

# SPINAL JOINT MOBILIZATION

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# Effects of Mobilization

## ***Neurophysiological effects:***

- Restoration of neurodynamics
- Stimulates mechanoreceptors
- Decrease muscle spasm & muscle guarding
- Increase in awareness of position & motion because of afferent nerve impulses
- Correction of positional faults
- Relaxation
- Decrease pain
- Decrease stiffness in joints as well as soft tissues

## ***Nutritional effects:***

- Distraction or small gliding movements – cause synovial fluid movement
- Movement can improve nutrient exchange
- Improve blood flow
- *Help normalize joint fluid viscosities that interfere with movement.*

## ***Mechanical effects:***

- Improve mobility of hypomobile joints
- Lengthening of shortened muscle connective tissues.
- Restoration of accessory movements
- Breaking of adhesions
- Maintains extensibility & tensile strength of the tissues
- Improve flexibility

Cracking noise may sometimes occur

# Goals of joint mobilization

## □ 1. Pain-relief mobilization

- *To ease severe pain, spasm, and paraesthesia,*
- *to help normalize joint fluid viscosities that interfere with movement.*

## □ 2. Relaxation mobilization

- *To relax muscles, decrease pain and facilitate movement ease.*

## □ 3. Stretch mobilization and manipulation

**(quick mobilization)**


- *To stretch shortened joint tissues,*
- *increase movement range*
- *correct positional faults.*

# Joint mobilization

- **1. Pain-relief mobilization**
  - Grade I - IISZ in the (actual) joint resting position
- **2. Relaxation mobilization**
  - Grade I - II in the joint (actual) resting position
- **3. Stretch mobilization**
  - *Grade III in the joint (actual) resting position*
  - *Grade III at the point of restriction*
- **4. Manipulation – Grade III ,**
  - high velocity, short amplitude, low force traction manipulation in the (actual) resting position.

# Pain-relief mobilization

- **severe pain or other symptoms (e.g., spasm, paraesthesia)** such that
  - the biomechanical status of the joint cannot be confirmed
  - or that Grade III stretching techniques cannot be tolerated,
- ❖ *direct treatment toward symptom control.*
- ❖ Symptom-control treatment should be applied only in the Slack Zone of the Grade I - II range.

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- ❖ Grade I and II Slack Zone mobilizations,
    - particularly intermittent traction movements,
    - also help to normalize joint fluid viscosities
    - thus improve joint movement
  - ❖ ***when movement is restricted by joint fluids rather than by shortened periarticular tissues.***



# Pain-relief traction mobilization (Grade I - IISZ)

- Intermittent Grade I and II traction-mobilizations in the Slack Zone, applied in the resting position or actual resting position
  - (i.e., three-dimensional positioned traction),
  - is the initial trial treatment of choice for symptom control.
- As soon as decreased symptoms allow the patient to tolerate
  - full biomechanical testing with end-feel assessment, then focus of treatment can shift to the appropriate mobilization for
    - Hypomobility
    - or stabilization for hypermobility.

# Vibrations and oscillations

- Short amplitude, oscillatory joint movements other than traction are also used for the treatment of pain.
- Vibrations and oscillations applied in the Grade I,II SZ
  - usually applied manually, but the use of mechanical devices such as vibrators
  - decrease pain and muscle spasm, therefore improving mobility without stretching tissues.
- ❖ Vibrations and oscillations can also be applied in the Grade IITZ and III range, interspersed with stretch mobilizations, to minimize discomfort.


# Relaxation mobilization

- Relaxation mobilizations differ from pain-relief mobilizations in that they can be applied anywhere in the Grade I-II range,
  - including both the Slack Zone and Transition Zone.
  - used to decrease *pain and relax muscles*.
- ❖ Relaxation mobilizations should not produce or increase pain.
  - Use them in cases where joint movement is limited by muscle spasm rather than by shortened tissues.
- Relaxation mobilizations are also useful as preparation for more intensive treatments (for example, a Grade III stretch mobilization) which can be more effective when the patient's muscles are fully relaxed.

# Relaxation-traction mobilization

## Grade I -II

- Apply intermittent traction-mobilizations in the actual joint resting position within the Grade I or II range, including the Transition Zone.
- Slowly distract the joint surfaces, then slowly release until the joint returns to the starting position.
- Rest the joint a few seconds in the starting position before you repeat the procedure.
- Between each traction movement, readjust three-dimensional positioning (the actual resting position) of the involved joint as joint tissue response allows.

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- You may need to interrupt the traction procedure and reposition the joint in different dimensions until the new actual resting position is found and repeated traction relieves symptoms.
  - ❖ ***There should be a natural progression in joint position toward the resting position of the joint.***
  - Avoid tissue stretching, stay well within the Grade I and II range
  - do not mobilize into the Grade III range where tissue stretching occurs.

## ❖ **Continuously modify**

- joint positioning,
- mobilization forces ,
- rhythm
- amplitude of the traction procedure

## ❖ **based on the patient's response to treatment.**

- Evaluate the effect of these carefully graded traction forces.
- **observe an immediate improvement in signs and symptoms** if your treatment approach is correct.