TRANSLATORIC JOINT PLAY

Dr. Asif Islam PT,SMC,UOS.

Translatoric joint play

- In every joint there are positions in which looseness or slack in the capsule and ligaments allows
  - small, precise movements of joint play to occur as a consequence of internal and external (e.g.,passive) movement forces on the body.
- These joint play movements are an

  accessory movements not under voluntary control, and are essential to the easy, painless performance of active movement.

Accessory Movements

- Accessory movements are movements in the joint and surrounding tissues that are necessary for normal ROM but that cannot be actively performed by the patient.
  - Terms that relate to accessory movements are component motions and joint play.
- **Physiological Movements**
- Physiological movements are movements the patient can do voluntarily (e.g., the classic or traditional movements, such as flexion, abduction, and rotation).
  - The term *osteokinematics is used when these motions of* the bones are described.

Component motions

- *Component motions are those motions that accompany* active motion but are not under voluntary control.
- The term is often used synonymously with accessory movement.
- For example, motions such as upward rotation of the scapula and rotation of the clavicle, which occur with shoulder flexion,
- Similarly rotation of the fibula, which occurs with ankle motions, are component motions.

Joint play

- *Joint play describes the motions that occur between* the joint surfaces, which allows the bones to move.

  The movements are necessary for normal joint functioning through the ROM and can be demonstrated passively, but they cannot be performed actively by the patient.

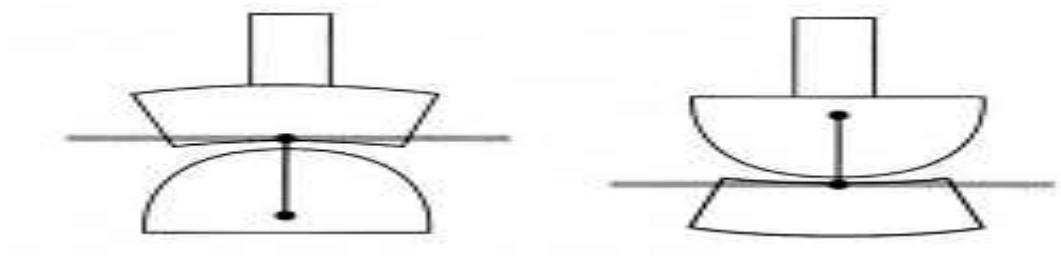
  The movements include

- distraction,
- sliding,
- compression,
- rolling,
- and spinning of the joint surfaces.
- The term *arthrokinematics is used when* these motions of the bone surfaces within the joint are described.

- The purpose of joint mobilization is to restore normal, painless joint function. In restricted joints, this involves the restoration of joint play to normalize the
  - roll-gliding that is essential to active movement.
- In the OMT Kaltenborn-Evjenth Concept we use translatoric (linear) joint play movements *in relation to the treatment plane in* both evaluation and treatment.
- We apply translatoric traction, compression and gliding joint play movements to evaluate joint function .
- We apply translatoric gliding and traction mobilizations to restore joint play.

The Kaltenborn Treatment Plane

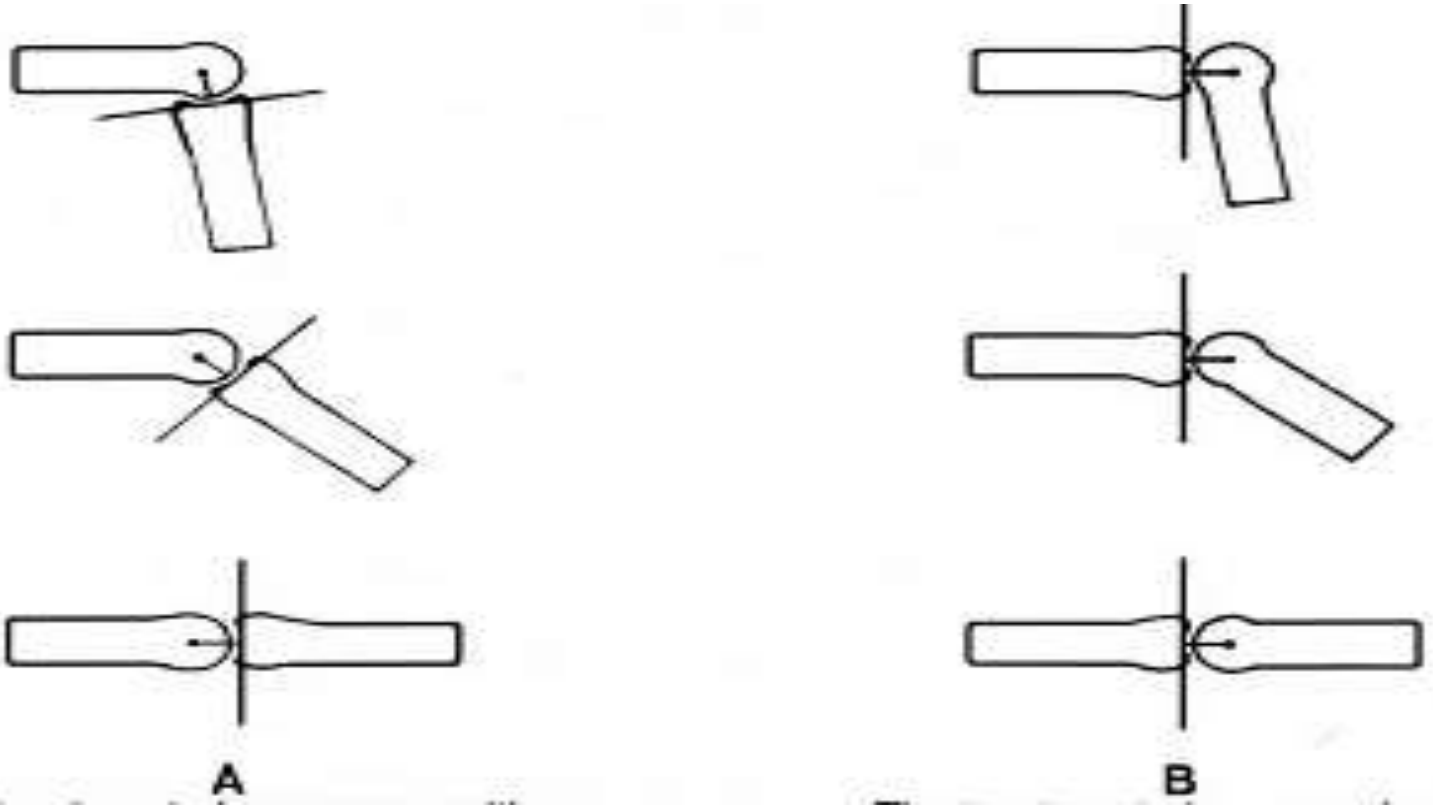
- The Kaltenborn Treatment Plane passes through the joint and lies at a right angle to a line running from the axis of rotation in the convex bony partner, to the deepest aspect of the articulating concave surface.



- For practical purposes, you can quickly estimate where the treatment plane lies by imagining that it lies on the concave articular surface.

Kaltenborn Treatment Plane

The Kaltenbom Treatment Plane remains with the concave joint surface whether the moving joint partner is concave or convex.



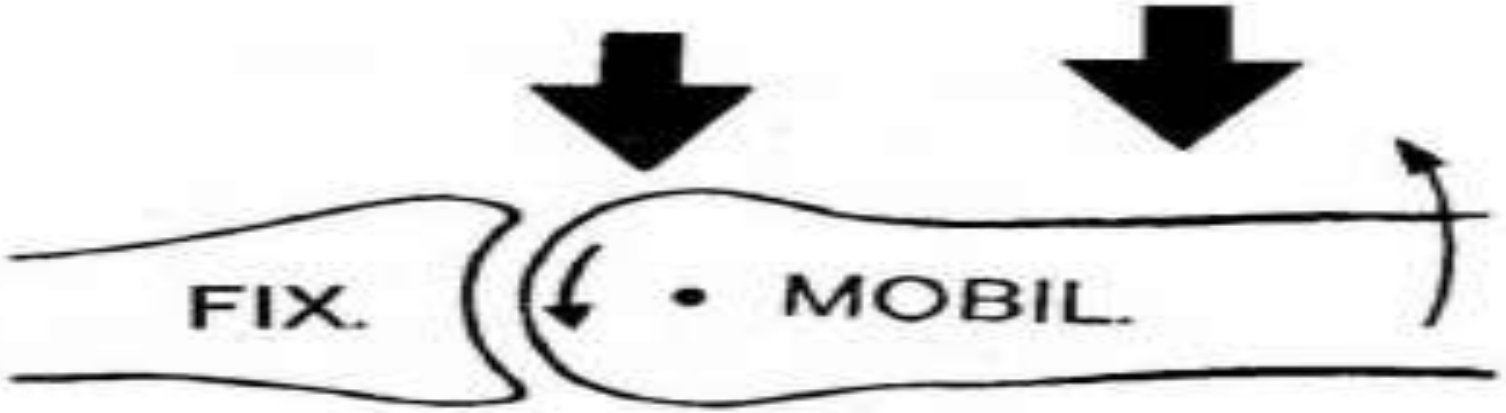
Determining the direction of restricted gliding

- **Glide test (the direct method)**

- Apply passive translatoric gliding movements in all possible directions and determine in which directions joint gliding is restricted.
- The glide test is the preferred method because it gives the most accurate information about the degree and nature of a gliding restriction, including its end-feel.

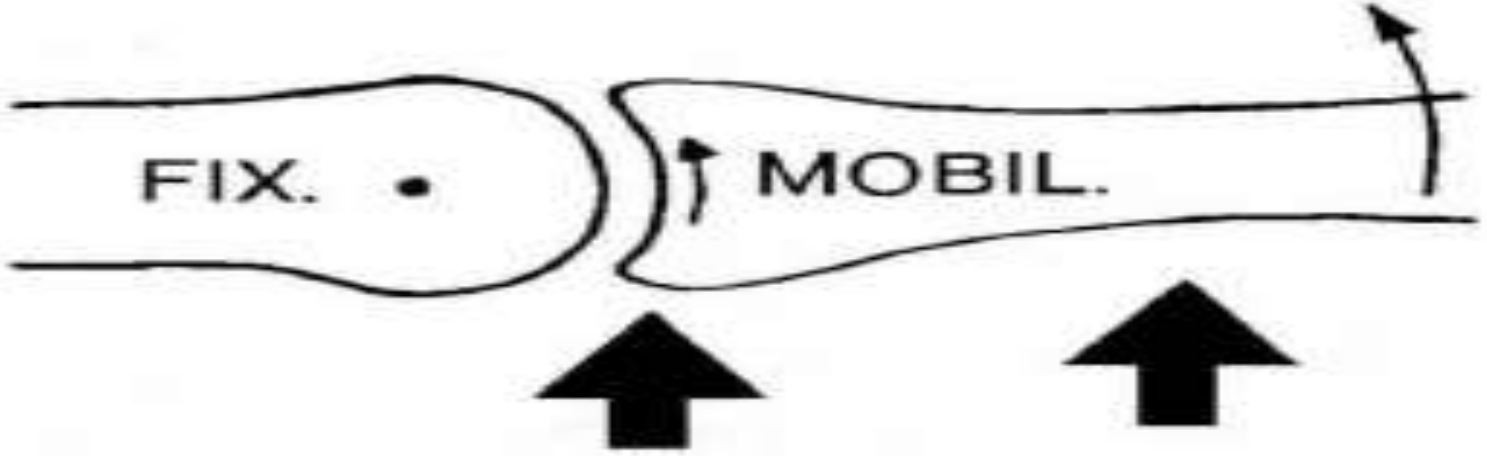
- **Kaltenborn Convex-Concave Rule (the indirect method)**

- First determine which bone rotations are decreased and whether the moving joint partner is convex or concave. Then deduce the direction of decreased joint gliding by applying the Convex Concave Rule.



CONVEX RULE → OPPOSITE

The right (moving) joint partner's surface is convex. When bone movement is restricted in an upward direction (curved arrow), the treatment direction is downward (two bold arrows).



CONCAVE RULE → SAME

The right (moving) joint partner's surface is concave. When bone movement is restricted in an upward direction (curved arrow), the treatment direction is also upwards (two bold arrows).

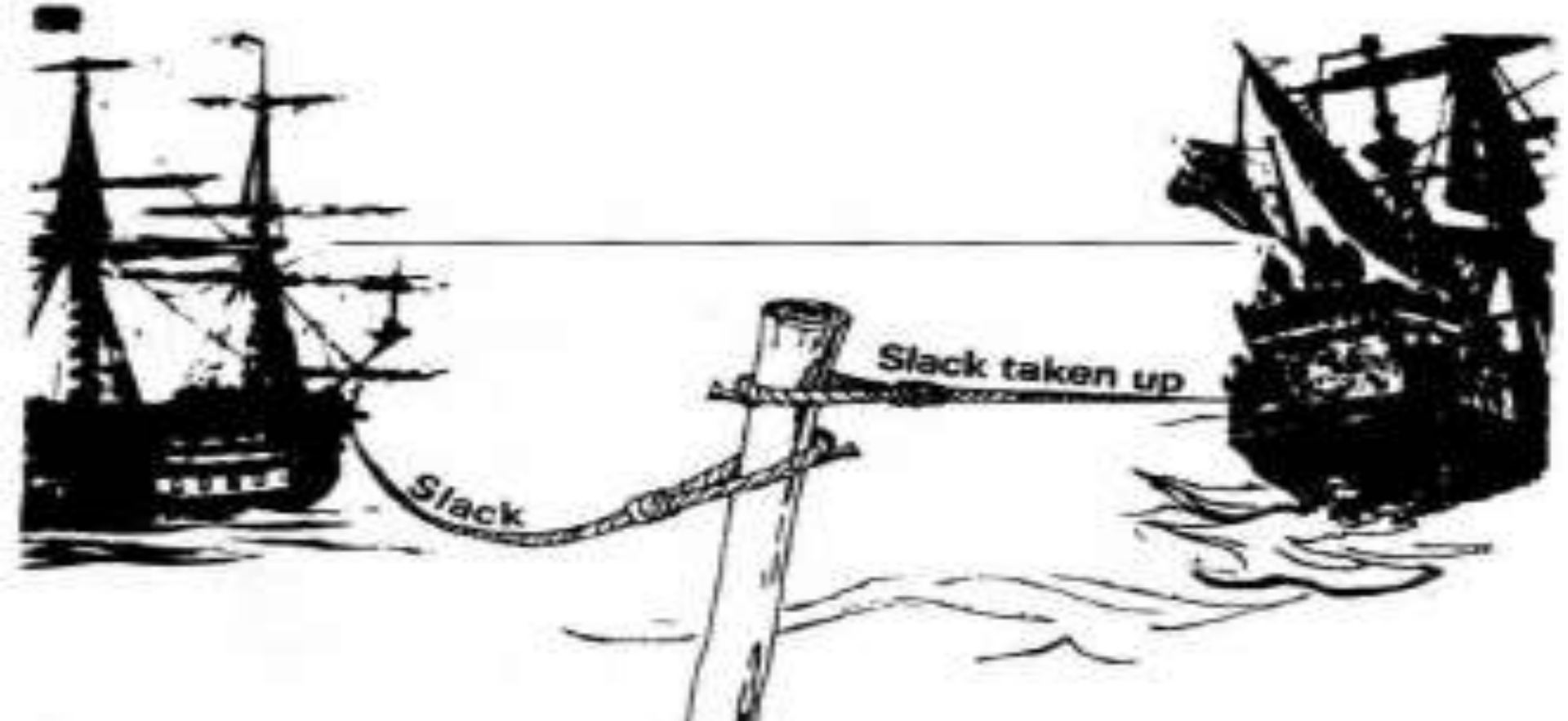
Kaltenborn Traction Grading

- Grade I (loosen)
  - Neutralizes pressure in joint without actual surface separation
  - Produce pain relief by reducing compressive forces
- Grade II (slack zone & transitional zone)
  - Separates articulating surfaces, taking up slack or eliminating play within joint capsule
  - Used initially to determine joint sensitivity
- Grade III (stretch)
  - Involves stretching of soft tissue surrounding joint
  - Increase mobility in hypomobile joint

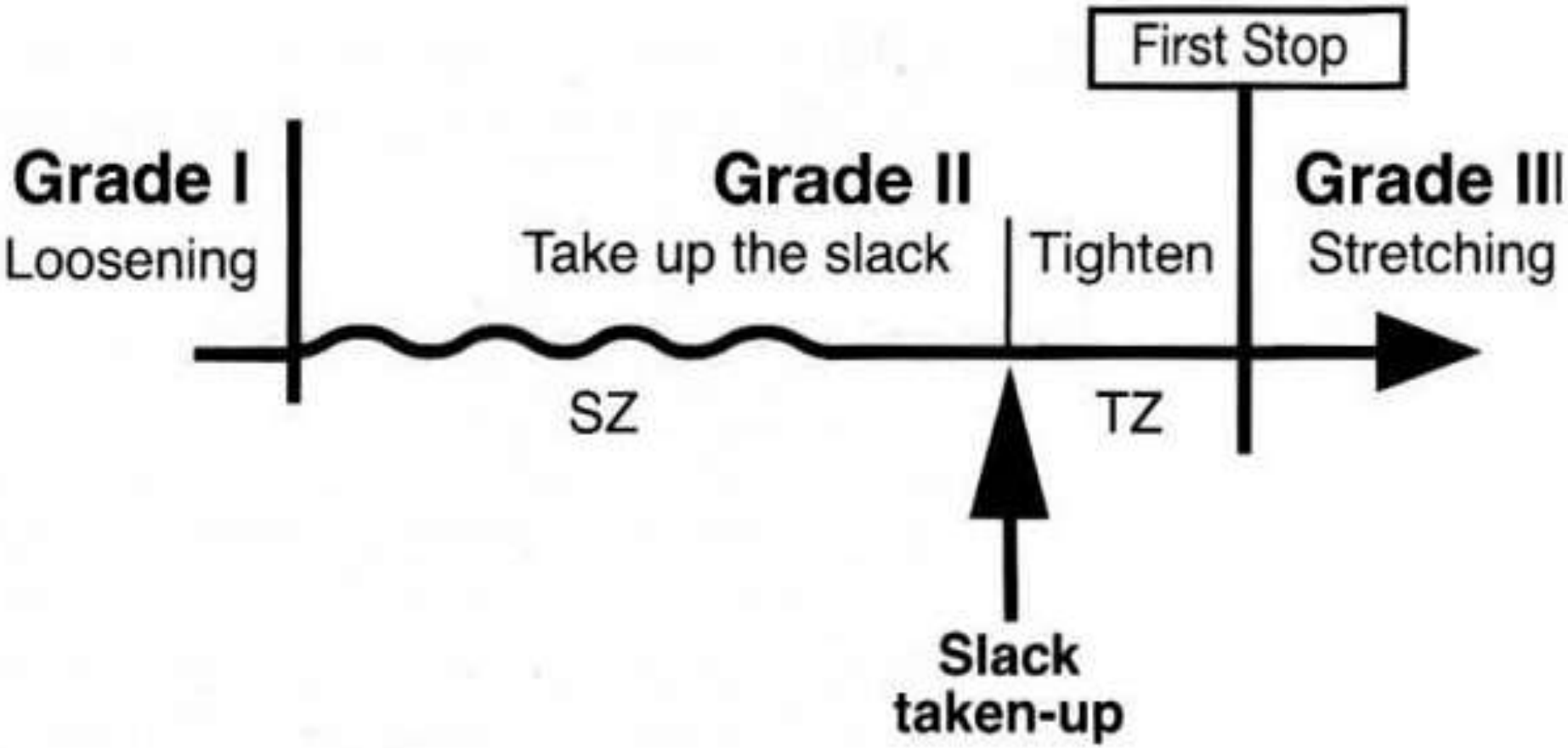
- Grade I traction should be used initially to reduce chance of painful reaction
- 10 second intermittent grade I & II traction can be used
- Distracting joint surface up to a grade III & releasing allows for return to resting position
- Grade III traction should be used in conjunction with mobilization glides for hypomobile joints

The “slack”:

The term "slack,“ is used before the first resistance felt, during translatoric movement, in the joint



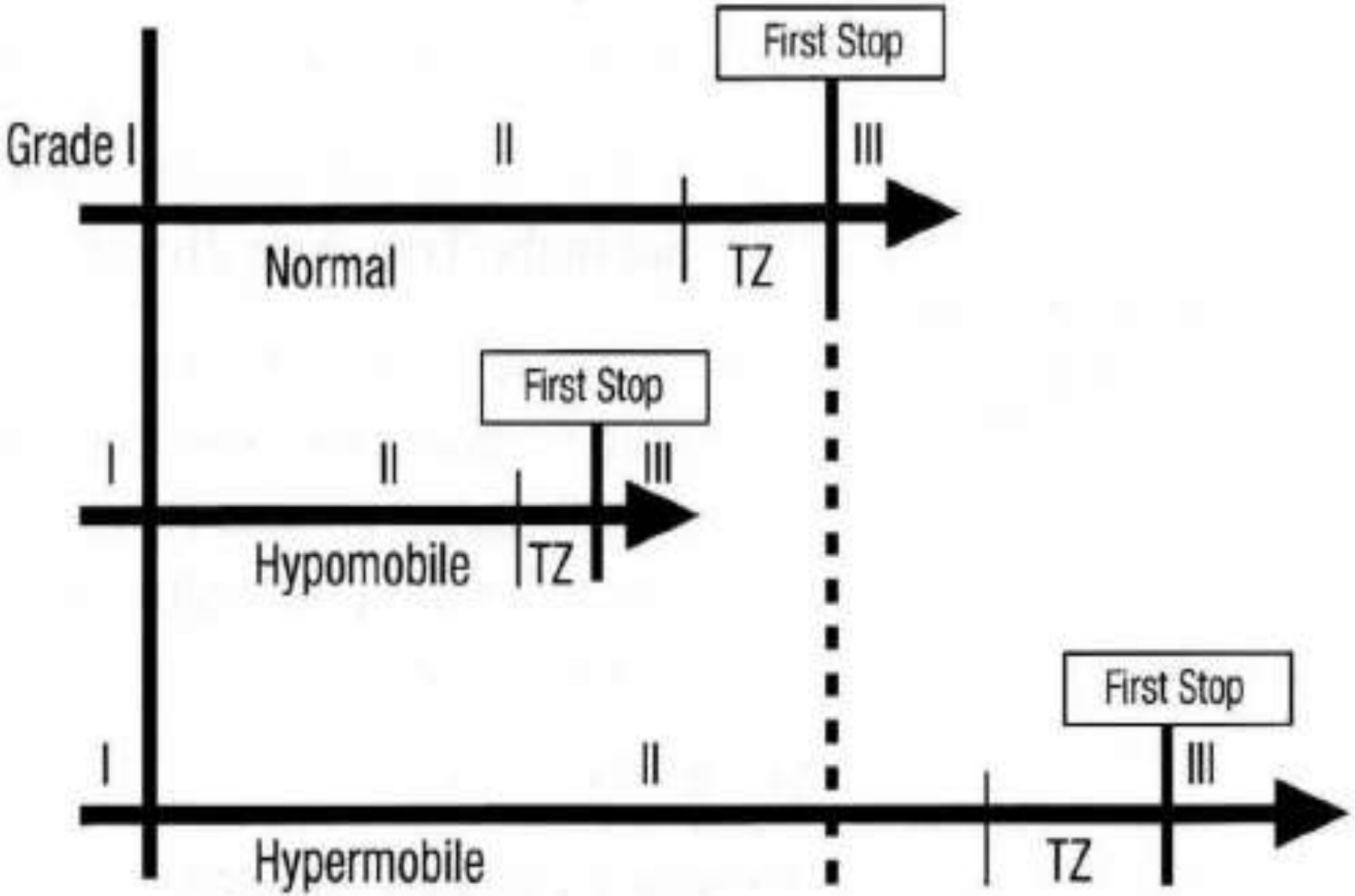
Grades of translatoric movement



SZ = Slack Zone TZ = Transition Zone

• Pathological grades of translatoric movement

- In the presence of joint pathology, the quality of end-feel is altered and grades of movement may be altered as well. For example,
- in the presence of a *marked hypomobility the slack is* taken up sooner than normal and greater force may be necessary to nullify intra-articular compression forces.
- In *hypermobility* the slack is taken up later than normal and less force may be necessary to achieve Grade I traction.



TZ = Transition Zone

Using translatoric grades of movement

- **Grade I**
- Relieve pain with vibratory and oscillatory movements.
- glide tests and mobilizations to reduce compression force
- to reduce friction between joint surfaces
- to facilitate glide mobilizations.
- **Grade II**
- Test joint play traction and glide movements.
- Relieve pain. (Treatment takes place in the Slack Zone, not in the Transition Zone.)
- Increase or maintain movement
- Relaxation mobilization can be applied within the entire Grade II range, including the Transition Zone
- **Grade III**
- Test joint play end-feel.
- Increase mobility and joint play by stretching shortened tissues.