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Foot and Ankle Techniques
Talocrural (TC) AP Mobilization in Supine

Patient Position:
Prone, knee extended and foot just off the table.

Therapist Instructions:
- Proximal hand: Stabilizes distal leg by grasping just proximal to malleoli. May rest your knuckles on plinth for added support.
- Distal (mobilizing) hand: Cups the anterior talus into the 1st web space.
- Use your thigh to help stabilize the foot.
- Mobilize with a posteriorly directed force on the talus into the restrictive barrier.
- Progressively increase ankle DF with your thigh.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online: https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Talocrural (TC) PA Mobilization in Prone

**Patient Position:**
Prone, knee extended and foot slightly off the end of the table.

**Therapist Instructions:**
- Proximal hand: Stabilizes distal leg by grasping just proximal to malleoli. May rest your hand on plinth for added support.
- Distal (mobilizing) hand: Cups the posterior calcaneus into the 1st web space.
- Use your thigh to help stabilize the foot.
- Mobilize with an anteriorly directed force on the calcaneus into the restrictive barrier.
- May use thigh to help guide motion and progressively move the ankle into greater plantar flexion.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Distal Tib-Fib PA Mobilization in Prone

Patient Position:
Prone, knee extended, foot slight off edge of table.

Therapist Instructions:
• Stabilizing hand grasps distal anterior tibia and rests it on the table.
• Mobilization hand uses either the thenar or hypothenar eminence on the posterior lateral malleolus, lock your elbow to direct force.
• Mobilize with an anteriorly directed force on the lateral malleolus.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Distal Tib-Fib AP Mobilization in Supine

Patient Position:
Supine, knee extended, foot slight off edge of table.

Therapist Instructions:
- Stabilizing hand grasps distal posterior tibia and rests it on the table.
- Mobilization hand uses either the thenar or hypothenar eminence on the anterior lateral malleolus, lock your elbow to direct force.
- Mobilize with an posteriorly directed force on the lateral malleolus.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
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**Talocrural (TC) and Subtalar (ST) Lateral Glides**

**Patient Position:**
Side lying, treatment side down.

**Therapist Instructions:**
- Proximal hand: Stabilizes distal leg by grasping just proximal to malleoli. Rest your forearm across the patient’s medial leg for added support.
- Distal (mobilizing) hand: Grasps the talus and calcaneous with the heel of the hand over the talus.
- Position your body so your mobilizing forearm is in line with the mobilizing force you are imparting.
- Adjust the motion to impart a lateral force.
- Move both hands inferiorly one joint to change from TC to ST joint mobilization.

*Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sin(g)s.*

*A Video of This Procedure Can Be Viewed Online:*
Talocrural (TC) and Subtalar (ST) Medial Glides

Patient Position:
Side lying, treatment side up.

Therapist Instructions:

- Proximal hand: Stabilizes distal leg by grasping just proximal to malleoli. Rest your forearm across the patient’s lateral leg for added support.
- Distal (mobilizing) hand: Grasps the talus and calcaneus with the heel of the hand over the talus.
- Position your body so your mobilizing forearm is in line with the mobilizing force you are imparting.
- Graded mobilization is applied while you adjust the vector/mobilizing force to impart medial glide.
- Move both hands inferiorly one joint to change from TC to ST joint mobilization.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
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Rearfoot Distraction Manipulation

Patient Position:
Supine, foot off the edge of the table.

Therapist Instructions:
- Grasp the patient’s foot with both hands.
- Small or ring fingers lie just below the neck of the talus.
- Both thumbs provide firm pressure to the mid forefoot.
- Engage restrictive barrier with ankle DF, eversion, slight pronation & distraction.
- Evert & DF forefoot to fine-tune barrier.
- Apply a High Velocity Low Amplitude (HVLA) thrust in a caudal direction (scooping motion).

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sign(s).

A Video of This Procedure Can Be Viewed Online:
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Cuboid Manipulation

Patient Position:
Prone, knee flexed.

Therapist Instructions:
- Grasp the patient’s foot with both hands.
- Localize the position of the cuboid using the 5th MT as a guide.
- Position thumbs on plantar surface of cuboid, hands grasp patient’s midfoot.
- Guide foot into plantar flexion and inversion to find restrictive barrier.
- Apply HVLA thrust in small “whip-like” fashion while sustaining localized pressure on the medial plantar aspect of cuboid.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

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Ankle Dorsi Flexion Mobilization with Movement (MWM)

Patient Position:
Standing or kneeling on table.

Therapist Instructions:
- Grasps and support the arch of the foot.
- Apply a stabilizing force over the anterior talus.
- Place a belt over the posterior distal leg of the patient and around the clinician’s buttock region.
- Guide the patient into dorsiflexion while simultaneously producing a posterior to anterior force to the distal leg by leaning backwards/ pulling on the belt.
- Adjust the forces, direction of motion, and stabilization until the patient experiences a pain-free motion of ankle dorsiflexion.
- Reassess after mobilization.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
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Metatarsal AP/PA Mobilization

Patient Position:
Supine

Therapist Instructions:
• Firmly grasp the 1st MT with stabilization hand.
• Firmly grasp the 2nd MT with the mobilization hand.
• With mobilization hand, take up the AP barrier and apply a posteriorly directed graded mobilization.
• May use the same technique to move laterally across the MTs to mobilize any or all of the adjacent MTs.
• May do the same technique by using a PA directed graded mobilization force as needed.
• Additional rotational forces may be incorporated if comfortable and if they enable the clinician to optimally engage the barrier.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

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**1st MTP Mobilization**

**Patient Position:**
Supine

**Therapist Instructions:**
- Stabilization hand firmly grasp 1st MT.
- Mobilization hands firmly grasp proximal phalanx of the big toe.
- Add distraction force and apply graded mobilize into flexion restriction.
- May also add long axis distraction and apply high velocity low amplitude (HVLA) thrust in the direction of distraction.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
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Knee Techniques
**Knee Flexion in Neutral/IR/ER**

**Patient Position:**
Supine, hip flexed to 90°, flex knee to patient tolerance.

**Therapist Instruction:**
- Proximal hand: supports the knee joint and stabilizes the distal femur to minimize hip IR/ER or adduction/abduction.
- Distal hand: Grasp the ankle; fingers at medical malleolus and thumb at the lateral malleolus. Alternately, you may grasp the foot in various ways that are comfortable to you and your patient.
- Flexion: Apply graded mobilization into further flexion.
- Flexion with IR: Use distal hand to medially rotate the tibia. Apply graded mobilization force into flexion and abduction (the patient’s heel moves laterally).
- Flexion with ER: Use distal hand to laterally rotate the tibia. Apply graded mobilization force into flexion and adduction (the patient’s heel moves medially).

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
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Knee Extension Neutral/Varus/Valgus (Grade II–III)

**Patient Position:**
Supine, hip in neutral, knee in extension.

**Therapist Instruction:**
- Knee and leg on the plinth with patient’s heel resting on your thigh adjacent to ASIS.
- Hands placed on medial and lateral tibial or femoral condyles; forearms at right angles to leg.
- Extension: Apply graded mobilization into extension by raising and lowering knee through a distance of about 5-6".
- Extension w/ Varus: Use medial hand to apply a varus stress to the knee joint throughout range.
- Extension w/ Valgus: Use lateral hand to apply a valgus stress to the knee joint throughout range.
- When performing extension with valgus, use your innermost forearm to stabilize the patient’s leg, ankle, and foot into your body.

A Video of This Procedure Can Be Viewed Online:
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Knee Extension Neutral/Varus/Valgus (Grade IV)

**Patient Position:**
Supine, hip in neutral, knee in extension.

**Therapist Instruction:**
- Distal hand: Grasp the patient’s ankle, holding the heel a few inches above the plinth.
- Proximal hand: Place heel of hand over the tibial tuberosity, fingers pointing distally.
- Add Grade IV mobilizations for:
  1. Extension: Apply small-amplitude mobilization into extension using an AP force with proximal arm.
  2. Extension w/ Varus: Position proximal hand over medial tibial plateau to impart ext/varus force.
  3. Extension w/ Valgus: Grip ankle with supinated forearm. Position proximal hand over lateral tibial plateau to impart ext/valgus force.
- Some patients are more comfortable with the heel resting on a small towel roll on the plinth instead of supporting the leg higher off the plinth.
- Final adjustments may include adding a bit of traction through the distal hand and/or a scooping motion with the mobilizing hand.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

*A Video of This Procedure Can Be Viewed Online:*
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Knee AP/PA Progression (Grade II–IV)

Patient Position:
Supine, knee flexed to pain free limit.

Therapist Instructions:
- Sitting on plinth with patient’s foot under the thigh for stabilization.
- Thenar eminence of both hands over tibial condyles, while fingers wrap posteriorly into the popliteal fossa.
- Graded anteroposterior (AP) mobilizations produced by pushing on the proximal tibia.
- Graded posteroanterior (PA) mobilizations produced by pulling on the proximal tibia.
- The lower leg can be prepositioned into internal or external rotation as needed to optimize the technique.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
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Patellar Glides Caudal/Cephalad (Grade II-IV)

Patient Position:
Supine, knee flexed over therapist’s thigh.

Therapist Instructions:
- Place one knee and leg in a kneeling position on the plinth.
- Caudal Glides: Bottom hand (guide hand): Cups around the inferior pole and distal patella in the web space between thumb and index finger and the medial and lateral patella with the thumb and index finger.
- Top hand (mobilizing hand): Cups the superior pole of the patella into the heel of hand.
- Apply graded mobilization force in a caudal direction without adding compression.
- Cephalad Glides: Top hand (guide hand): Cups around the inferior pole and distal patella in the web space between thumb and index finger and the medial and lateral patella with the thumb and index finger.
- Bottom hand (mobilizing hand): Cups the inferior pole of the patella into the heel of hand.
- Apply graded mobilization force in a cephalad direction without adding compression.
- Guide hand can be used to decompress the PF joint (pincher motion) or add more compression during treatment.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

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Patellar Glides Sideglides (Grade II-IV)

Patient Position:
Side lying, treatment side up, knee slightly flexed.

Therapist Instructions:
- Place pillow between the patient’s knees.
- Place the stabilization hand around posterior knee.
- Place the thenar eminence of the mobilization hand along the lateral border of the patella.
- Position the mobilization arm in a direction that allows medial force.
- Apply graded mobilization to the patella in a medial direction.
- Adjust mobilizing vector to add more proximal or distal directed force to optimize the technique.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
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Proximal Tib-Fib PA Glides

Patient position:
Prone with knee flexed about 30° and leg supported on your thigh.

Therapist Instructions:
• Position one knee on table to support the patient’s leg.
• Distal hand: Grasps the patient’s medial calf to stabilize the lower leg.
• Proximal hand: Position the heel of hand or thenar eminence over the posterior fibular head.
• Use your arm to apply graded mobilizations in a posteroanterior direction.
• May use both thumbs over the posterior fibular head for gentle mobilization forces (grades I-II).

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
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Fibular Head Manipulation

Patient Position:
Supine with knee flexed.

Therapist Instructions:
• Proximal hand: Grasp the posterior proximal tibia just medial to fibular head.
• Move soft tissue laterally until 2nd MP joint is against posterior fibular head.
• Distal hand: Serves as the movement hand by grasping the distal tibia.
• Rotate the tibia into ER with your movement hand and take up slack into knee flexion.
• Engage barrier in knee flexion and apply Grade V mobilization (HVLA thrust) into flexion direction.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sin(g).
Knee Flexion Mobilization with Movement (MWM)

Patient Position:
Prone, knee flexed.

Therapist Instructions:
- Stand on treatment side of the patient.
- Place mobilization belt around the patient’s distal tibia while the patient holds both ends of the belt.
- Flex patient’s knee to slight onset of pain.
- Place the heel of your hands on the distal femur and proximal tibia and interlace your fingers as shown.
- Have patient actively flex knee within new pain free range up to 10 repetitions.
- You may choose to passively flex the knee and hold at maximal pain free end range for 5 seconds, and repeat up to 10 times.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
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Hip Techniques
**Hip Internal Rotation in Prone (Grade II-IV)**

A low velocity physiologic mobilization force of the hip into internal rotation.

**Patient Position:**
Patient prone, hip in neutral, knee flexed to 90°.

**Therapists Instructions:**
- Distal hand: Grasps the distal lower leg to stabilize the ankle and leg.
- Proximal hand: Rests on the contralateral pelvis/buttock.
- Use the distal hand to bring the hip into enough medial rotation for the contralateral ilium to raise 1-2” from table.
- Stabilize the distal leg in this position.
- Apply large-amplitude oscillations with the proximal hand on the contralateral hip out of resistance (grade II) or into resistance (grade III), or small amplitude into resistance (grade IV).
- Protect the knee from valgus stress by placing hand over the patient’s knee while providing a broad forearm contact with the patient’s medial tibia while applying the mobilization force.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

**A Video of This Procedure Can Be Viewed Online:**
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Hip Internal and External Rotation in Supine (Grade II-IV)
A low velocity physiologic mobilization force of the hip into internal rotation.

Patient Position:
Patient supine, hip flexed to 90°, knee flexed to 90°.

Therapists Instructions:
• Use both hands to grasp the patient’s distal thigh.
• Tuck the patient’s leg between your arm and body.
• Internally rotate the patient’s hip into resistance.
• Apply large-amplitude oscillations out of resistance (grade II) or into resistance (grade III), or small amplitude into resistance (grade IV).
• Mobilize the hip into further internal rotation by gently shifting your body weight laterally.
• Use your hands to maintain the thigh perpendicular to plinth.
• You may use the same basic technique to apply graded mobilization into external rotation.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Hip Internal Rotation in Supine in Extension (Grade II-IV)

**Patient Position:**
Patient supine towards the edge of the plinth, hip slightly abducted to enable knee to be over the edge, knee flexed to 90°.

**Therapists Instructions:**
- Gently lift patient’s leg over the edge of the plinth.
- Use proximal hand to stabilize thigh on the plinth.
- Use distal hand to grasp patient’s leg just proximal to the malleoli.
- With proximal hand stabilize the thigh, use distal hand to apply graded mobilization force in the direction of hip internal rotation.
- Apply large-amplitude oscillations out of resistance (grade II) or into resistance (grade III), or small amplitude into resistance (grade IV).

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
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Hip Caudal Glides in Supine with Belt

Patient Position:
Patient supine towards the edge of the plinth, hip flexed to 90°, knee allowed to fully flex to comfort.

Therapists Instructions:
- Flex the hip into resistance up to 90°.
- If not using belt, interlace your hands and place them into the hip crease, and hold thigh against your body.
- If using a belt, position mobilization belt pad in patient’s hip crease; strap belt around your hips.
- Apply graded caudal mobilizations by using a rocking motion with your body.
- Adjust the amount of hip flexion, rotation, and adduction to find the optimal position for mobilization.
- Apply large-amplitude oscillations out of resistance (grade II) or into resistance (grade III), or small amplitude into resistance (grade IV).
- A sustained caudal glide while passively applying pain free flexion and/or internal rotation can be helpful.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online: https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Hip Quadrant Mobilization

Patient Position:
Supine, hip flexed to 90° and knee allowed to fully flex.

Therapists Instructions:
• Interlock fingers of both hands and cup the knee.
• Maintain balance with your more distal knee on plinth.
• Lean body against patient’s lateral femur; chin by your hands.
• Adduct the flexed knee until ilium begins to raise.

Directional Options:
1) Mobilize into further adduction; perform in various degrees of increased hip flexion.
2) Mobilize with downward pressure through the knee in line with femur.
3) Mobilize using an arcing motion of combined flexion and adduction.
   • Apply large-amplitude oscillations out of resistance (grade II) or into resistance (grade III), or small amplitude into resistance (grade IV).
4) The motion should be pain free.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
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**Hip Anterior-Posterior Glides Progression**

**Patient Position:**
Supine, both legs resting straight on the plinth.

**Therapists Instructions:**
- Flex patients hip to resistance.
- If unable to get hip to 90° of flexion, cross mobilization leg over the other leg and rest the foot on the plinth.
- Standing on the contralateral side of the patient, grasp patient’s knee with both hands.
- Place your body on your hands at about the level of your xiphoid process.
- Apply AP graded mobilization force by using your body.
- After a bout of mobilization, take up more hip flexion as available.

**Directional Options:**
1. If the patient experiences “pinching” in the hip or groin, decrease the adduction.
2. If pinching persists, place the involved side foot on the opposite shin.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

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Hip Posterior-Anterior Glides

Patient Position:
Prone, both legs resting in neutral on the plinth.

Therapist instructions:
- Place your flat hand on the proximal thigh, just under the gluteal fold while the other hand is supporting the distal thigh, just proximal to the knee. (You may also use a belt over your shoulder to aid in supporting the distal thigh).
- If able, flex the knee to 90°, and support with your arm.
- Lock both of your elbows into extension, slightly flex your knees and keep your spine straight.
- Extend your knee to get the patient’s hip to extend to the point of resistance.
- Do not allow the pelvis to raise off the plinth.
- With the thigh supported, apply a posterior-anterior graded mobilization force through your proximal hand into the hip. Make sure to keep your elbow locked and use your body as the force.
- You can add various amounts of ABD/ADD, and IR/ER per patient limitations.
- Apply large-amplitude oscillations out of resistance (grade II) or into resistance (grade III), or small amplitude into resistance (grade IV).

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
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Hip Posterior-Anterior Glides on Figure Four Position

Patient Position:
Prone, with hip resting in various degrees of flexion, abduction and external rotation.

Therapist Instructions:
• Place both hands over posterior proximal femur, distal to hip joint.
• Position yourself directly over hip, elbows locked.
• Apply internal rotation or external rotation to the soft tissues to localize the stretch in the anterior capsule.
• Use your body to apply graded mobilizations to the hip joint. Direction of force is posterior to anterior with a slight medial inclination.
• Vary the direction of force based on stiffness and patient response.
• May use pillow under patient’s trunk to decrease the amount of abduction needed.
• Apply large-amplitude oscillations out of resistance (grade II) or into resistance (grade III), or small amplitude into resistance (grade IV).

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online: https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Hip Long Axis Distraction Mobilization/Manipulation

Patient Position:
Supine, both legs resting on the plinth. In order to prevent the patient from sliding you can place the contralateral heel in the face plate or lift their shirt to get skin traction.

Therapist Instructions:
- Stand on the ipsilateral side at the foot of the plinth.
- With both hands, grasp patient’s distal tibia, just proximal to the malleoli.
- Lift the leg into about 30° hip flex, slight abduction and slight external rotation.
- Let the knee fall into fully extension.
- Apply a long axis distraction force by completely extending your elbows and leaning back with your body weight.
- Using your body weight distract to resistance and watch for the pelvis to drop with each weight shift.
- You can add varying amounts of hip IE/ER, or ABD/ADD to achieve the desired effect of mobilization.
- When desired motion and tension achieved, you may either apply graded long axis mobilization, or a high velocity low amplitude thrust in a long axis direction.

A Video of This Procedure Can Be Viewed Online: https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Hip Extension Mobilization

Patient Position:
Prone towards the edge of the plinth, both legs on plinth.

Therapist Instructions:
- Standing on the ipsilateral side, place proximal hand on pelvis/buttocks.
- Distal hand holds anterior distal thigh, just proximal to the knee.
- Lift the thigh off the table into resistance of hip extension while holding the pelvis down on the plinth with the proximal hand.
- Lock the elbow of the distal arm and use your body to impart a graded mobilization force into hip extension.
- Be careful to monitor the lumbar spine to insure there is no lumbar motion while mobilizing the hip. A pillow may be placed under the patient’s abdomen to stabilize the lumbar spine.
- Apply large-amplitude oscillations out of resistance (grade II) or into resistance (grade III), or small amplitude into resistance (grade IV).

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
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Hip Medial Glides in Side-lying

Patient Position:
Side-lying with treatment hip up.

Therapist Instructions:
• This is a 2 person technique.
• One clinician grasps the patient’s top leg just proximal to the ankle, abducts the hip about 30°, neutral rotation, in line with the trunk. Any of these motions may be adjusted as required to address restriction.
• Lean back and use body weight to add a distraction force.
• The other clinician is standing on the posterior side of the patient, near the hip. Place both hands on the proximal femur, elbows locked and impart a medial directed mobilization force by using trunk movement.
• Ensure patient is feeling force a stretch in the medial groin, adjust as needed.
• Apply large-amplitude oscillations out of resistance (grade II) or into resistance (grade III), or small amplitude into resistance (grade IV).

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
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Iliopsoas/Rectus Femoris/TFL/IT Band Stretch: Supine

Patient Position:
Sitting on the edge of the plinth.

Therapist Instructions:
• Have patient flex one hip, hold the knee, then you help ease patient into supine position, lumbar spine stabilized against the plinth.
• Bring the treating lower extremity into extension while maintaining pressure against the patient’s ASIS.
• Place a hand over the distal femur and guide the hip slowly into extension until the restrictive barrier is engaged. Either sustain a stretch or use a contract-relax technique to increase hip extension.
• Do not allow hip abduction, adduction, or internal / external rotation.
• Reassess symptoms and impairments after stretching.

To add or stretch Rectus Femoris:
• Use your foot to induce knee flexion and engage the restrictive barrier.
• Either sustain a stretch or use a contract-relax technique to increase knee flexion.

To add or stretch TFL/ IT Band
• While maintaining stabilizing pressure over the patient’s ASIS, induce tibial adduction & internal rotation and hip adduction and external rotation until a stretch is felt over the TFL or Iliotibial Band.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
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Rectus Femoris Stretch Prone

Patient Position:
Prone, towards the edge of the plinth.

Therapist Instructions:
- Stabilize the patient’s pelvis by applying pressure over the ischial tuberosity.
- Flex the patient’s knee until initial stretch is felt.
- Use either a sustained stretch or contract-relax technique.
- Reassess symptoms and impairments after stretching.

Caution:
- If the patient experiences any numbness, tingling, or thigh pain with this stretch, consider changing to an “on/off” type of stretch.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Medial and Lateral Hamstring Stretch

**Patient Position:**
Supine, knees extended.

**Therapist Instructions:**
- While keeping the patient’s hip flexed to 90°, passively extend the knee with femoral internal rotation (for lateral hamstrings) or external rotation (for medial hamstrings).
- If symptoms are felt behind or distal to the knee, this may be due to neurodynamic impairments. If so, this may respond best to on/off stretching instead of static stretching.
- Can add hold relax to increase range.
- Reassess symptoms and impairments after stretching.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

**A Video of This Procedure Can Be Viewed Online:**
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Piriformis Stretch Below 90°

Patient Position:
Supine

Therapist Instructions:
• Position the lower extremity with the hip in a position of flexion, adduction, internal rotation with the patient’s foot stabilized on the opposite side of the opposite lower extremity if possible.
• Manually stabilize the ipsilateral innominate with one hand and use the other hand to impart more adduction/internal rotation.
• Progress the technique by adding more adduction/internal rotation.
• Once the restrictive barrier is engaged, use a sustained stretch or contract-relax technique.
• Reassess symptoms and impairments after stretching.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Piriformis Stretch Above 90°

Patient Position:
Supine

Therapist Instructions:
- Externally rotate and flex the hip.
- Add to the stretch by adducting the hip toward the opposite shoulder.
- Once the restrictive barrier is engaged, use a sustained stretch or contract-relax technique.
- Reassess symptoms and impairments after stretching.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Lumbo-Pelvic Techniques
Lumbar Neutral “Gapping” Manipulation

Patient Position:
Side lying, painful or treatment side up.

Therapists Instructions:
• Flex the top leg until you first begin to palpate motion at segmental interspace; place the patient’s foot in the popliteal fossa as shown.
• Grasp the patient’s bottom arm and shoulder and induce sidebending & rotation until you begin to palpate motion at the segmental interspace.
• Have patient cross their arms by holding their own elbows.
• Reach through patient’s arms.
• Gently grasp patient’s side using broad hand contact and rotate the thorax backward.
• While maintaining your setup log roll the patient towards you.
• Use your lower forearm and body to rotate the pelvis in opposite direction (towards the floor).
• Use your body to take up the slack and induce a high velocity low amplitude (HVLA) thrust in anterior direction.
• Reassess symptoms and impairments.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Lumbar Extension Manipulation

Patient Position:
Side lying, painful or treatment side up.

Therapists Instructions:
• Grasp the trunk and translate towards you until you localize the extension to the selected motion segment.
• Rotate the patient’s thorax backwards to the until you begin to palpate motion at the motion segment.
• Gently grasp the patient’s trunk using a broad hand contact and rotate the trunk backward.
• While maintaining the orientation log roll the patient toward you.
• Use a broad forearm and body contact to rotate the patient’s pelvis in anterior and cephalad direction.
• With your body induce a high velocity, low amplitude thrust in anterior and cephalad direction.
• Reassess symptoms and impairments.

Tips:
• Place the patient’s right foot in the popliteal fossa.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Lumbar Alternate Neutral Gapping Manipulation

**Patient Position:**
Side lying, painful or treatment side up.

**Therapists Instructions:**
- Straighten the bottom leg until it is in-line with the spine.
- Slightly flex the top leg so it rests in front of the lower leg, supported on the plinth.
- Grasp the patient’s bottom arm and shoulder and induce slight lumbar sidebending by gentle pulling the patient’s arm in a cephalad direction.
- Rotate thoracic spine backwards.
- Rotate pelvis anteriorly to take up slack.
- While maintaining your setup log roll the patient towards you.
- Use your body to induce a high velocity, low amplitude (HVLA) thrust in anterior direction.
- Reassess symptoms and impairments.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Lumbopelvic Regional Manipulation

Patient Position:
Supine, hands clasped behind and supporting cervical spine.

Therapists Instructions:
- Stand on the opposite side of treatment.
- Translate the pelvis towards you to maximally side-bend the patient’s lower extremities and trunk away from you.
- Thread your top arm through the patient’s arms. Rest your fingertips on the patient’s sternum or the table. Stand upright and rotate the trunk (maintain the side-bending).
- Contact the patient’s opposite ASIS (treatment side) with your hand.
- Grasp the top shoulder and scapula with your top hand and rotate the trunk to the while maintaining the side-bending.
- Allow the ASIS to elevate a few inches off of the plinth, then take out the slack towards the plinth, and perform a high velocity low amplitude (HVLA) thrust in an anterior to posterior direction.
- Reassess symptoms and impairments.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Lumbopelvic Regional Manipulation (alternate method)

**Patient Position:**
Supine, hands clasped behind and supporting cervical spine.

**Therapists Instructions:**
- Stand on the opposite side of treatment.
- Translate the pelvis towards you to maximally side-bend the patient’s lower extremities and trunk away from you.
- Without losing the sidebending, lift and rotate the trunk so the patient rests on their bottom shoulder.
- Contact the patient’s opposite ASIS (treatment side) with your hand.
- Grasp the top shoulder and scapula with your top hand and rotate the trunk to the while maintaining the side-bending.
- Allow the ASIS to elevate a few inches off of the plinth, then take out the slack towards the plinth, and perform a high velocity low amplitude (HVLA) thrust in an anterior to posterior direction.
- Reassess symptoms and impairments.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Lumbar Central Posterior/Anterior (PA) Graded Mobilization

Patient Position:
Prone, fully resting on plinth.

Therapist Instructions:
- Place the ulnar aspect of your hypothenar eminence (just distal to your pisiform) over the spinous process (SP).
- Support your hand with your opposite hand.
- Keep your elbows stiff and use your body to deliver an oscillatory graded mobilization force to the vertebra.
- Reassess symptoms and impairments.

Tips:
- Your chest should be directly over your hands to ensure a direct PA force.
- For maximal patient comfort, progressively oscillate in and out of the desired depth of mobilization.
- Optimize the intervention by adjusting the direction of the mobilization force or by changing the patient’s position.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Lumbar Unilateral Posterior/Anterior (PA) Graded Mobilization

Patient Position:
Prone, fully resting on plinth.

Therapist Instructions:
• Stand on the treatment side.
• Place the thumb pad over the articular pillar of the segment to be treated. (Not over transverse process).
• Place the thumb pad of your other hand on top of the first one (stack thumbs).
• Keep your elbows stiff and use your body to deliver an oscillatory graded mobilization force to the vertebra.
• Reassess symptoms and impairments.

Tips:
• Your chest should be directly over your hands to ensure a direct PA force.
• For maximal patient comfort, progressively oscillate in and out of the desired depth of mobilization.
• Optimize the intervention by adjusting the direction of the mobilization force or by changing the patient position.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Cervico-Thoracic Techniques
Supine Extension Manipulation of the Upper Thorax (T1-T3)

Description:
A high-velocity, end-range, A-P force through the elbows to the cervicothoracic junction on the upper thoracic spine in a supine bridged position.

Patient Position:
Patient supine with feet on the table. The patient’s right arm is crossed over the left (a towel on the sternum should be used to create firm contact between the arms and the sternum).

Therapist Instructions:
- The therapist rolls the patient towards him & using the thenar eminence achieves a skin lock fulcrum on the T1 segment between the spinous and transverse process on the right.
- The patient is rolled over onto the fulcrum created by the therapist’s hand.
- An anterior-posterior thrust is directed toward the fulcrum.
- Optional- the patient can be asked to bridge up just prior to the thrust, which helps localize the force.

Precautions:
This should be comfortable for the patient. The patient should feel tension at the cervicothoracic junction and not in the posterior shoulder region.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Seated Mid Thoracic Distraction Thrust

Description:
A high-velocity, mid-range, traction force to the midthoracic spine on the lower thoracic spine in a sitting position, in slight flexion.

Patient Position:
Seated with back near edge of the table, resting against the therapist.

Therapist Instructions:
- Have patient grasp opposite shoulders, ensuring that one of the patient’s arms lies over the other arm in a stacked fashion (arms are not crossed). Or alternately have the patient grasp the opposite shoulder with one hand with the client’s arm relaxed by their side. In this case, your arm will come under the patient’s axilla on that side when using both hands to grasp the single elbow.
- Fulcrum the patient’s thoracic spine into flexion by grasping the patient’s elbows and translating posteriorly, gently pulling patient into your chest.
- Engage the barrier using final minor adjustments.
- Apply thrust by quickly extending your knees, while lifting the patient vertically, emphasizing flexion and distraction of the thoracic spine.

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Seated CT Junction Thrust

Description:
A high-velocity, end-range, traction force to the cervicothoracic junction on the upper thoracic spine in a sitting position with the patient’s hands interlaced behind their head.

Patient Position:
Seated with back near edge of the table, resting against the therapist.

Therapist Instructions:
• Your chest should be level with patient’s CT junction.
• With patient seated, have them interlock their fingers at the base of their neck, protecting their cervical spine.
• Weave your arms through the patient’s arms until your hands are resting slightly below the patient’s hands (Patient’s elbows should be relaxed. Helps to tell patient, “drop and relax your elbows”).
• Support patient with compression of your forearms anterior and slightly medial to the glenohumeral joint while horizontally adducting your arms.
• Lean patient back until C-T junction is perpendicular to the floor.
• Engage the barrier using final minor adjustments.
• Quickly extend your knees, lifting the patient vertically producing a distraction thrust at the C-T Junction.
• Care should be taken to avoid forcing the patient’s cervical spine into flexion.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Mid Thoracic Extension/Closing Manipulation

Patient Position:
Prone with head turned towards the clinician

Therapist Instruction:
- Stand on the patient’s side.
- At the treatment level, place the hypothenar eminence, or pisiform side of your hand on transverse process on the opposite side of the spine, create a skin lock and rotate your hand cephalad.
- At same spinal level, place the hypothenar eminence, or pisiform side of your hand on transverse process on the same side of the spine, create a skin lock and rotate your hand caudally.
- Instruct patient to take a deep breath and slowly exhale.
- Continue to rotate hands as the patient exhales and keep PA pressure through your hands.
- Perform PA thrust at end of exhalation

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Supine Mid Thoracic Flexion

Description:
A high-velocity, end-range, anterior-posterior force through the elbows to the middle thoracic spine on the lower thoracic spine in a supine position with patient’s arms crossed.

Patient Position:
Supine on the table, close to the therapist, helps to have table in a lowered position.

Therapist Instructions:
- Have patient grasp their shoulders; ensure that forearms are stacked and not crossed. May also place a rolled towel between patient’s arms and sternum, especially for very thin or flexible patients.
- Roll the patient towards you and with your fulcrum hand locate the transverse process at the segment below the level you are targeting. Now place the clenched palm of your hand just medial to the transverse process and apply a skin lock to that area.
- Compress patient’s elbows through your sternum to control the trunk (females often position the patient’s elbows in the solar plexus vs the chest/sternum area).
- Engage the barrier using final minor adjustments.
- Perform high velocity, low amplitude thrust over the top of your hand in an anterior-to-posterior direction.
- Optional: Have patient flex their knees, resting feet on table. May also flex cervical spine by having pillow or raise table’s headpiece.

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Cervical Spine Unilateral PA

Description:
A low-velocity, mid to end-range, posterior-anterior oscillatory force through the articular pillar of the mid cervical spine on the lower cervical spine in a prone position with the cervical spine in slight flexion.

Patient Position:
Prone, face down in slight cervical flexion with the face resting in the hole of the faceplate.

Therapist Instructions:
• Stand centered at the head of patient.
• Thumbs positioned over articular pillar/facet joint to be treated (it can be helpful to place thumbs on the spinous process, then slide just lateral to the spinous process for optimal positioning).
• Use fingers on lateral paracervical muscles to help stabilize the neck.
• Lean forward over patient with arms straight and shoulders over thumbs.
• Gently lift up with both hands to take up soft tissue slack in the cervical spine.
• PA mobilization using trunk movement not your hands. Keep arms perpendicular to patient.
• Mobilization grades used depending on patient’s pain and stiffness symptoms at assessment.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Cervical Spine Hold–Relax Technique (flexion/opening)

Description (right side):
A patient generated right side-bending force to the mid cervical spine on the lower cervical spine in supine with flexion and right lateral translation.

Patient Position:
Supine, head resting on pillow to bias into cervical flexion.

Therapist Instructions:
- Sit or stand at head of patient.
- Place hand using radial/palmar aspect of the index finger MCP on superior articular pillar on the side you’re treating.
- Opposite hand controls and supports head.
- Bring cervical spine into flexion with both hands until motion is detected at the targeted motion segment.
- Apply lateral translation force with index finger MCP, guiding head with supporting hand.
- Instruct patient to provide a gentle isometric contraction by looking towards the supporting hand (away from the barrier).
- Patients holds contraction for 5 seconds, then instruct them to relax.
- After relaxation, re-engage new barrier using same translation technique.
- Repeat the techniques 3-5 times, then reassess.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Cervical Spine Hold–Relax Technique (extension/closing)

Description (right side):
A patient generated left side-bending force to the mid cervical spine on the lower cervical spine in supine with extension and right side bending.

Patient Position:
Supine, head resting table, to slightly bias into extension.

Therapist Instructions:
• Sit or stand at head of patient. Place patient in slight upper cervical flexion by applying a “chin tuck”.
• Place hand using radial/palmar aspect of the index finger MCP on superior articular pillar on the side you’re treating.
• Opposite hand controls and supports head.
• Bring cervical spine into extension at the targeted motion segment by using the index finger’s MCP and applying a gentle PA force in an anterior/oblique direction towards the contralateral T1.
• Support and guide the head with opposite hand.
• Instruct patient to provide a gentle isometric contraction by looking towards the supporting hand (away from the barrier).
• Patients holds contraction for 5 seconds, then instruct them to relax.
• After relaxation, re-engage new barrier using same translation technique.
• Repeat the techniques 3-5 times, then reassess.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Cervical Spine Extension/Closing Thrust (C2-C7)

Description:
A high-velocity mid-range inferior-medial force to the left articular pillar of the mid cervical spine on the lower cervical spine in supine, with slight extension, left sidebending and right rotation.

Patient Position:
Supine, head resting table, to slightly bias into extension.

Therapist Instructions:
- Sit or stand at head of patient. Place patient in slight upper cervical flexion by applying a chin tuck.
- Place hand using radial/palmar aspect of the index finger MCP on superior articular pillar on the side you’re treating.
- Opposite hand controls and supports head.
- Bring cervical spine into left sidebending, right rotation and slight extension at the targeted motion segment by using the index finger’s MCP and applying a gentle PA force in an anterior/oblique direction towards T1.
- Support guiding head with opposite hand.
- Engage the barrier using final minor adjustments.
- Apply a gentle high velocity low amplitude thrust in the facet plane, i.e. a slight downward direction towards T1.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Supine Cervical Upslope Manipulation (C2-T1)

Description:
A high-velocity mid-range right rotational force to the mid cervical spine on the lower cervical spine in supine, with right rotation and left sidebending.

Patient Position:
Supine with pillow supporting the head and neck.

Therapist Instructions:
- Place left 2nd MCP on the articular pillar and with slight rotation create a soft tissue lock. Gently induce pure rotation (no sidebending) until the first perception of resistance (not end range).
- Introduce a very slight left sidebending movement at the segment.
- Apply “final minor adjustments” to engage the barrier.
- Apply a gentle thrust accentuating right rotation in the plane of gliding the inferior articulating process (IAP) of the identified segment anteriorly and superiorly on the vertebra.

Precautions:
This should be very gentle and comfortable for the patient. The therapist’s bottom hand should maintain contact with the pillow which prevents over rotation from occurring.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online: https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
AA Region Hold–Relax Technique

Description (right side):
A patient generated left rotational force to the upper cervical spine on the mid cervical spine in supine with full cervical flexion and end range right rotation.

Patient Position:
Supine with pillow supporting the head and neck.

Therapist Instructions:
• Stand or sit at the head of patient.
• Gently grasp the patient’s head with both hands, apply gentle chin tuck to flex upper cervical spine.
• Flex the patient’s neck and head fully to “lock” lower cervical motions from rotation.
• Apply passive rotation to the motion restriction barrier.
• Instruct patient to look or gently turn head in the opposite direction against therapist’s resistance (light isometric contraction).
• Hold contraction for 3-5 seconds, and then tell the patient to relax.
• After relaxation, re-engage the barrier.
• Repeat the techniques 3-5 times then reassess.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
OA Region Hold–Relax Technique

Description (left side):
A patient generated extension force to the occiput on the upper cervical spine in supine, with upper cervical flexion and left rotation.

Patient Position:
Supine with pillow supporting the head and neck.

Therapist Instructions:
- Stand or sit at the head of patient.
- Rest patient’s head in one hand, using wide hand grip to gently grasp and support occiput.
- With the other hand, control patient’s head at the forehead or with a cradle hold.
- Rotate upper cervical spine 20-30° to the side of treatment.
- Using a chin tuck, introduce slight upper cervical flexion to barrier.
- Instruct patient to gently look up against therapist’s resistance.
- Hold for the contraction for 3-5 seconds, and then tell the patient to relax.
- After relaxation, re-engage the barrier.
- Repeat the techniques 3-5 times then reassess.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Shoulder Techniques
Glenohumeral Internal Rotation (Grade I-IV)

**Patient Position:**
Supine, shoulder abducted to 90°, humerus supported on table with pillow supporting the head and neck.

**Therapist Instructions:**

- **Proximal hand:** Grasp the distal humerus; lay forearm across anterior shoulder for stabilization, add long axis distraction.
- **Distal hand:** Grasp wrist and hold in a neutral position.
- **Bring patient’s arm into internal rotation to find resistance.** Apply graded mobilizations (~10°) within resistance as needed for appropriate mobilization grade.
- **May be performed in various degrees of abduction based on patient symptoms and response.**

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Glenohumeral External Rotation (Grade I-IV)

**Patient Position:**
Supine, shoulder abducted to 90°, humerus supported on table with pillow supporting the head and neck.

**Therapist Instructions:**
- Proximal hand: Grasp the distal humerus; lay forearm across anterior shoulder for stabilization, add long axis distraction.
- Distal hand: Grasp wrist and hold in a neutral position.
- Bring patient’s arm into external rotation to find resistance. Apply graded mobilizations (~10°) within resistance as needed for appropriate mobilization grade.
- May be performed in various degrees of abduction based on patient symptoms and response.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online: https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Glenohumeral Horizontal Adduction (Grade III-IV)

Patient position:
Supine, shoulder and elbow flexed to 90° with pillow supporting the head and neck.

Therapist Instructions:
• Proximal hand: Place the heel of one hand under the lateral border of scapula for stabilization.
• Distal hand: Grasp wrist and hold in a neutral position.
• Tuck patient’s elbow into your axilla.
• Graded mobilizations into Horizontal Adduction are applied:
  1. Along humeral shaft in an anterior to posterior direction.
  2. In a direction toward the opposite shoulder.
  3. Or as a combination of the two vectors listed above.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
**Glenohumeral Caudal Glides (Grade II-IV) with Abduction Progression**

**Patient Position:**
Supine, shoulder off plinth in abduction, elbow flexed to 90°, head and neck supported with pillow.

**Therapist Instructions:**
- Distal hand: Grasp the patient’s distal humerus and elbow; hold patient’s forearm against yours, apply long axis distraction by weight shifting away from patient.
- Proximal hand: 1st web space or heel of hand placed against head of humerus (adjacent/distal to the acromion).
- Apply a skin-lock by slightly twisting/rotating both hands toward the pillow.
- Graded mobilization is applied through your mobilizing hand to glide the humeral head caudally.
- Resting your mobilization hand on your thigh and weight shifting in a caudal direction may make this easier for the therapist.
- Elbow may be held stationary, or carried on line with humerus or further distally—depending on irritability.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Anterior-Posterior (AP) Glides (Grade III-IV)

**Patient position:**
Supine, shoulder off plinth in abduction, elbow flexed to 90°, head and neck resting on pillow.

**Therapist Instructions:**
- Distal hand: Grasp the patient’s distal humerus and elbow; hold patient’s forearm against yours, apply long axis distraction by weight shifting away from patient.
- Proximal hand: Heel of hand placed against anterior humeral head with your elbow extended and locked if possible.
- Graded AP mobilization is applied through your mobilizing arm against the humeral head.
- May be performed in various degrees of GH ABD and HF based on patient symptoms and response.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Acrioniomoclavicular (AC) Glides
Anterior–Posterior (AP) Glides

**Patient position:**
Supine, arm resting on plinth at patient’s side, head and neck supported with pillow.

**Therapist Instructions:**
- Place the tips of both thumbs on the anterior surface of the clavicle adjacent to the AC joint; spread fingers out for stability.
- Position forearms in line with the AP movement at the AC joint.
- Graded oscillatory mobilization is applied by your arms, acting through stable thumbs.
- Pad of your outer thumb should feel the joint motion (feel for the stationary acromion process).
- Progress to using the palm of your hand on the patient’s clavicle as patient comfort permits.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Acromioclavicular Rotation (Grade II-IV)

Patient Position:
Supine, arm resting on plinth at patient’s side, head and neck supported with pillow.

Therapist Instructions:
• Stand near the patient’s shoulder, facing towards the clavicle.
• Gently grip the mid clavicle using your thumbs on the inferior edge and finger tips superiorly.
• Apply a gentle mobilization force using a rocking or “wiggling” motion through repetitive wrist flexion and extension.
• Works as a nice easing technique following direct AC and/or SC joint mobilizations.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Sternoclavicular (SC) Inferior Glides

**Patient Position:**
Supine, arm resting on plinth at patient’s side, head and neck supported with pillow.

**Therapist Instructions:**
- Stand at the head of the patient over the treatment side/shoulder.
- Place the tips of both thumbs on the superior surface of the clavicle adjacent/lateral to the manubrium; spread fingers out for stability.
- Position forearms in line with the inferior movement at the SC joint.
- Graded oscillatory mobilization is applied by your arms, acting through stable thumbs.
- Pad of your medial thumb should feel the joint motion.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online: https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Scapulothoracic Manipulation, Multiple Directions

Patient Position:
Side lying, treatment side up.

Therapist Instructions:
- Stand posterior to patient.
- One hand supports glenohumeral joint and cups anterior superior scapula.
- Other hand holds inferior angle and medial border of the scapula.
- Both hands move together to supply smooth motion into restricted and/or painful motion.
- Apply high velocity low amplitude (HVLA) thrust manipulation into desired direction(s) of motion restriction.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Elbow, Wrist & Hand Techniques
Elbow Flexion Graded Mobilization (Neutral/Abduction/Adduction)

Patient Position:
Supine, forearm supinated, elbow flexed, head and neck resting on pillow.

Therapist Instructions:
- Stand facing patient’s elbow.
- Proximal hand: stabilize arm at posterior aspect distal humerus.
- Distal hand: grasp wrist and hold in a neutral position.
- Bring elbow into flexion to desired amount of resistance.
- Perform graded mobilizations using large amplitudes of 20-30° (Grade III) or small amplitudes of 3-4° (Grade IV).

Into Abduction:
- Patient’s forearm in pronation.
- Mobilize with inside arm while stabilizing humerus with your outside hand.
- Apply graded mobilization at end range flexion, adding abduction by shifting your forearm position and pushing the patient’s hand away from body.

Into Adduction:
- Patient’s forearm in supination.
- Mobilize with outer arm.
- Apply graded mobilization at end range flexion, adding adduction by pushing the patient’s hand toward the body.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Elbow Extension Graded Mobilization (Neutral/Abduction/Adduction)

Patient Position:
Supine, elbow flexed, head and neck resting on pillow.

Therapist Instructions:
- Stand at patient’s shoulder, facing the elbow.
- Proximal arm/hand: Stabilize anterior shoulder with forearm and distal humerus with hand.
- Distal hand: grasp wrist and hold in a neutral position.
- Bring elbow into extension to desired amount of resistance.
- Perform graded mobilizations using large amplitudes of 20-30° (Grade III) or small amplitudes of 3-4° (Grade IV).

Into Abduction
- Patient’s forearm in supination.
- Apply graded mobilization at end range extension, adding abduction (valgus) force by pulling forearm away from patient’s body; use thigh for further stabilization.

Into Adduction
- Patient’s forearm in neutral.
- Apply graded mobilization at end range extension, adding adduction (varus) force towards the patient’s body using a vector angle as shown.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Elbow Longitudinal Distraction in Flexion Graded Mobilization

**Patient Position:**
Supine, forearm supinated, elbow flexed, head and neck resting on pillow.

**Therapist Instructions:**
- Stand facing patient’s elbow.
- Distal hand holds the wrist to control movement.
- Proximal forearm placed in the patient’s cubital fossa.
- Simultaneously pronate your forearm and apply a longitudinal distraction force.
- Apply graded mobilization into elbow flexion.
- Distraction force caused by flexing elbow over forearm to facilitate flexion.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Humeral–Radial Anterior–Posterior/Posterior–Anterior (AP/PA) Graded Mobilization

**Patient Position:**
Supine, forearm supinated, elbow slightly flexed, head and neck resting on pillow.

**Therapist Instructions:**
- Stand facing patient’s elbow.
- With inside hand, gently grasp and support elbow joint.
- With outside hand, find patients radial head.
- Gently grasp radial head anteriorly with your thumb, and posteriorly with your index and middle fingers.
- Use your finger and thumb pads for patient comfort.
- Apply either an AP or PA graded mobilization force through the radial head.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Forearm Pronation/Supination
Graded Mobilization

**Patient Position:**
Supine, forearm neutral pronation/supination, elbow flexed to 90°, head and neck resting on pillow.

**Therapist Instructions:**
- Stand facing the patient’s elbow.
- Take up available range of forearm pronation.
- One hand grasps the ulna distally and crosses/blocks the wrist.
- Other hand grasps the radius distally and crossed/blocks the wrist.
- In this position, your thumbs should be pointing in opposite directions along the lines of the radius and ulna.
- Raise your elbow up so your forearms are perpendicular to the patient’s forearm.
- Apply graded mobilization force into pronation using equal movement with both of your arms.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Radial Head Posterior–Anterior (PA) Manipulation

Patient Position:
Standing, arm resting at the side in relaxed position.

Therapist Instructions:
- Stand behind patient on treatment side.
- Proximal hand grasps the elbow, thumb positioned over posterior aspect of radial head.
- Distal hand supports the wrist.
- Bring the arm into full pronation and slight wrist flexion.
- Extend the elbow to within 5-10° of the motion barrier.
- Synchronized high velocity low amplitude (HVLA) thrust manipulation: bring arm into full extension, apply anterior force to radial head.
- Avoid elbow hyperextension.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online: https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Elbow Mobilization with Movement (treating lateral epicondylalgia)

**Patient position:**
Patient is supine, elbow in slight flexion, forearm supinated or pronated, holding ball/towel/etc. (Patient’s irritating activity defines position).

**Therapist Instructions:**
- Proximal hand at the distal lateral humerus.
- Distal hand at the proximal medial ulna.
- Mobilization forearm into lateral glide direction using distal hand; provide equal and opposite force with proximal hand on humerus.
- You will have to adjust vectors according to patient’s irritability.
- Find the patient’s most pain free position.
- When vectors are found, apply and sustain the force while patient performing pain free movement (ball squeeze, wrist extension, resisted extension, etc).
- Hold the force and have patient repeat the pain free activity for 10 repetitions.
- After repetitions complete, patient stops activity and you release mobilization force.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online: https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Radiocarpal (RC) Anterior–Posterior (AP) and Posterior–Anterior (PA) Glides (Grade II-IV)

Patient Position:
Supine position, elbow in 90° flexion, forearm in neutral pronation/supination.

Therapist Instructions for AP Mobilization:
- Proximal hand: stabilize posterior DRUJ with the thenar eminence, fingers wrapped around radius.
- Distal hand: Grasp the patient’s palm, establish firm contact on anterior proximal carpal row with heel of hand.
- Mobilize proximal carpal row posteriorly, keeping wrist in neutral flexion-extension.
- Stabilize distal radioulnar joint (DRUJ) with proximal hand, applying an equal and opposite counterforce.

Therapist Instructions for PA Mobilization:
- Proximal hand: stabilize anterior DRUJ with heel of hand, fingers point proximally (or wrap radius).
- Distal hand: Grasp posterior hand, establish firm contact on posterior proximal carpal row with heel of hand.
- Mobilize proximal carpal row anteriorly, keeping wrist in neutral flexion-extension.
- Stabilize distal radioulnar joint (DRUJ) with proximal hand, applying an equal and opposite counterforce.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Radiocarpal (RC) Radial and Ulnar Glides
(Grade II-IV)

Patient Position:
Supine position, elbow extended with wrist off table, thumb down (internally rotate the humerus).

Therapist Instructions for Radial Glide Mobilization:
- Proximal hand: grip around distal end of radius and ulna, knuckles resting on treatment table.
- Distal hand: Grasp proximal carpal row with first web space placed around the triquetrum.
- Add slight longitudinal distraction.
- Mobilize proximal carpal row laterally (toward floor) using the arm and shoulder of distal hand.

Therapist Instructions for Ulnar Glide Mobilization:
- Change patient arm position so that thumb is now pointing up (externally rotate the humerus).
- Proximal hand: grip around distal radius and ulna, knuckles resting on treatment table.
- Distal hand: Grasp proximal carpal row with first web space placed around the scaphoid.
- Add slight longitudinal distraction.
- Mobilize proximal carpal row medially (toward floor) by shifting your body weight toward the floor, through your rigid upper extremity.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Metacarpalphalangeal (MCP), Interphalangeal (IP) Anterior–Posterior/Posterior–Anterior (AP/PA) Glides (Grade II-IV)

**Patient Position:**  
Seated or supine with forearm resting on treatment table.

**Therapist Instructions:**
- With one hand (stabilization hand), firmly grasp the distal end of the metacarpal.
- With the other hand (mobilization hand), firmly grasp the base of the proximal phalanx.
- With movement hand, apply an AP or PA graded mobilization force on the proximal phalanx.
- Use this same technique as you progress to the MCP and IP joints of all fingers as needed.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:  
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Scapholunate Radiocarpal Manipulation (Carpal Drop)

**Patient Position:**
Standing or seated, arm relaxed at the side.

**Therapist Instructions:**
- Grasp the patient’s wrist, pronate the forearm.
- Localize the scaphoid and the lunate, and hold each firmly with your thumbs.
- Ensure your hands are not crossing the patient’s wrist to allow freedom of movement at the wrist (radiocarpal joint).
- Keeping your thumbs on the scaphoid and lunate, grasp the carpals with your hands.
- Ensure the scaphoid and lunate, are stabilized/protected from individual movement (move the entire wrist as a unit).
- Find end range of wrist extension.
- Fine tune your movement to ensure manipulation force is through the radiocarpal joint.
- Take up the slack to end range, and apply a high velocity low amplitude (HVLA) thrust towards the floor.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
1st Carpometacarpal (CMC) Anterior–Posterior/Posterior–Anterior (AP/PA) Graded Mobilization (Grade II-IV)

Patient Position:
Seated or supine with forearm resting on treatment table.

Therapist Instructions:
• With one hand (stabilization hand), firmly grasp the trapezium.
• With the other hand (mobilization hand), firmly grasp the base of the proximal phalanx of the 1st metacarpal.
• With movement hand, apply an AP or PA graded mobilization force on the 1st metacarpal.
• Use this same technique as you progress to the MCP and IP joints of thumb as needed.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Intercarpal Horizontal Extension and Flexion Mobilization

Patient Position:
Supine position, elbow in 90° flexion, forearm in neutral.

Therapist Instructions for Hz Extension Mobilization:
- Hold the hand from the back with thumb tips positioned centrally over the posterior carpals and the fingers positioned around the pisiform and CMC joint.
- Using both thumbs as a fulcrum, pull posteriorly on the medial and lateral margins of the carpal rows, creating an anterior force at the fulcrum point.
- Variations: May localize the fulcrum point to each carpal bone for treatment specificity.

Therapist Instructions for Hz Flexion Mobilization:
- Hold and cup the patient’s hand from the posterior side with your mobilization hand.
- With your other hand, place your thumb vertically across the carpals and carpal tunnel (Between thenar and hypothenar eminences).
- With your mobilization hand, mobilize in a PA direction around your stable thumb.
- Variations: May localize the fulcrum point to each carpal bone for treatment specificity.

Adjust grade, joint angle, and/or body position as symptoms dictate to maximize outcomes based on changes in comparable sing(s).

A Video of This Procedure Can Be Viewed Online:
https://www.evidenceinmotion.com/ebookviewer.aspx?prev=1
Compendium of Techniques
Mobilization/Manipulation
Compendium of Techniques

In 2007 a task force was commissioned by the American Academy of Orthopaedic and Manual Physical Therapists to develop a model for standardizing the terminology used to describe manipulation interventions. The model simply describes the rate of force application, rather than using controversial and politically charged words such as “manipulation” or “mobilization.” This model was designed to be used in clinical trials so techniques could be described with more precision and universal understanding, the descriptions can also be utilized in clinical documentation such as electronic medical records. We have created a compendium of commonly used manual therapy interventions here. The wording could be altered based on specific modifications of the technique. The point is it clearly articulates to the reader what was done to the patient.

The characteristics proposed by Mintken et al1,2 to describe manipulative techniques include:

1. Rate of force
2. Location in range
3. Direction of force
4. Target of force
5. Relative structural movement
6. Patient position

Talocrural (TC) AP Mobilization in Supine
Low-velocity, mid to end range, anterior to posterior oscillatory force to the talus on the distal tibiofibular joint in a supine position, with varying amounts of ankle dorsiflexion.

Talocrural (TC) PA Mobilization in Prone
Low-velocity, mid to end range, posterior to anterior oscillatory force to the talus on the distal tibiofibular joint in a prone position, with varying amounts of ankle dorsiflexion.

Distal Tib-Fib PA Mobilization in Prone
Low-velocity, mid to end-range, posterior to anterior oscillatory force to the distal fibula on the tibia in a prone position, with slight ankle plantarflexion.

Distal Tib-Fib AP Mobilization in Supine
Low-velocity, mid to end-range, anterior to posterior oscillatory force to the distal fibula and/or tibia in a supine position, with slight ankle plantarflexion.

Talocrural (TC) and Subtalar (ST) Lateral Glides
Low-velocity, mid to end-range, medial to lateral oscillatory force to the medial side of the left talus (or calcaneus) on the lower leg in a left sidelying position.

Talocrural (TC) and Subtalar (ST) Medial Glides
Low-velocity, mid to end-range, lateral to medial oscillatory force to the lateral side of the right talus (or calcaneus) on the lower leg in a left sidelying position.

Rearfoot Distraction Manipulation
High-velocity, end-range, longitudinal traction force to the dorsum of the foot on the lower leg in a supine position, with ankle dorsiflexion and eversion.

Cuboid Manipulation
A high-velocity end-range dorsal-lateral force to the plantar-medial aspect of the cuboid in prone, with forefoot plantar flexion and inversion.

Ankle Dorsiflexion Mobilization with Movement (MWM)
Low-velocity, end-range, anterior to posterior sustained glide to the talus in a standing position, with active ankle dorsiflexion and knee flexion in an on/off fashion.

Metatarsal AP/PA Mobilization
Low-velocity, mid to end-range, anterior to posterior and posterior to anterior oscillatory force to the 1st metatarsal on the 2nd metatarsal in a supine position.

1st MTP Mobilization
Sustained mid to end-range distraction force to the proximal phalanx followed by a low-velocity, mid to end-range physiological flexion force to the proximal phalanx on the 1st metatarsal in a supine position.

1st MTP Manipulation
High-velocity, end-range, longitudinal traction force to the proximal phalanx on the 1st metatarsal in a supine position.
**Knee Flexion in Neutral/IR/ER**  
Low-velocity, mid to end-range, oscillatory force into tibiofemoral flexion in a supine position, with tibial internal or external rotation.

**Knee Extension Neutral/Varus/Valgus (GR II- III)**  
Low-velocity, mid-range, oscillatory force into tibiofemoral extension in a supine position, in neutral or with varus or valgus stress.

**Knee Extension Neutral/Varus/Valgus (GR IV)**  
Low-velocity, end-range, oscillatory force into tibiofemoral extension in a supine position, in neutral or with varus or valgus stress.

**Knee AP/PA Progression (Gr II-IV)**  
Low-velocity, mid to end-range, anterior to posterior or posterior to anterior oscillatory force to the tibia in a supine position, with the knee flexed to 90 degrees.

**Patellar Glides Caudal/ Cephalad (Gr II-IV)**  
Low-velocity, mid to end-range, caudal or cephalad oscillatory force to the patella on the femur in a supine position, with the knee slightly flexed.

**Patellar Glides Sideglides (Gr II-IV)**  
Low-velocity, mid to end-range, lateral to medial oscillatory force to the patella on the femur in a sidelying position, with the knee slightly flexed.

**Proximal Tib-Fib PA Glides**  
Low-velocity, mid to end-range, posterior to anterior oscillatory force to the proximal fibula on the tibia in a prone position, with slight knee flexion.

**Fibular Head Manipulation**  
High-velocity, end-range, anterior force to the head of the fibula on the tibia through end range flexion and external rotation of the knee in a supine position.

**Knee Flexion Mobilization with Movement (MWM)**  
Low-velocity, mid to end-range, sustained medial to lateral force to the proximal tibia in a prone position, with active knee flexion.

**Hip Internal Rotation in Prone Grade II-IV**  
Low-velocity, mid to end-range, oscillatory lateral force to the contralateral pelvis in prone, with the ipsilateral hip in end range internal rotation.

**Hip Internal Rotation in Supine Grade II-IV**  
Low-velocity, mid to end-range, oscillatory internal rotation force to the distal femur on the acetabulum in a supine position, with the hip flexed 90 degrees.

**Hip Internal Rotation in Supine in Extension Grade II-IV**  
Low-velocity, mid to end-range, oscillatory internal rotation to the distal femur on the acetabulum in a supine position, with the hip slightly abducted and the knee flexed 90 degrees.
Hip External Rotation Mobilization in Supine
Low-velocity, mid to end-range, oscillatory external rotation force to the distal femur on the acetabulum in a supine position, with the hip flexed 90 degrees.

Hip Caudal Glides in Supine w Belt
Low-velocity, end-range, oscillatory caudal glide to the proximal femur through a belt with the patient in a supine position, with varying degrees of hip flexion, ab/adduction and internal/external rotation.

Hip Lateral Glides in Supine w Belt
Low-velocity, end-range, oscillatory lateral glide to the proximal femur through a belt with the patient in a supine position, with varying degrees of hip flexion, ab/adduction and internal/external rotation.

Hip Anterior–Posterior Glides Progression
Low-velocity, mid-end-range, anteromedial to posterolateral oscillatory force to the femur in a supine position, with hip flexion, adduction and internal/external rotation.

Hip Posterior–Anterior Glides
Low-velocity, end-range, posterior to anterior oscillatory force to the proximal femur in a prone position in slight hip extension with knee flexed to 90 degrees.

Hip Posterior–Anterior Glides on Figure Four Position
Low-velocity, end-range, posterior to anterior oscillatory force to the proximal femur in a prone position, with hip flexion, abduction and external rotation.

Hip Long Axis Distraction Mobilization/Manipulation
High-velocity, end-range, longitudinal traction force to the lower extremity on the acetabulum in supine with slight hip flexion, abduction, and varying degrees of internal and external rotation of the lower extremity.

Hip Extension Mobilization
Low-velocity, mid to end-range oscillatory force into hip extension in a prone position with the knee flexed to 90 degrees.

Hip Medial Glides in Side-lying
Low-velocity, end-range, inferior-medial oscillatory force to the proximal femur in a sidelying position, while an assistant applies a longitudinal traction force to the hip in slight abduction.

Lumbar Neutral “Gapping” Manipulation
High-velocity, end-range, right-rotational force to the lower lumbar spine on the mid lumbar spine in a right side-lying, left thoracolumbar side-bent and rotated position.

Lumbar Extension Manipulation
High-velocity, end-range, anterior-superior force to the right pelvis on the lower lumbar spine in a right side-lying, left thoracolumbar side-bent and rotated position.

Lumbopelvic Regional Manipulation
High-velocity, end-range, posterior-inferior force to the right innominate on the lower lumbar spine in supine, with lumbar right side-bending and left rotation.
Lumbar Alternate Neutral Gapping Manipulation
High-velocity, end-range, left-rotational force to the pelvis on the lower lumbar spine in left side-lying, with right thoracolumbar rotation and slight right hip flexion.

Lumbar Central Posterior/Anterior (PA) Graded Mobilization
A low-velocity, mid to end-range, posterior-anterior oscillatory force through the spinous process of the lumbar spine on the upper lumbar spine in a prone position.

Lumbar Unilateral Posterior/Anterior (PA) Graded Mobilization
A low-velocity, mid to end-range, posterior-anterior oscillatory force through the articular pillar of the lower lumbar spine on the upper lumbar spine in a prone position.

Supine Extension Manipulation of the Upper Thorax (T1-T3)
A high-velocity, end-range, A-P force through the elbows to the cervicothoracic junction on the upper thoracic spine in a supine bridged position.

Seated Mid Thoracic Distraction Thrust
A high-velocity, mid to end-range, distraction force to the midthoracic spine on the lower thoracic spine in a sitting position, in slight flexion with the patient’s arms crossed.

Seated CT Junction Thrust
A high-velocity, end-range, traction force to the cervicothoracic junction on the upper thoracic spine in a sitting position with the patient’s hands interlaced behind their head.

Supine Mid Thoracic Flexion
A high-velocity, end-range, anterior-posterior force through the elbows to the middle thoracic spine on the lower thoracic spine in a supine position with patient’s arms crossed.

Prone Mid–Lower Thoracic Extension Manipulation
A high-velocity, mid to end-range, posterior-to-anterior force to the midthoracic spine on the upper thoracic spine in a prone position.

Cervical Spine Central PA
A low-velocity, mid to end-range, posterior-anterior oscillatory force through the spinous process of the mid cervical spine on the lower cervical spine in a prone position with the cervical spine in slight flexion.

Cervical Spine Unilateral PA
A low-velocity, mid to end-range, posterior-anterior oscillatory force through the articular pillar of the mid cervical spine on the lower cervical spine in a prone position with the cervical spine in slight flexion.

Cervical Spine Hold–Relax Technique (flexion/opening)
A patient generated right side-bending force to the mid cervical spine on the lower cervical spine in supine with flexion and right lateral translation.
Cervical Spine Hold–Relax Technique (extension/closing)
A patient generated left side-bending force to the mid cervical spine on the lower cervical spine in supine with extension and right side bending.

Cervical Spine Extension/Closing Thrust (C2-C7)
A high-velocity mid-range inferior-medial force to the left articular pillar of the mid cervical spine on the lower cervical spine in supine, with slight extension, left sidebending and right rotation.

Cervical Spine Flexion/Opening Thrust (C2-C7)
A high-velocity mid-range right lateral translation force to the left articular pillar of the mid cervical spine on the lower cervical spine in supine, with slight flexion, left sidebending and right rotation.

Supine Cervical Upslope Manipulation (C2-T1)
A high-velocity mid-range right rotational force to the mid cervical spine on the lower cervical spine in supine, with right rotation and left sidebending.

AA Region Hold–Relax Technique
A patient generated left rotational force of the upper cervical spine on the mid cervical spine in supine with full cervical flexion and end range right rotation.

OA Region Hold–Relax Technique
A patient generated extension force of the occiput on the upper cervical spine in supine, with upper cervical flexion, left rotation and slight right sidebending.

Glenohumeral Internal Rotation (Gr I-IV)
Low-velocity, mid to end-range, oscillatory internal rotation force to the humerus on the glenoid in a supine position, with 90 degrees of shoulder abduction and elbow flexion.

Glenohumeral External Rotation (Gr I-IV)
Low-velocity, mid to end-range, oscillatory external rotation force with slight distraction to the humerus on the glenoid in a supine position, with 90 degrees of shoulder abduction and elbow flexion.

Glenohumeral Horizontal Adduction (Gr III-IV)
Low-velocity, mid to end-range, oscillatory adduction force with slight distraction to the humerus on the glenoid in a supine position, with 90 degrees of shoulder flexion and elbow flexion.

Glenohumeral Caudal Glides (Gr II-IV) with Abduction Progression
Low-velocity, mid to end-range, oscillatory caudal force with slight distraction to the humerus on the glenoid in a supine position, with 90 degrees of shoulder abduction and elbow flexion.

Glenohumeral Anterior–Posterior (AP) Glides (Gr III-IV)
Low-velocity, mid to end-range, oscillatory anterior to posterior force with slight distraction to the humerus on the glenoid in a supine position, with 90 degrees of shoulder abduction and elbow flexion.
**Acriomiooclavicular (AC) Anterior–Posterior (AP) Glides**
Low-velocity, mid to end-range, oscillatory anterior to posterior and posterior to anterior force to the clavicle on the acromion in a supine position.

**Acromioclavicular Rotation (Gr II-IV)**
Low-velocity, mid-range, inferior to superior oscillatory force to the clavicle on the acromion in a supine position.

**Sternoclavicular (SC) Posterior Glides**
Low-velocity, mid to end-range, oscillatory anterior to posterior force to the clavicle on the sternum in a supine position.

**Scapulothoracic Glides, Multiple Directions**
Low to high-velocity, end-range, force into retraction and/or posterior tilt to the scapula on the thorax in a sidelying position.

**Elbow Flexion Graded Mobilization (Neutral/Abduction/Adduction)**
Low-velocity, mid to end-range, oscillatory force into humeroulnar flexion in a supine position, in neutral or with varus or valgus stress.

**Elbow Extension Graded Mobilization (Neutral/Abduction/Adduction)**
Low-velocity, mid to end-range, oscillatory force into humeroulnar extension in a supine position, in neutral or with varus or valgus stress.

**Elbow Longitudinal Distraction in Flexion Graded Mobilization**
Low-velocity, end-range, oscillatory distraction force to the ulna on the humerus in a supine position, with the elbow flexed to 90 degrees.

**Humeral–Radial Anterior–Posterior/Posterior–Anterior (AP/PA) Graded Mobilization**
Low-velocity, mid to end-range, anterior to posterior or posterior to anterior oscillatory force to the radius on the humerus in a supine position, with the elbow extended and the forearm supinated.

**Forearm Pronation/Supination Graded Mobilization**
Low-velocity, mid to end-range, pronation or supination force to the distal radioulnar joint in a supine position, with the elbow flexed to 90 degrees.

**Radial Head Posterior-Anterior (PA) Manipulation**
High-velocity, end-range, posterior to anterior force to the radius on the ulna during humeroulnar extension in standing.

**Elbow Mobilization with Movement (treating lateral epicondylalgia)**
Low-velocity, end-range, medial to lateral sustained glide to the ulna on the humerus in a supine position, with active gripping or wrist extension in elbow extension and forearm supination.
Radiocarpal (RC) Anterior–Posterior (AP) Glides (Gr II-IV)
Low-velocity, mid to end-range, anterior to posterior or posterior to anterior oscillatory force to the proximal carpal row on the radius in a supine position with the forearm in neutral and the elbow flexed to 90 degrees.

Radiocarpal (RC) Ulnar and Radial Glides (Gr II-IV)
Low-velocity, mid to end-range, ulnar oscillatory force to the proximal carpal row on the radius in a supine position with the forearm supinated and the elbow extended
Low-velocity, mid to end-range, radial oscillatory force to the proximal carpal row on the radius in a supine position with the forearm pronated and the elbow extended.

Metacarpalphalangeal (MCP), Interphalangeal (IP) Anterior–Posterior/Posterior–Anterior (AP/PA) Glides (Gr II-IV)
Low-velocity, mid to end-range, anterior to posterior or posterior to anterior oscillatory force to the proximal phalanx on the metacarpal in a seated position with slight MCP flexion.
Low-velocity, mid to end-range, anterior to posterior or posterior to anterior oscillatory force to the middle phalanx on the proximal phalanx in a seated position with slight MCP flexion.
Low-velocity, mid to end-range, anterior to posterior or posterior to anterior oscillatory force to the distal phalanx on the middle phalanx in a seated position with slight MCP flexion.

Scapulunate Radiocarpal Manipulation (Carpal Drop)
A high-velocity, end-range posterior to anterior force to the scaphoid on the radius in a standing position with elbow extension and forearm pronation.

1st Carpometacarpal (CMC) Anterior–Posterior/Posterior–Anterior (AP/PA) Graded Mobilization GR II-IV
Low-velocity, mid to end-range, anterior to posterior or posterior to anterior oscillatory force to the 1st metacarpal on the trapezium in a seated position.

Intercarpal Horizontal Extension Mobilization
Low-velocity, mid to end-range, dorsal to palmar oscillatory force to the dorsal side of the carpal bones decreasing the transverse palmar arch with the forearm in neutral and the elbow flexed to 90 degrees.

Intercarpal Horizontal Flexion Mobilization
Low-velocity, mid to end-range, palmar to dorsal oscillatory force to the palmar side of the carpal bones increasing the transverse palmar arch with the forearm in neutral and the elbow flexed to 90 degrees.