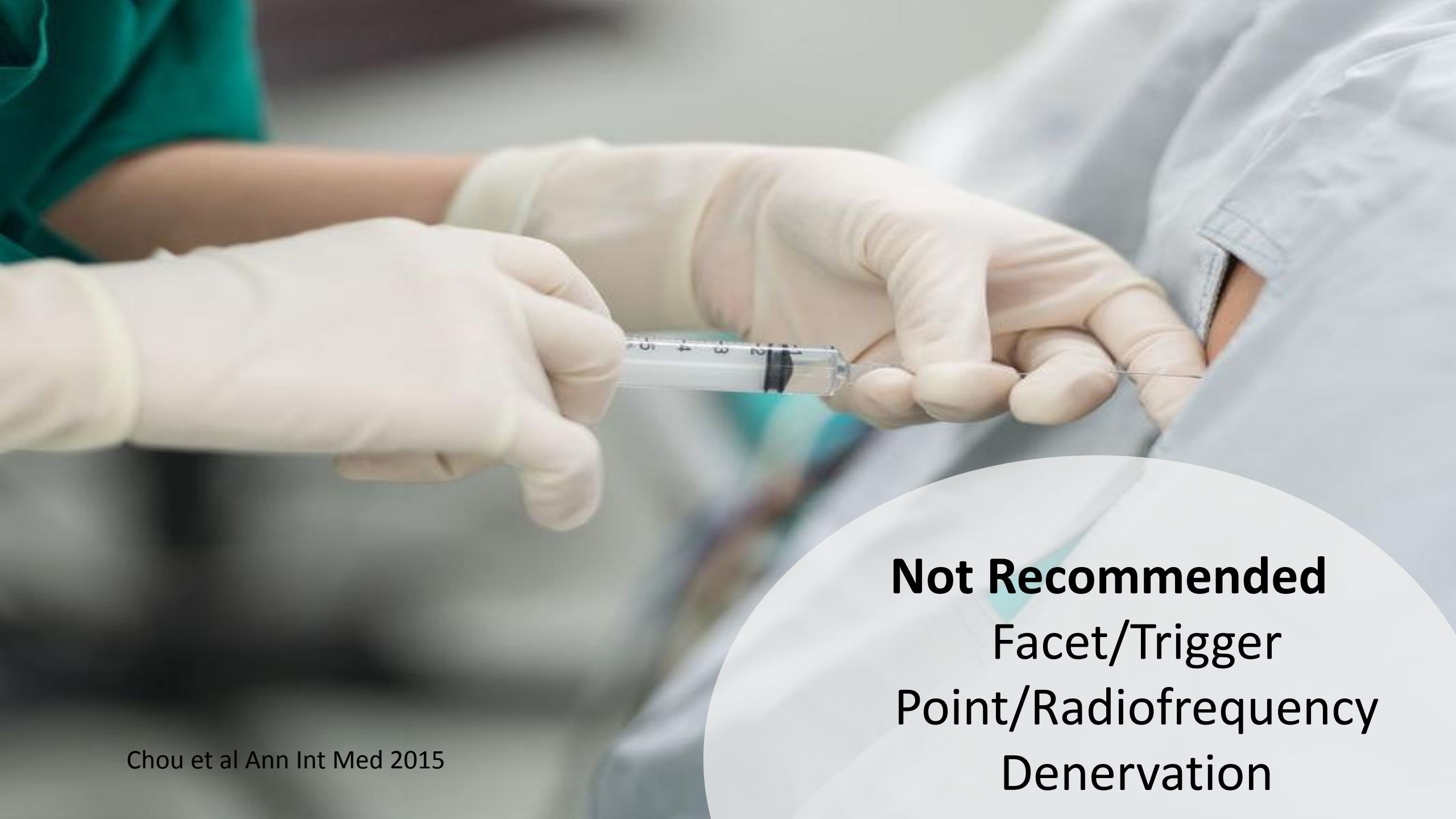
NICE LBP and Sciatica Guidelines 2016

Recommended

Epidural Injections

Short-term benefit

Chou et al Ann Int Med 2015



Not Recommended

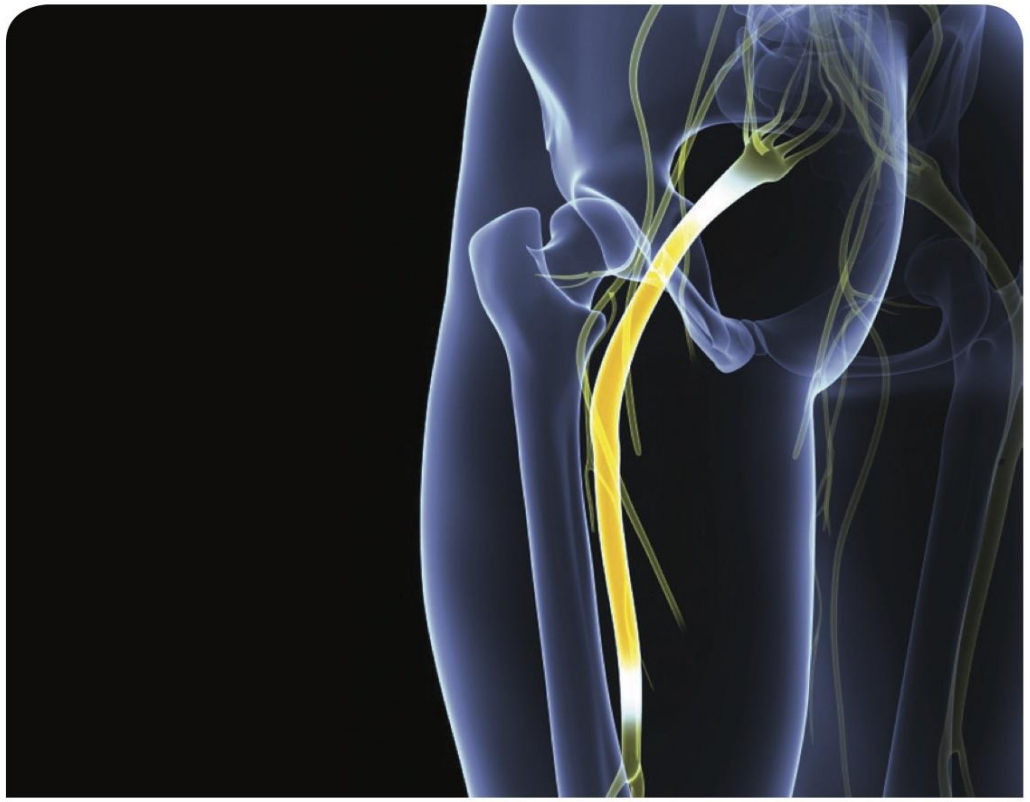
Facet/Trigger Point/Radiofrequency Denervation

Chou et al Ann Int Med 2015

Recommended Surgery

For leg dominant symptoms

NICE LBP and Sciatica Guidelines 2016



spinemobility

Boot Camp Program

SCIATICA

Dr. Carlo Ammendolia

1st Edition

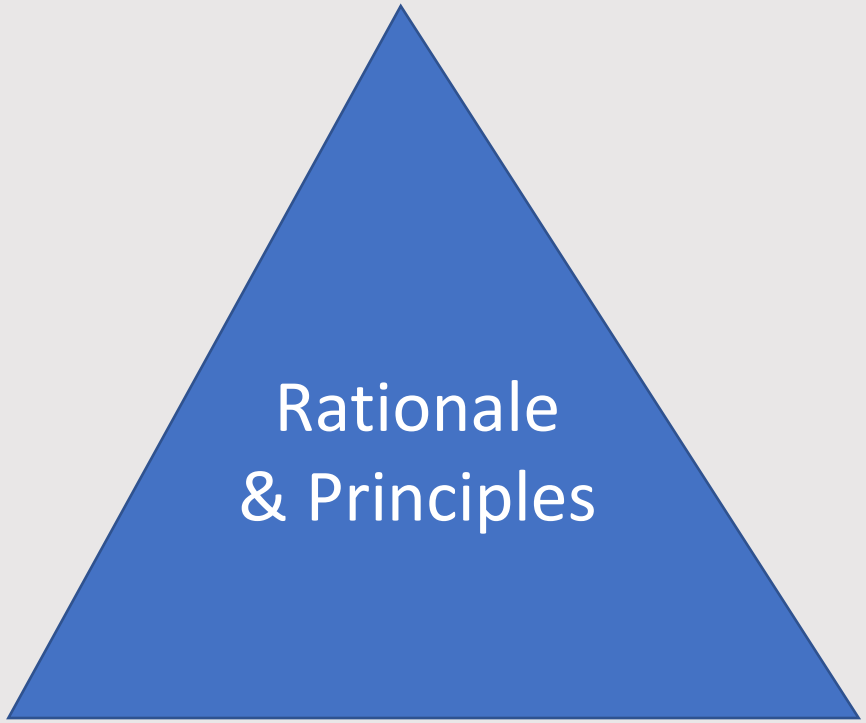
Boot Camp Program

SCIATICA

Practical Multimodal Evidence-Based Treatment Tailored for Chiropractic Practice

Non Operative Management of Sciatica

Standardized

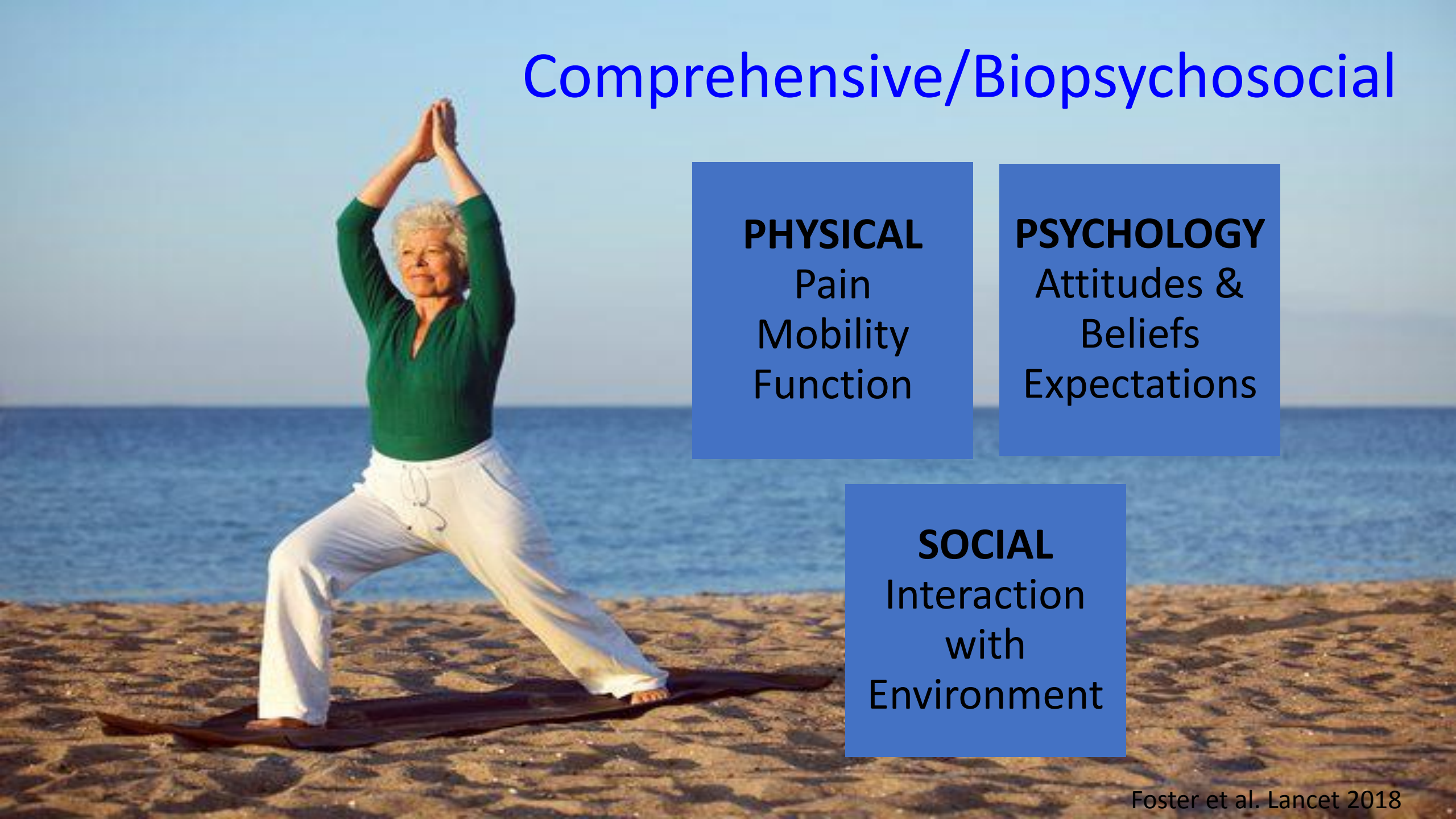


Comprehensive

Evidence-Based

Standardized

Comprehensive/Biopsychosocial



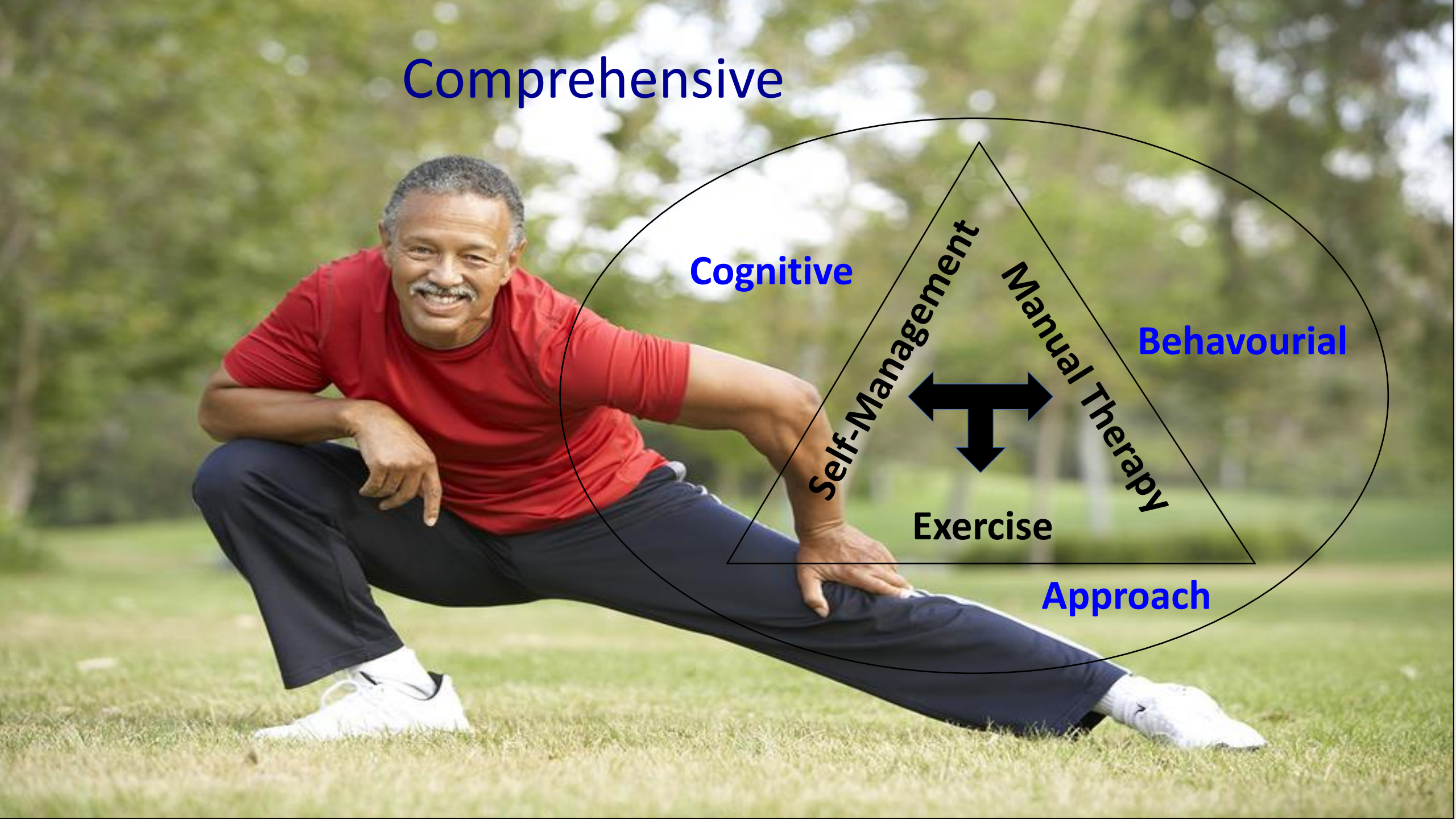
PHYSICAL
Pain
Mobility
Function

PSYCHOLOGY
Attitudes &
Beliefs
Expectations

SOCIAL
Interaction
with
Environment

Foster et al. Lancet 2018

Comprehensive



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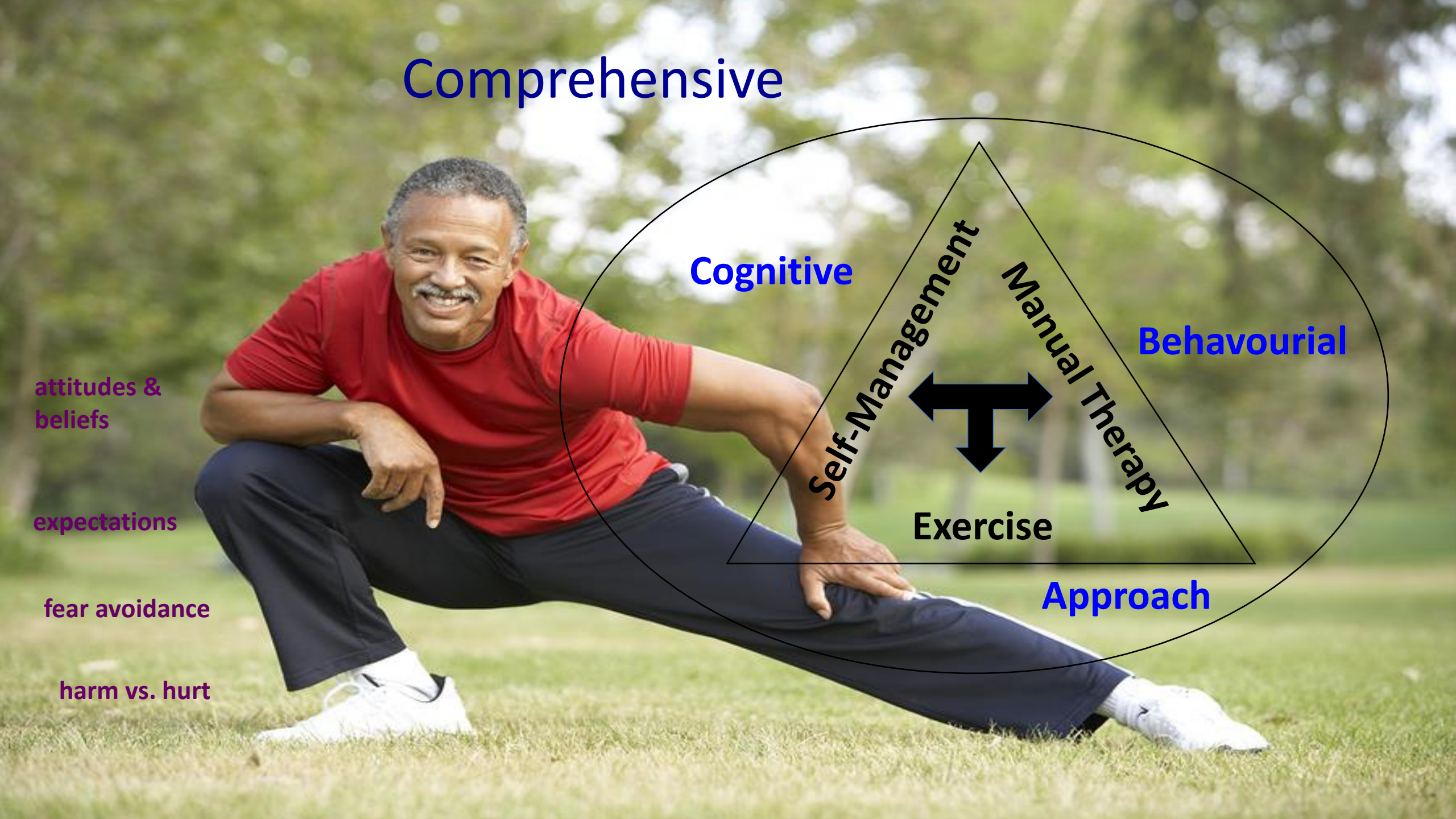


Comprehensive

knowledge

skills

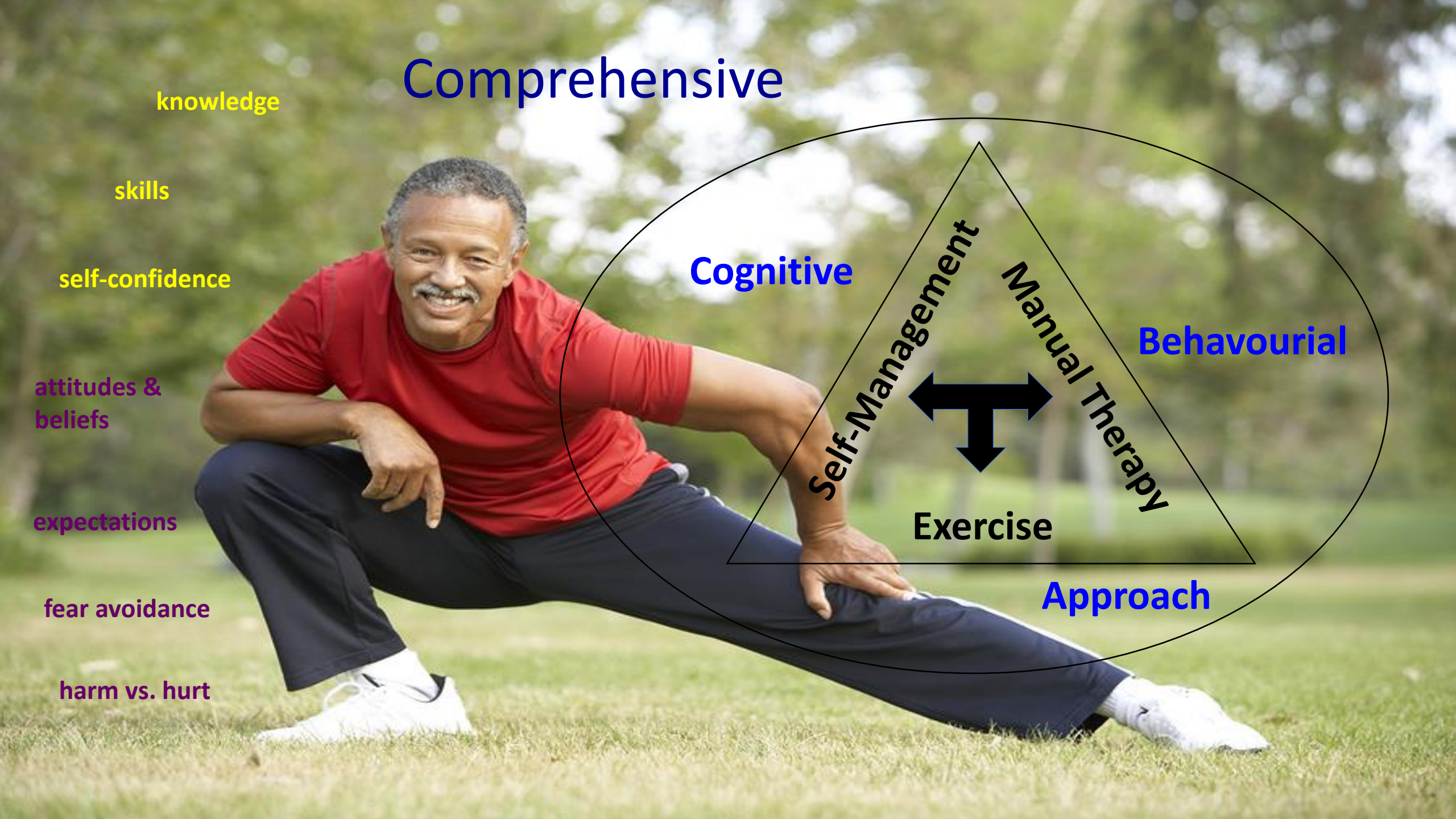
self-confidence

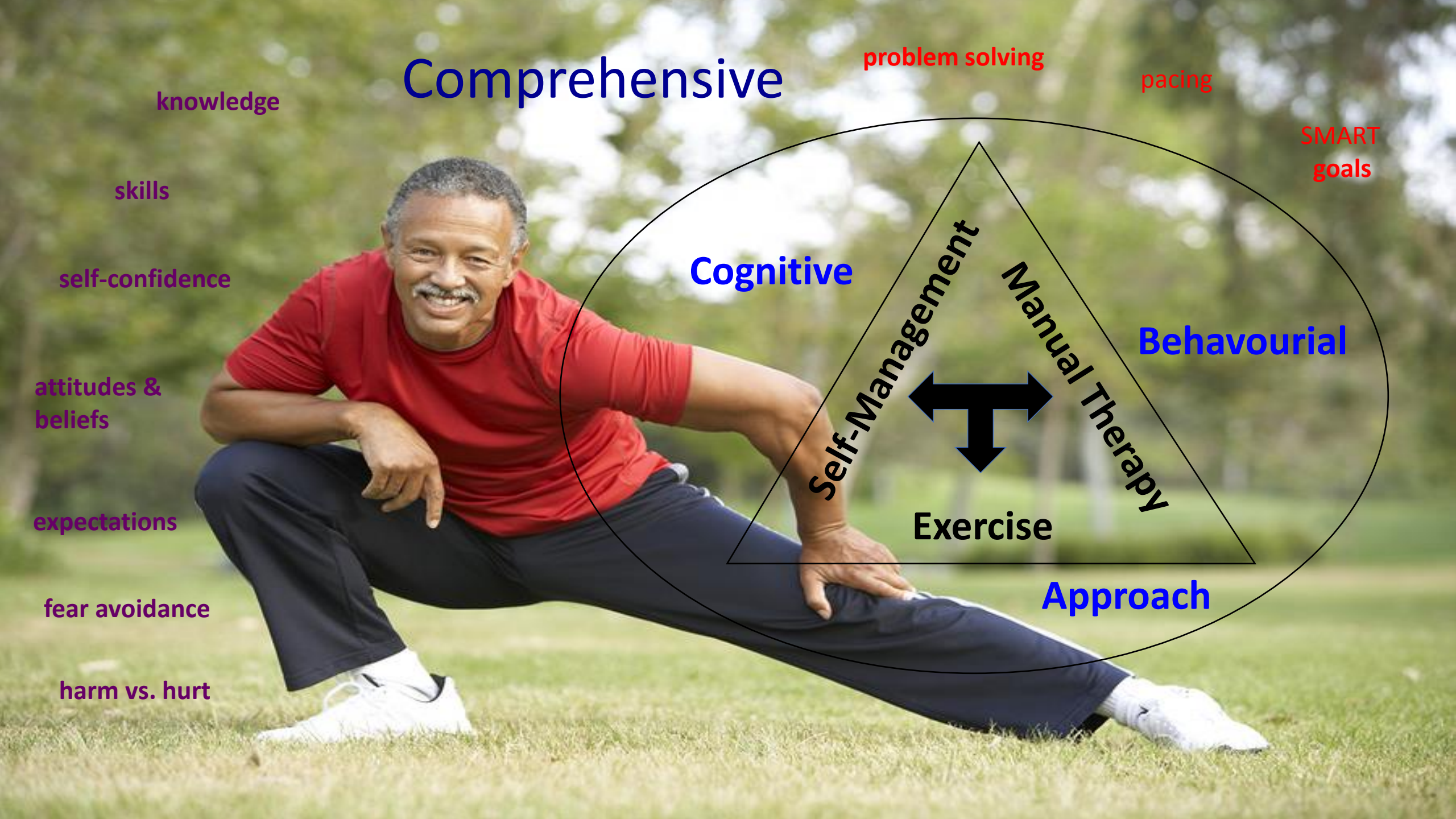
attitudes & beliefs

expectations

fear avoidance

harm vs. hurt




Comprehensive
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harm vs. hurt
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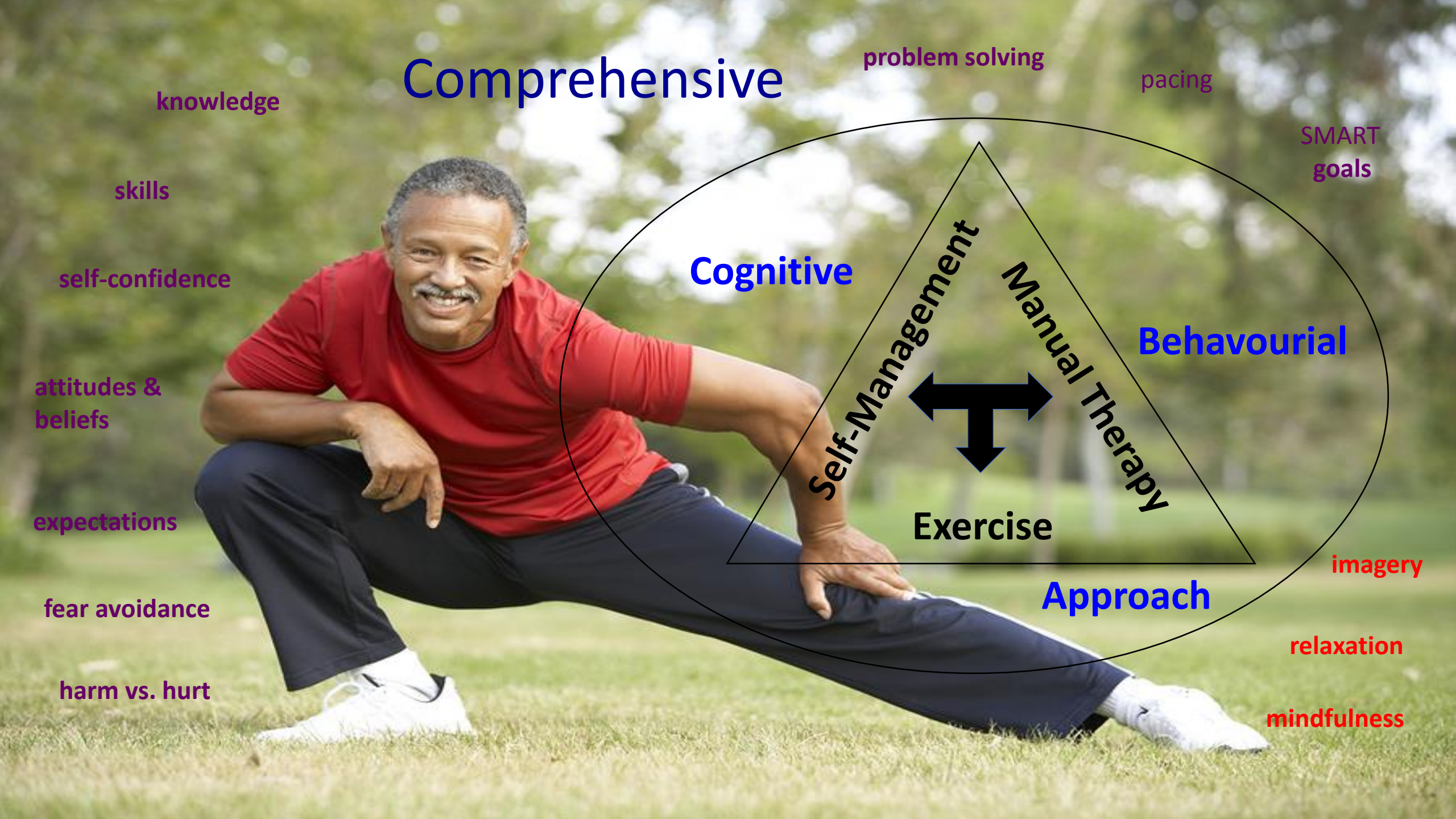
pacing
SMART goals
Cognitive
Behavourial
Approach
Self-Management
Manual Therapy
Exercise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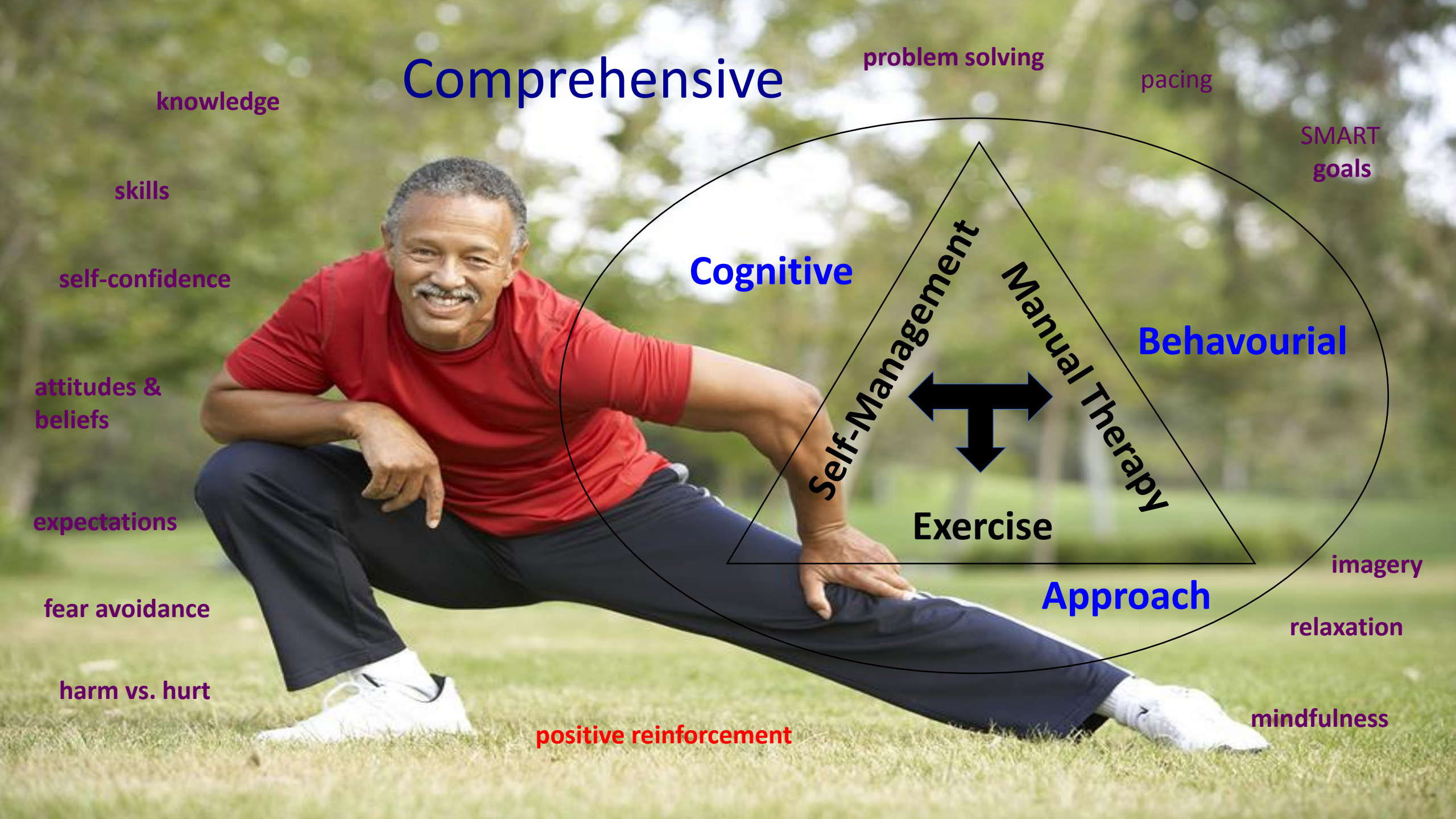
Manual Therapy
Exercise
imagery
relaxation
mindfulness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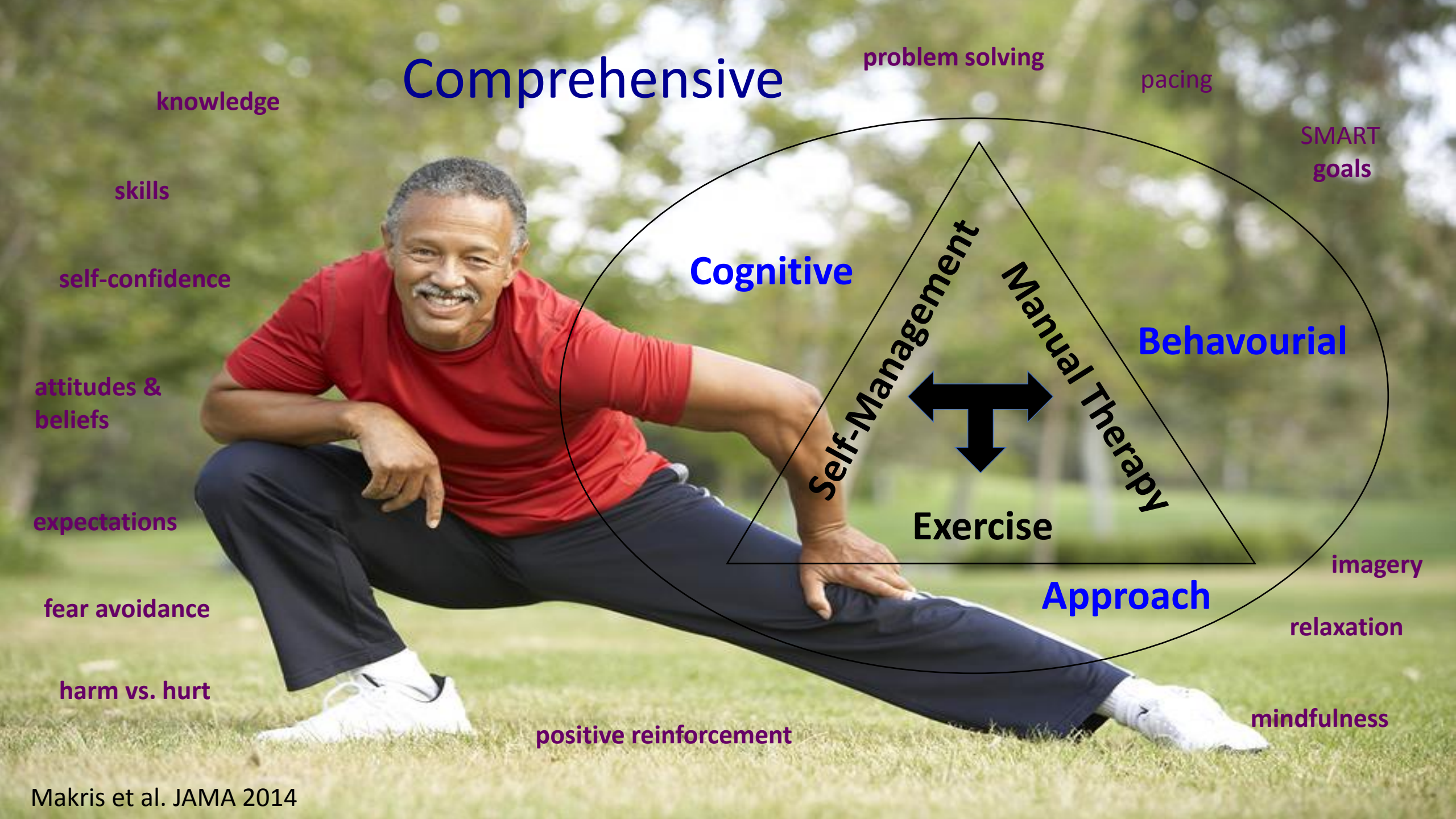
positive reinforcement



Makris et al. JAMA 2014

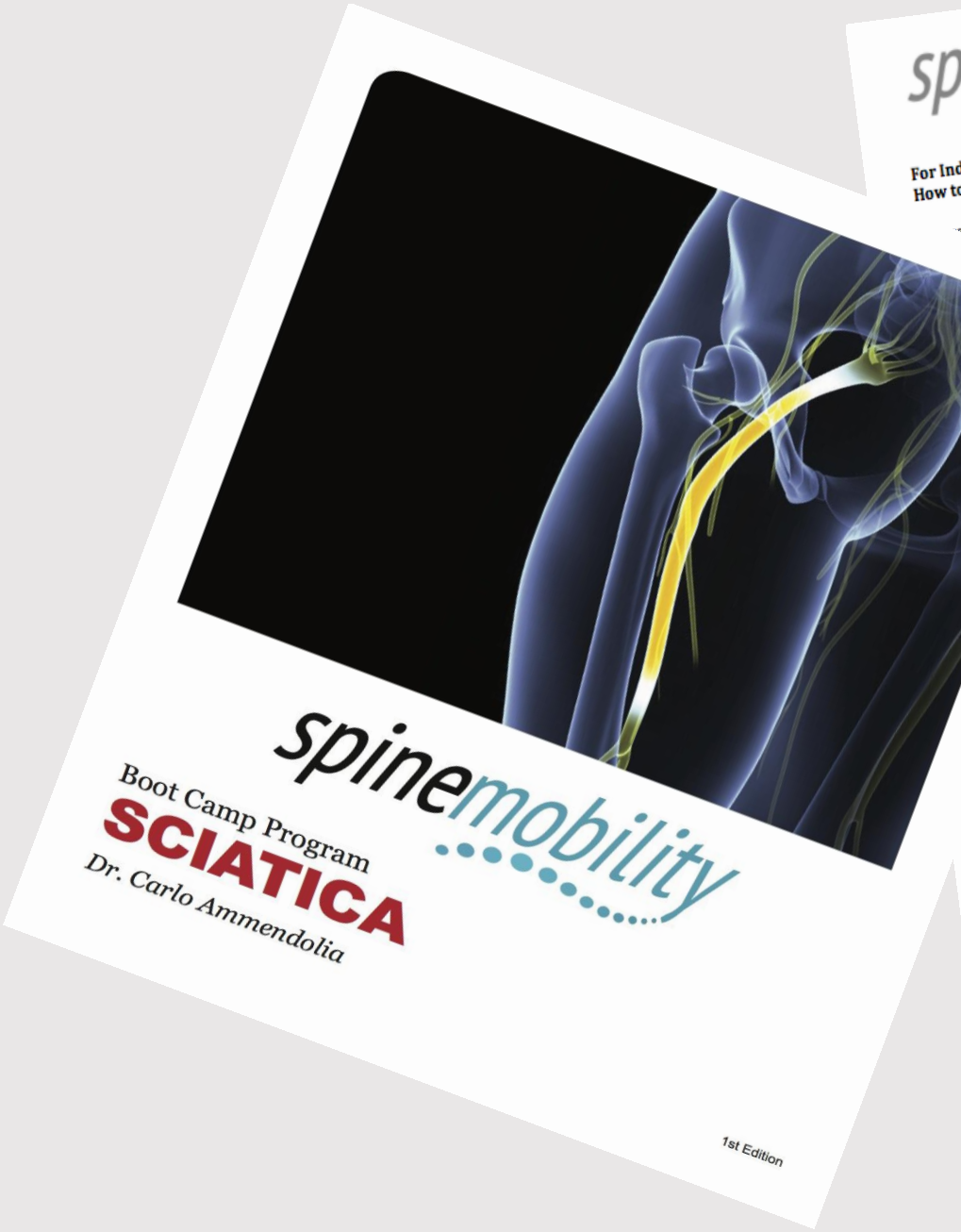
Positive Health

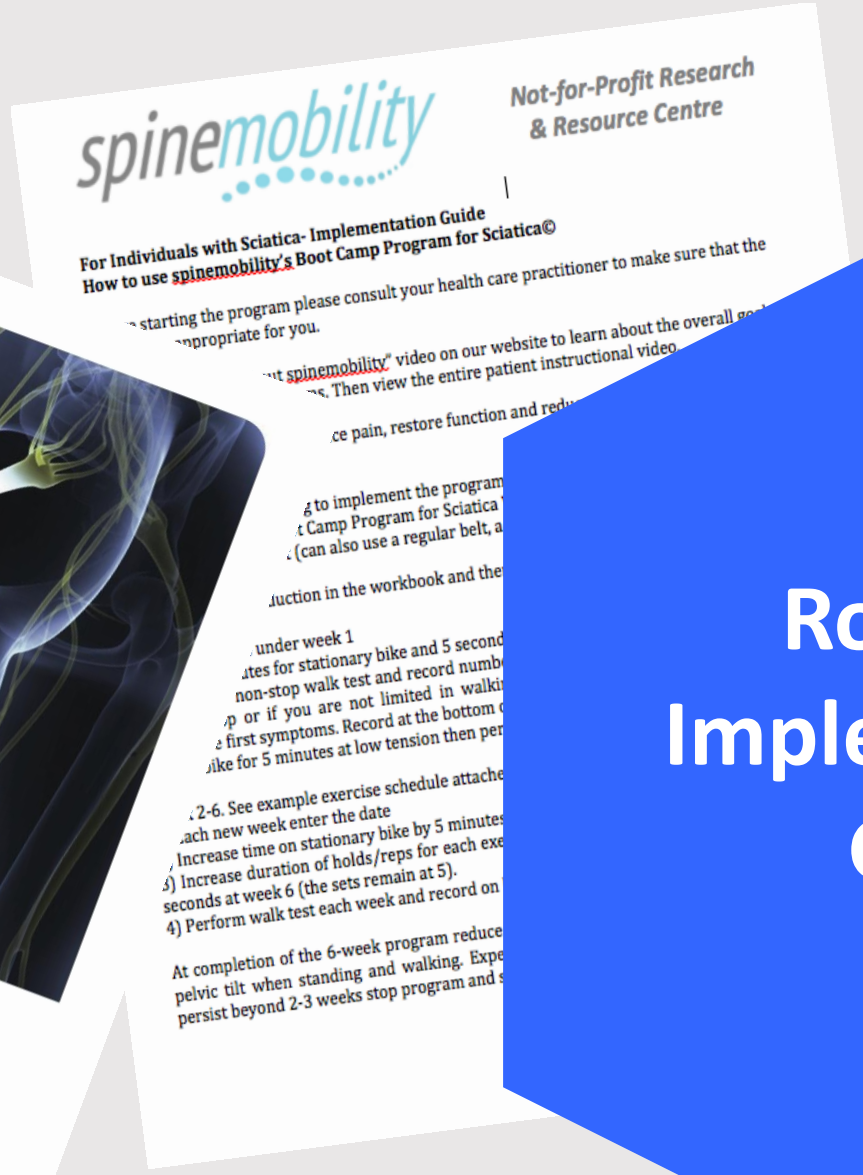
" ability to adapt and to self-manage in the face of social, physical and emotional challenges"

Huber et al BMJ 2011

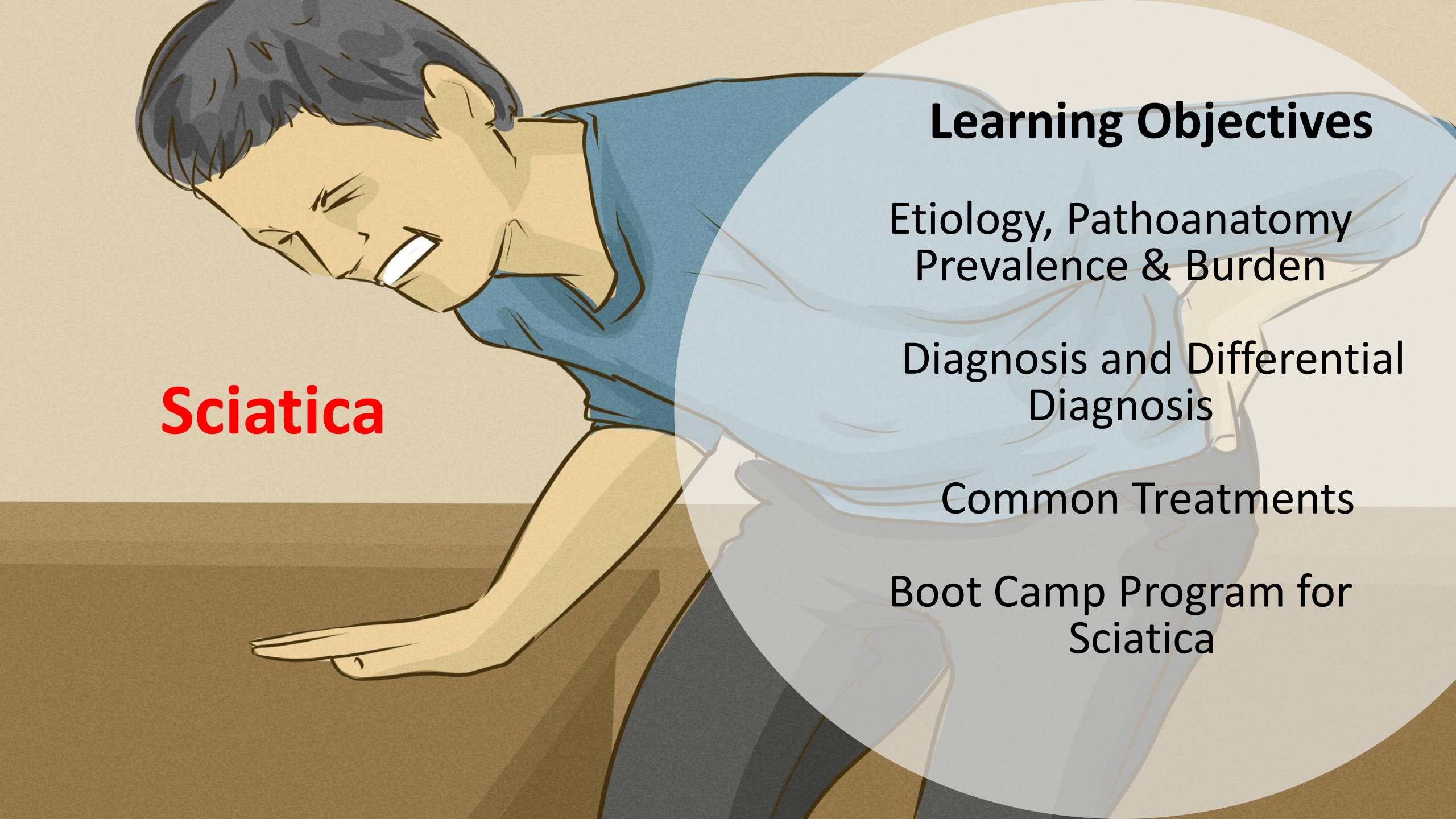
- ✧ **Contextual Factors**
- ✧ **Living well with chronic pain**
- ✧ **Positive expectations**

Buchbinder et al Lancet 2018





Road Map Implementation Guides



Sciatica

Learning Objectives

Etiology, Pathoanatomy
Prevalence & Burden

Diagnosis and Differential Diagnosis

Common Treatments

Boot Camp Program for Sciatica

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