EVIDENCE BASED PHYSIOTHERAPY IN SPINAL CORD INJURY: AN INTERDISCIPLINARY APPROACH.

Mª Montserrat Fernández Pereira

Physiotherapist Spinal Cord Injury CHUAC

Professor Faculty of Physiotherapy – University of A Coruña

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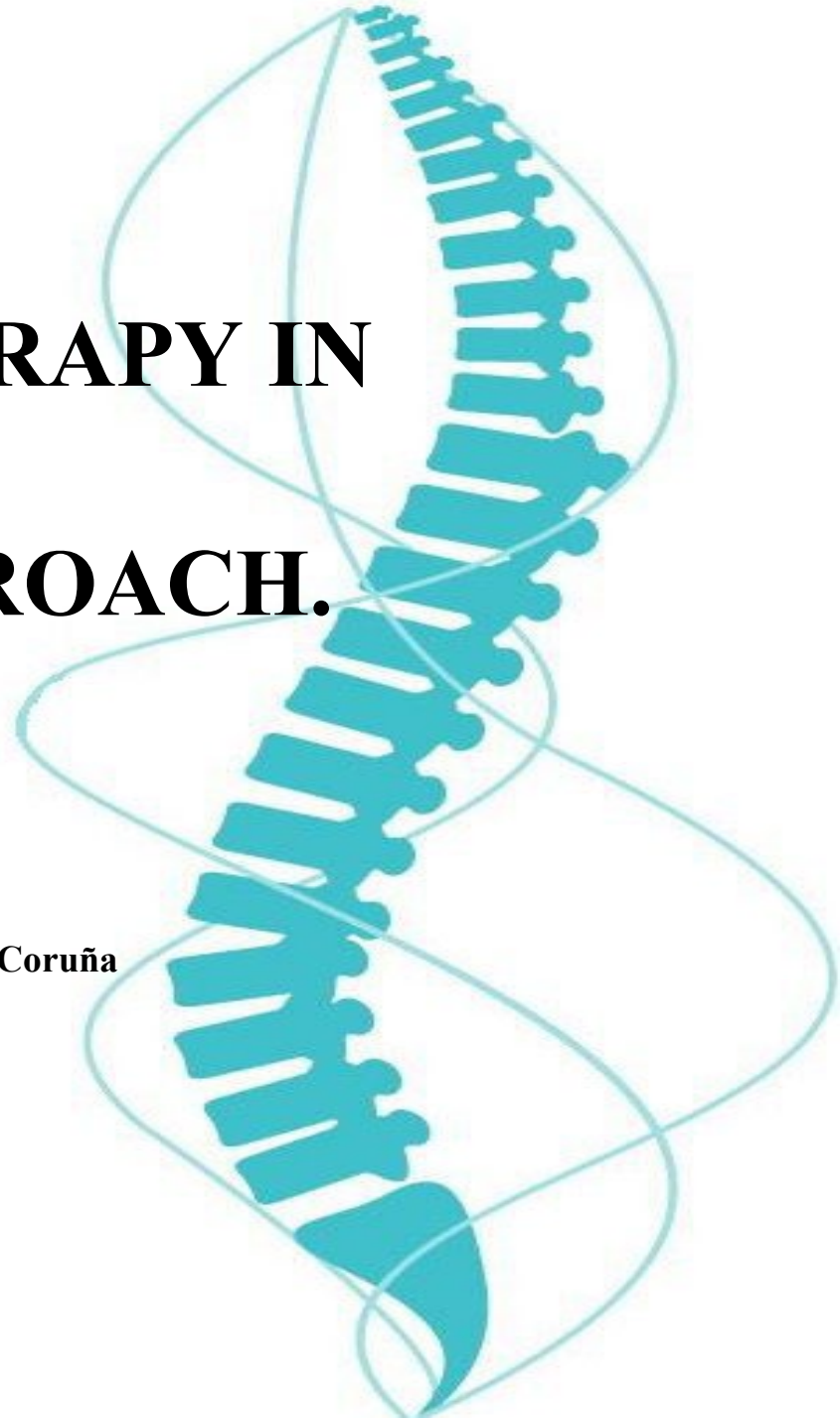
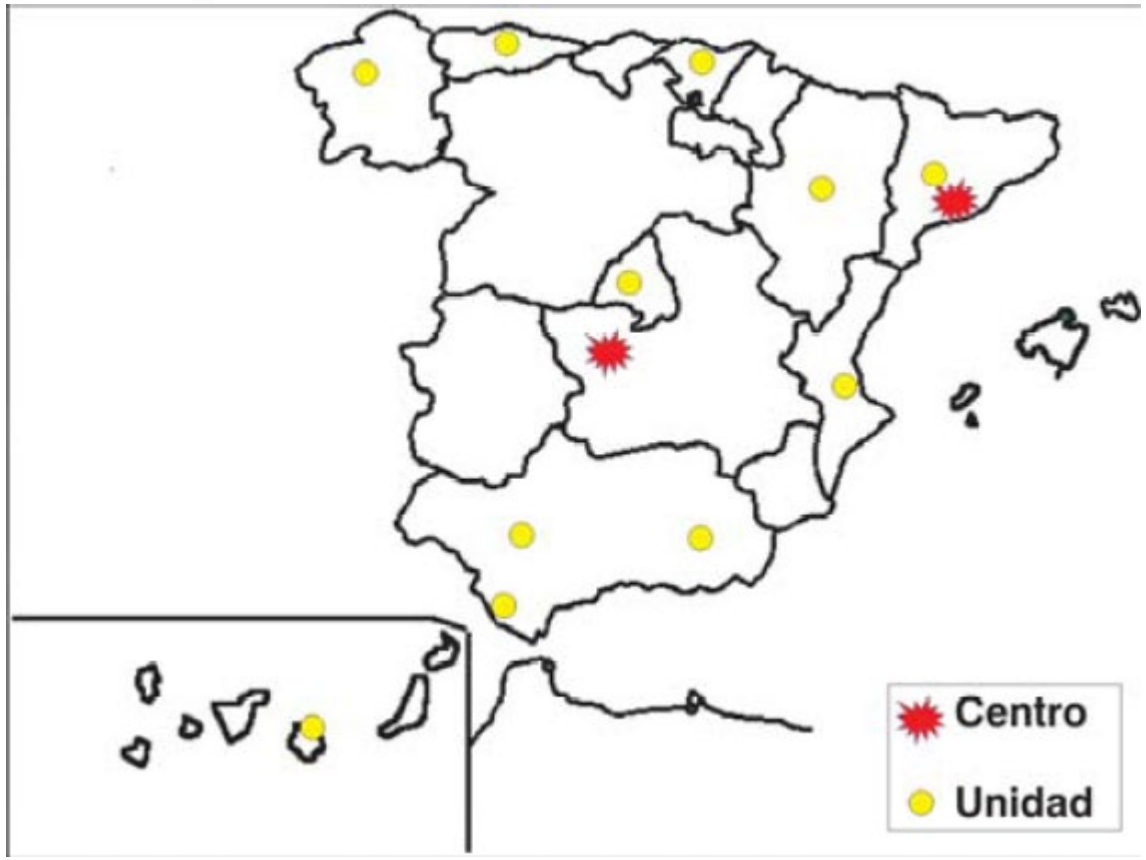



HOSPITAL PÚBLICO

SPINAL CORD INJURY UNITS IN SPAIN:



MULTI-DISCIPLINARY TEAM:

5 doctors

1 speech therapist

6 physiotherapists

1 psychologist

3 occupational therapists

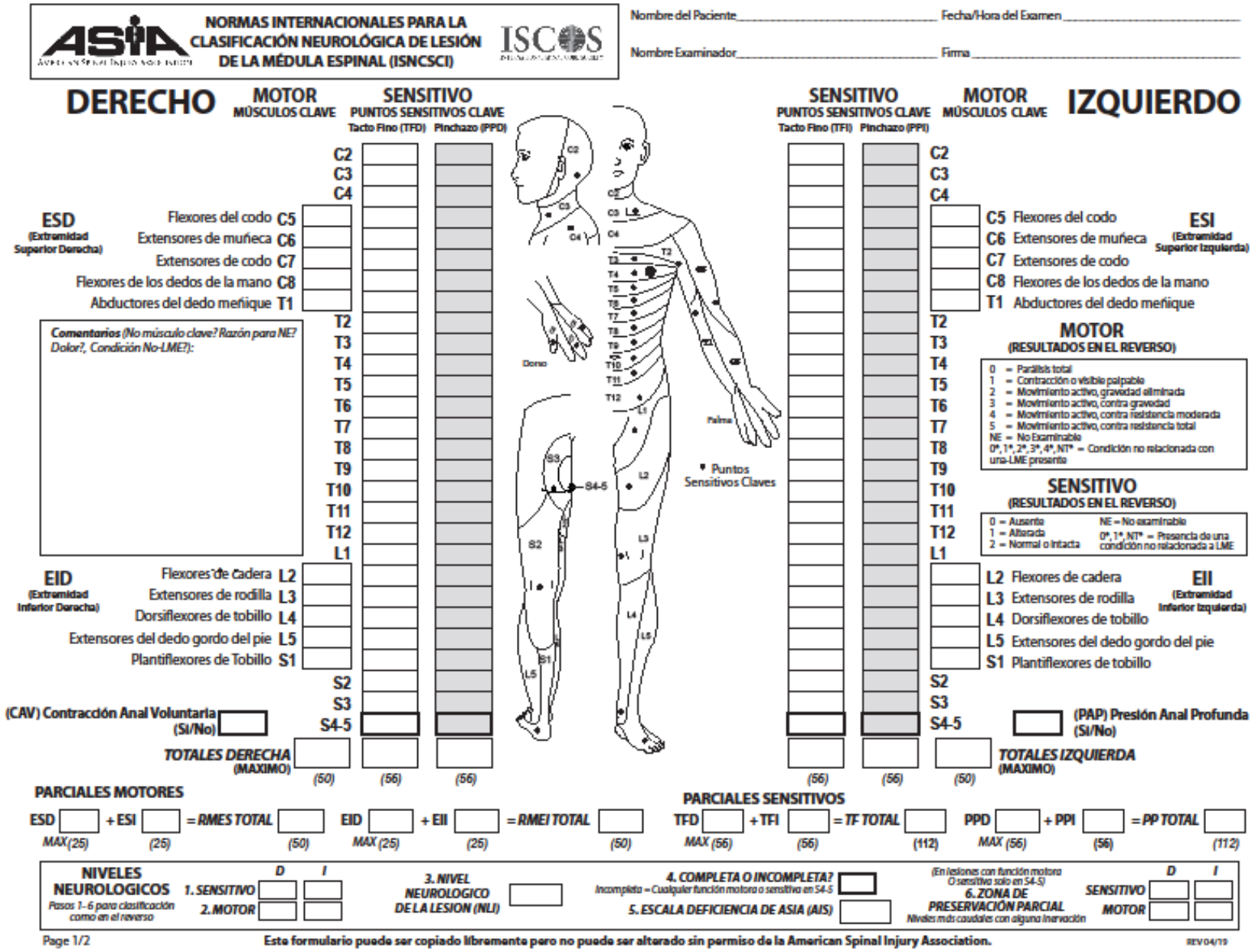
1 social worker

17 nurses

17 hospital porters

17 nursing assistant

A spinal cord injury involves damage to any parts of the spinal cord. It often causes permanent changes in strength, feeling and other body functions below the site of the injury.



International Standards for Neurological Classification of SCI(ISNSCI). ASIA International Scale (AIS scale).

ASIA classification (=Standard neurological classification of spinal cord injury).

- **Sensory assessment: light touch and pinprick sensation.**
- **Motor assessment.**

- **A**:.no motor or sensory function in S4-S5.
- **B**: preservation of sensory function in S4-S5.
- **C**: preservation of sensory function in S4-S5 provided there is also motor function more tan 3 levels below the motor level or just preservation of motor function in S4-S5. In addition, less than grade 3/5 strengh in more than half the key muscles below the neurological level.
- **D**:preservation of sensory function in S4-S5 provided there is also motor function more than 3 levels below the motor level or preservation of motor function in S4-S5. In addition, grade 3/5 or more strength in at least half the key muscles below the neurological level.
- **E**:normal motor and sensory function.

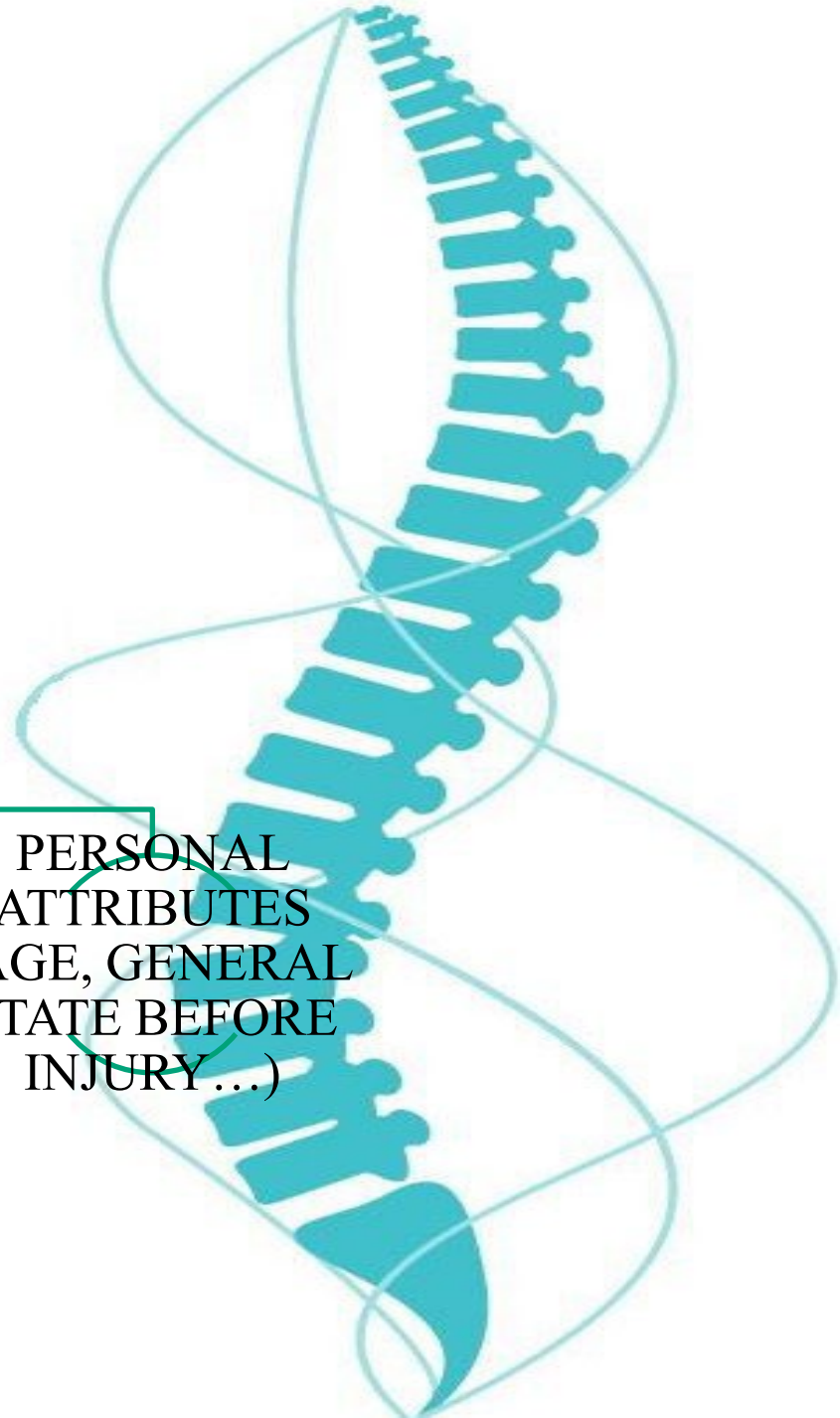
- 0:no muscle contraction
- 1:a flicker of muscle contraction
- 2:full range of motion with gravity eliminated
- 3:full range of motion against gravity
- 4:full range of motion with added resistence.
- 5:normal strengh

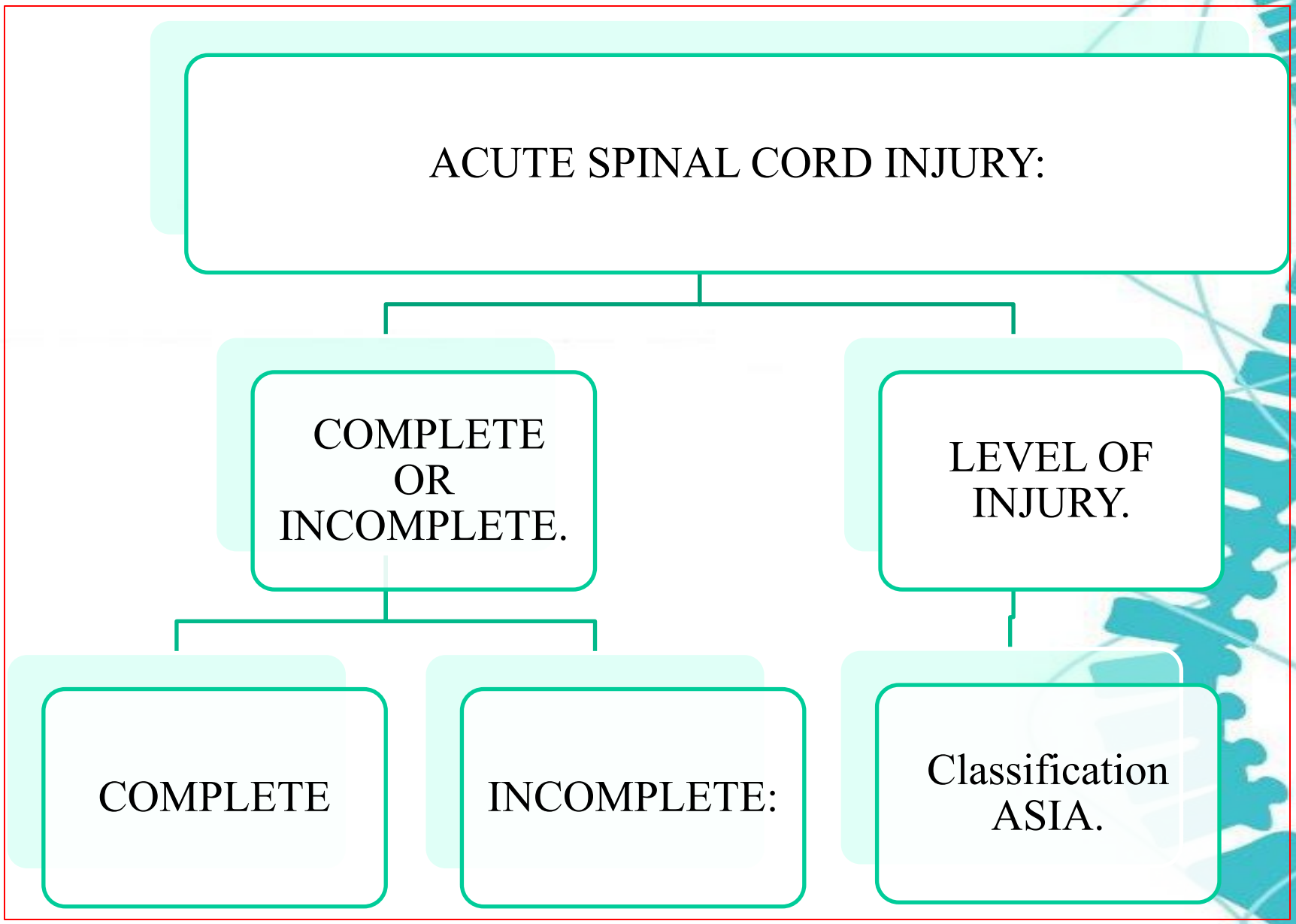
- C5:elbow flexors
- C6:wrist extensors
- C7:elbow extensors
- C8:finger flexors
- D1:little finger abductors
- L2:hip flexors
- L3:knee extensors
- L4:ankle dorsiflexors
- L5:long toe extensors
- S1:ankle plantarflexors

OBJECTIVE:
INDEPENDENCE AND WELL-BEING

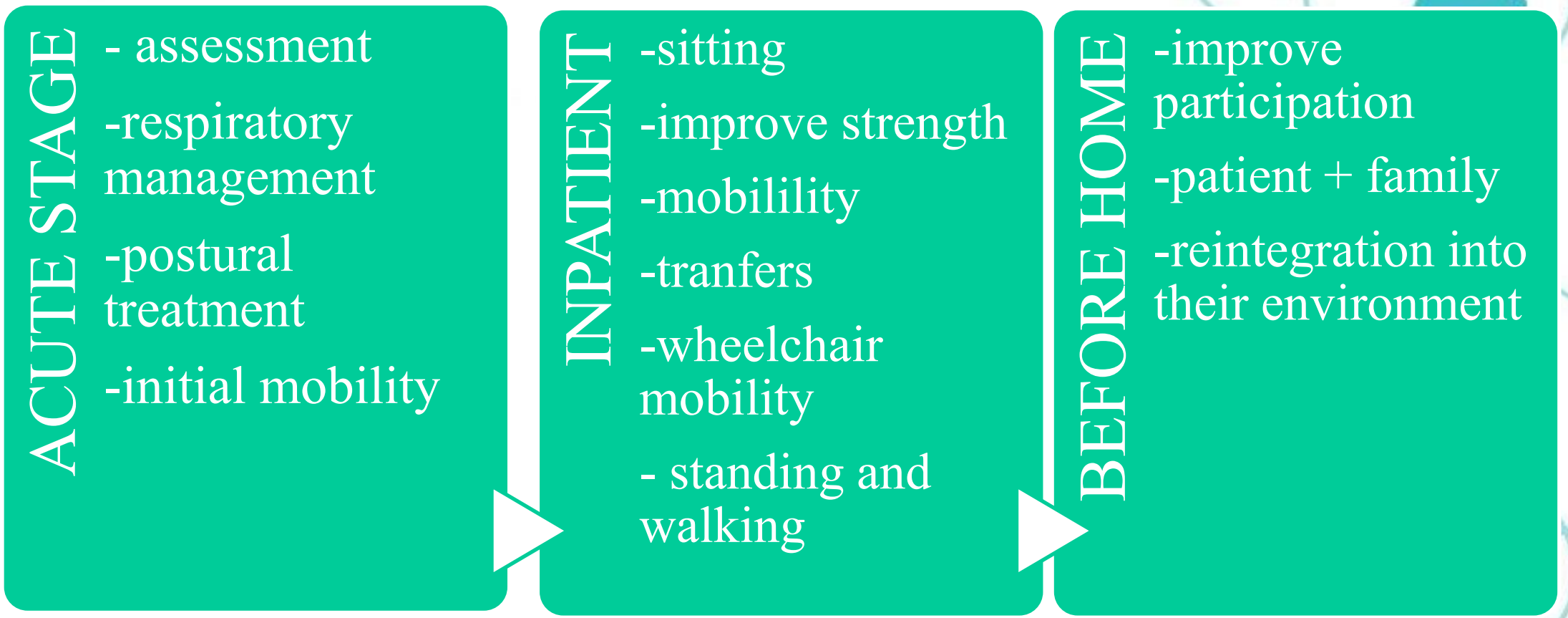
It depends on:

- LEVEL OF INJURY
- NEUROLOGICAL ESTATUS
- POST-INJURY COMPLICATIONS
- PERSONAL ATTRIBUTES (AGE, GENERAL STATE BEFORE INJURY…)

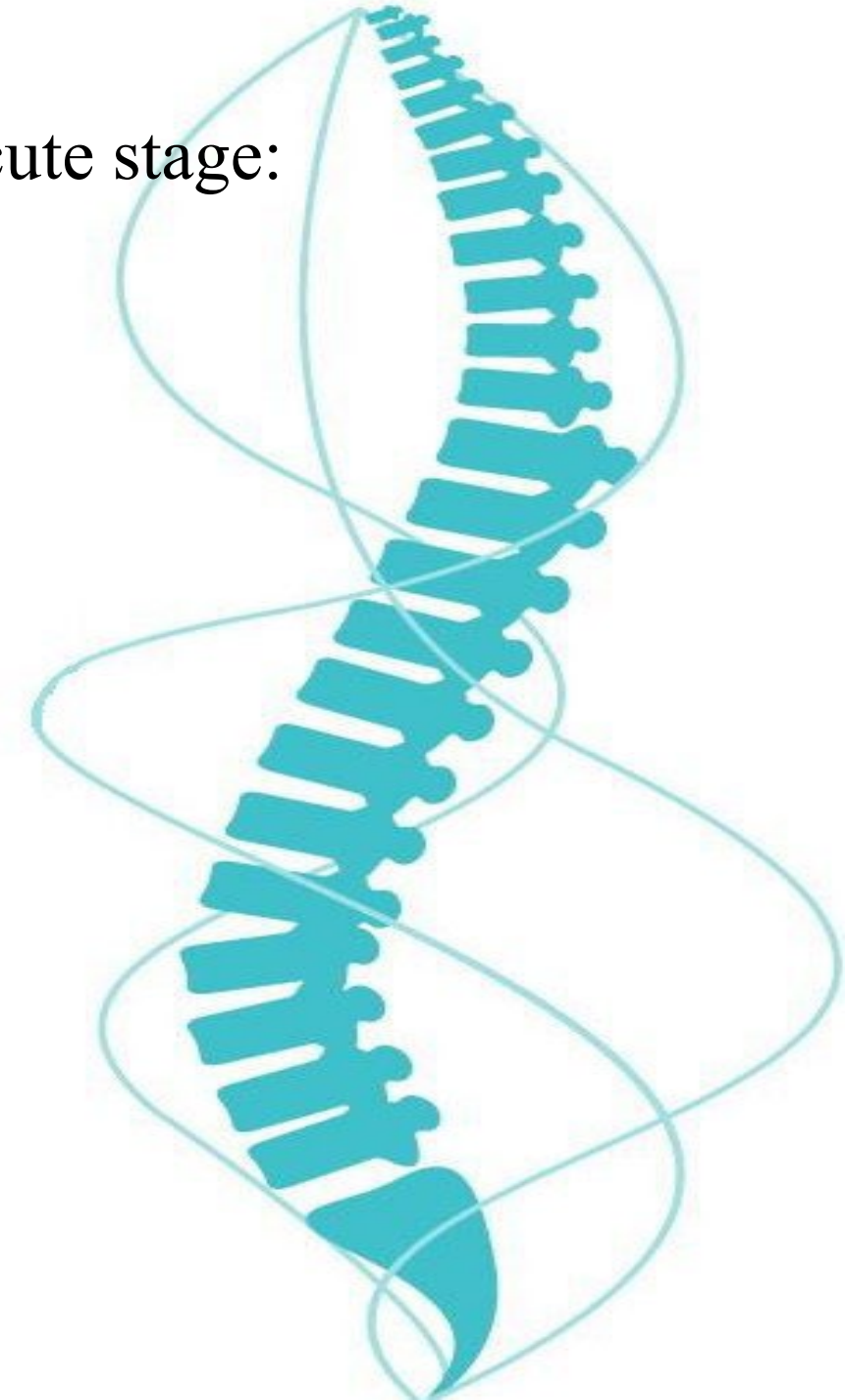



ACUTE SPINAL CORD INJURY:
COMPLETE OR INCOMPLETE.
LEVEL OF INJURY.
COMPLETE
INCOMPLETE:
Classification ASIA.

PHYSIOTHERAPY PROGRAMME



Initial mobility in subacute stage:

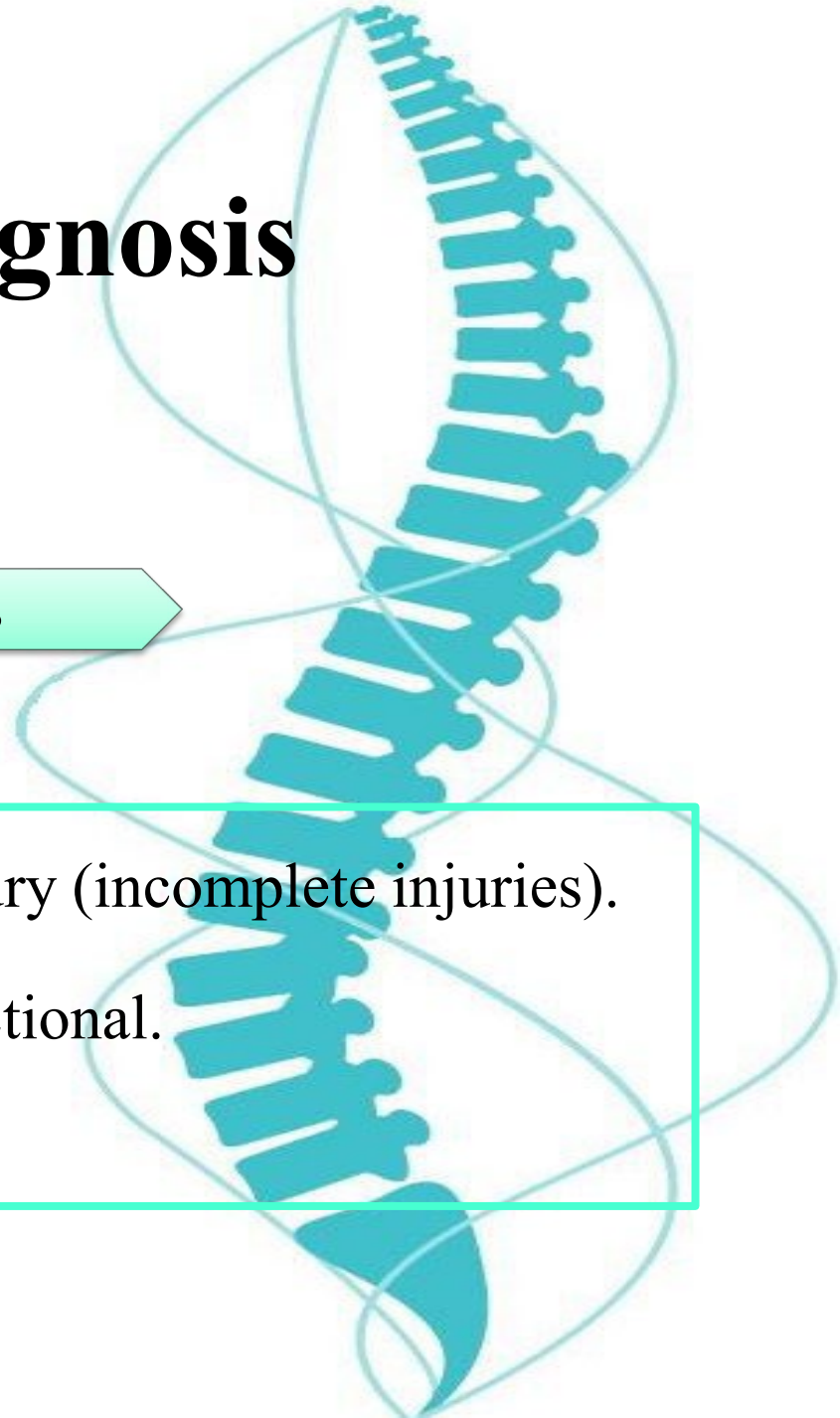


Spinal cord injury: prognosis

- Neurological assessment:

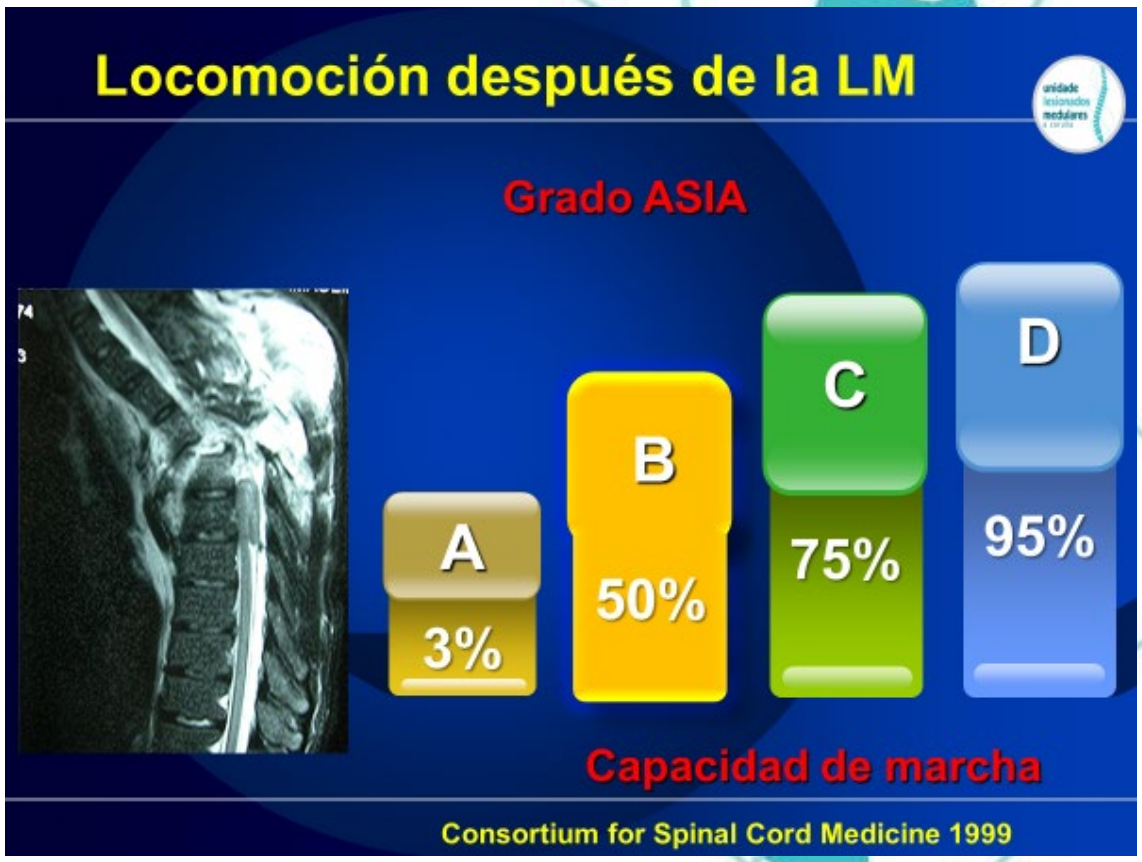
72 hours → 1 month → 3 months

- 60% of motor recovery is in the next 2 months post-injury (incomplete injuries).
- Delayed motor recovery is usually smaller and less functional.



FUNCTIONAL EVOLUTION.

- AIS A: 3% of the patients regain strength in the lower limbs
- AIS B: 50% of the patients can walk if pinprick sensation is preserved.
- AIS C: 75% of the patients can walk



Gait training

TRADITIONAL PHYSIOTHERAPY TREATMENT.

- MANUAL TREADMILL TRAINING WITH PARTIAL SUSPENSION.

-ROBOTIC-ASSISTED GAIT TRAINING

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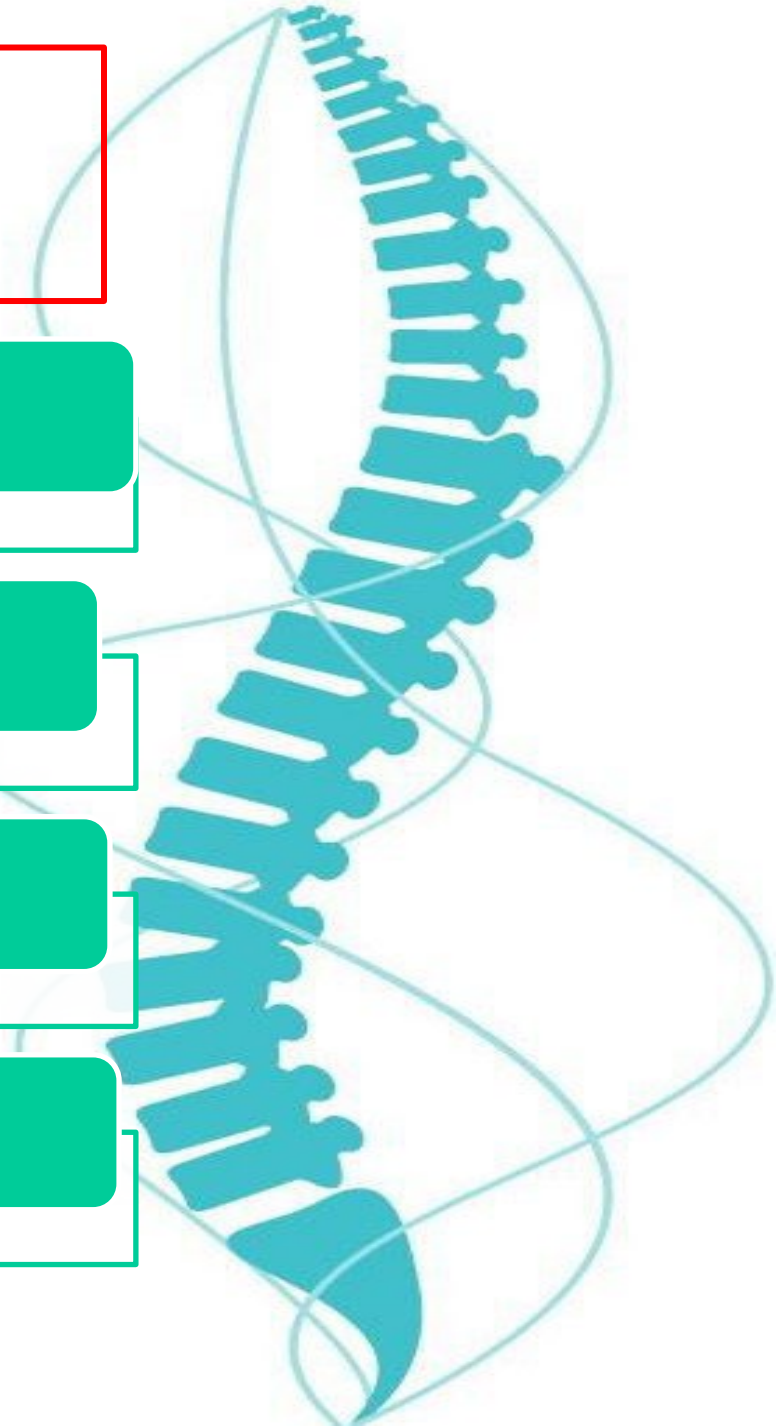
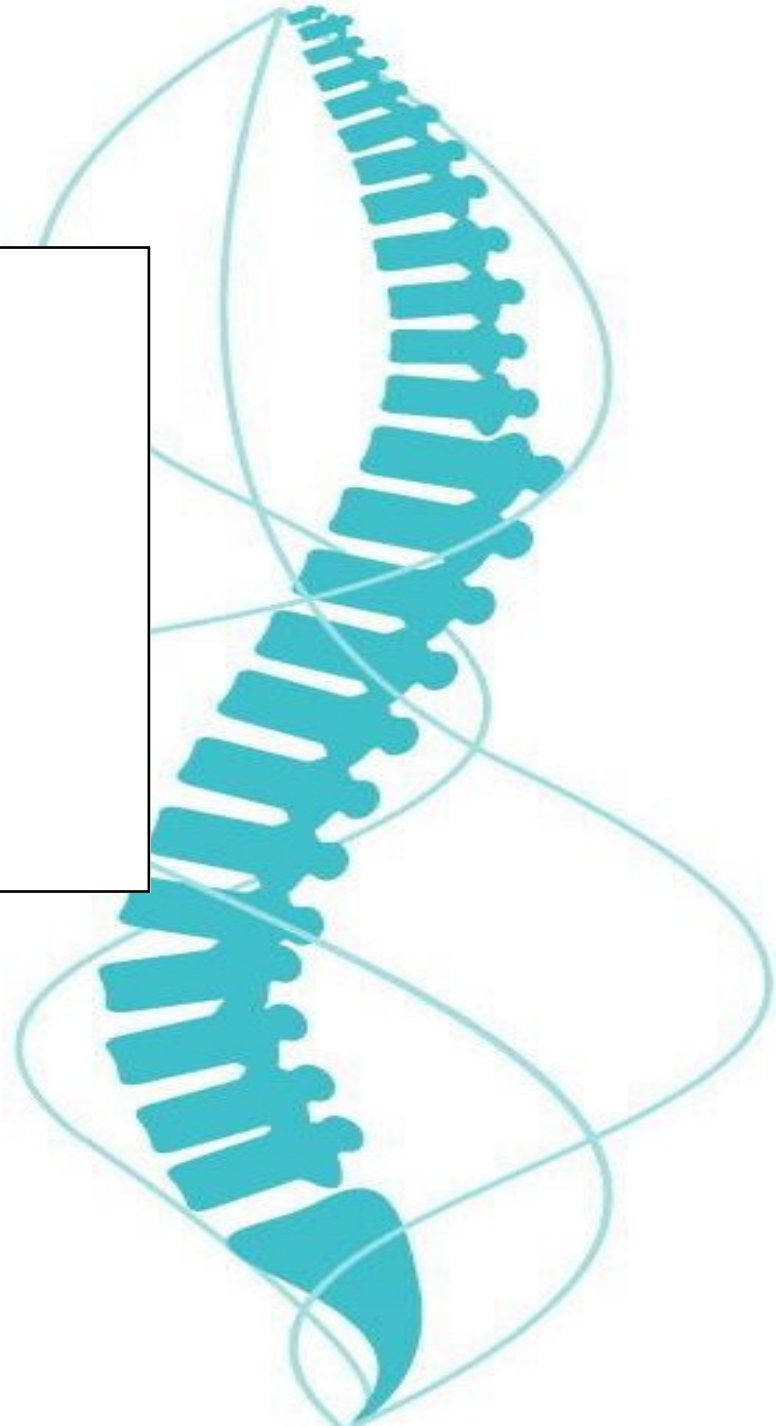
ROBOTIC-ASSISTED GAIT TRAINING

- Training in acute phase
- More normal walking pattern
- Increase the opportunity for practice
- Less physical effort for physiotherapist



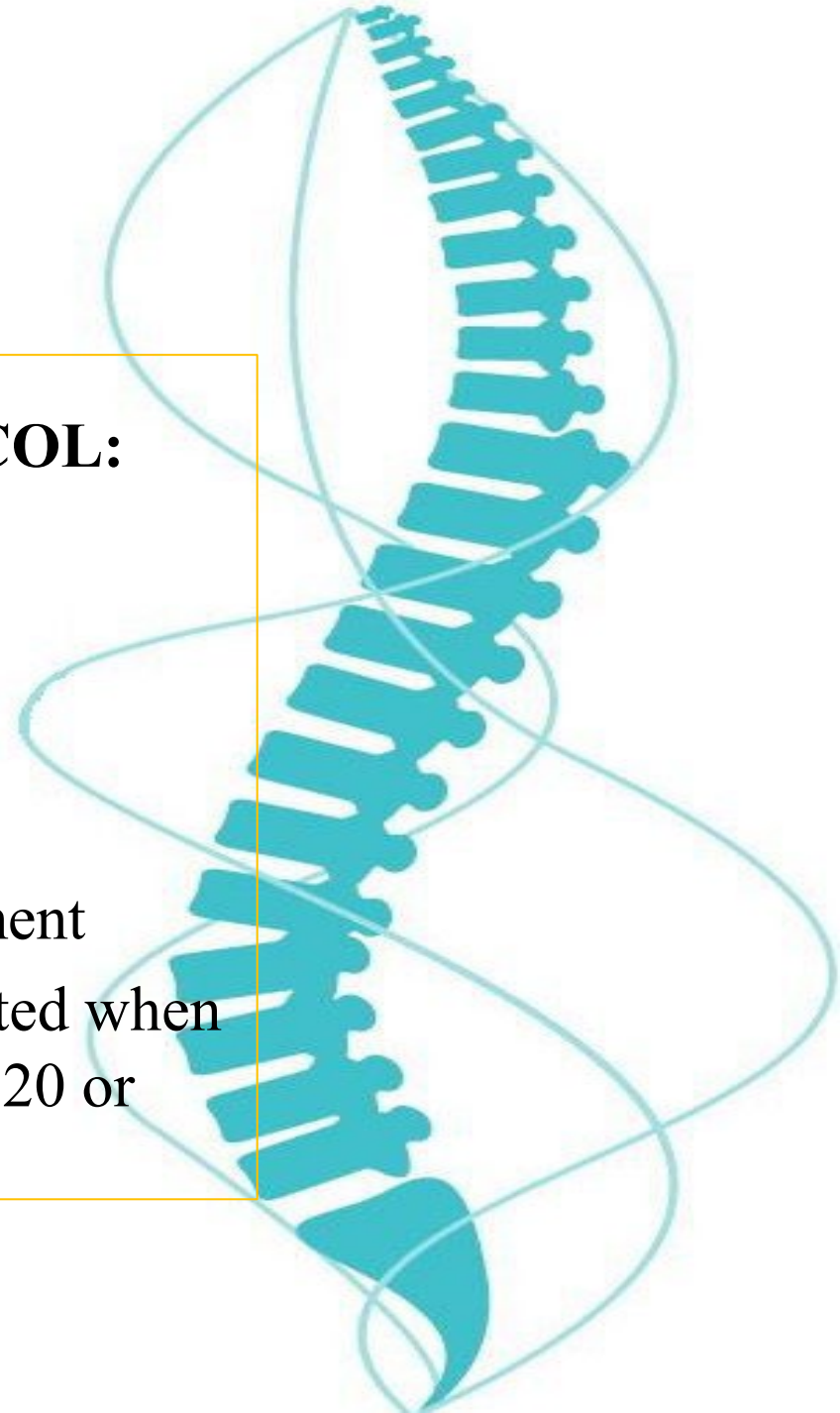


INDICATIONS:

- Incomplete injuries AIS C and AIS D.
- AIS A and B if they have voluntary hip mobility.

TRAINING PROTOCOL:

- 8 WEEKS
- 5 days/week
- 45 minutes/session
- With conventional physiotherapy treatment
- Treatment is completed when they reach WISCI II 20 or after 8 weeks.



ASSESSMENT TOOLS FOR MEASURING

- Spinal Cord Independence Measures (SCIM).

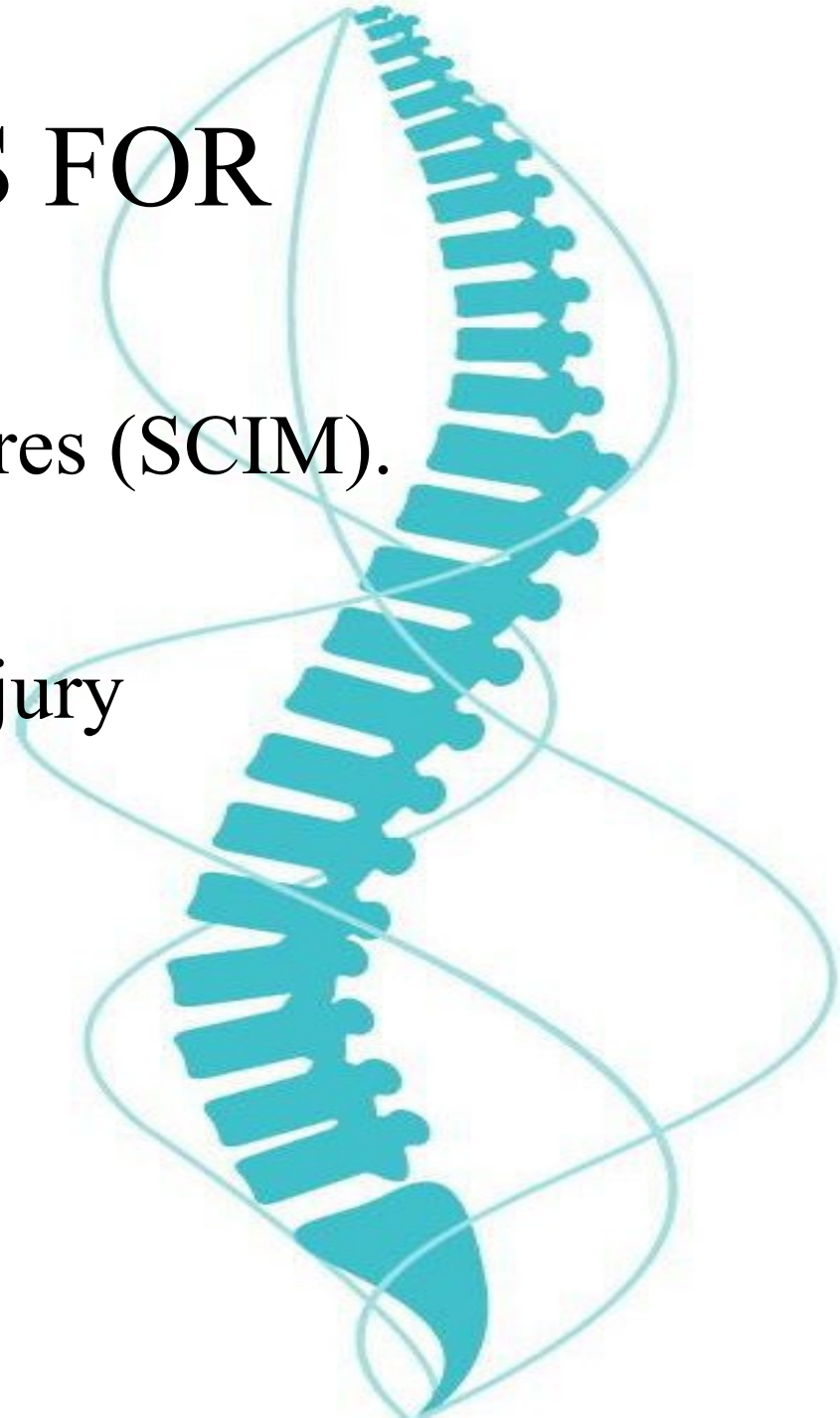
  Spinal Cord Independence Measure (SCIM) - SCIRE Professional (scireproject.com)

- Walking Index for Spinal Cord Injury (WISCI).

  Walking Index for Spinal Cord Injury | RehabMeasures Database (sralab.org)

- 10m Walk Test.

  10 Meter Walk Test | RehabMeasures Database (sralab.org)



Thank you.

Montserrat.Fernandez.Pereira@udc.es