



TheraPilates® for the Frail Older Adult

Mat Class for Balance & Fall Prevention

Sherri Betz, PT, DPT, GCS, CEEAA, PMA-CPT

www.therapilates.com




TheraPilates® for the Frail Older Adult
Mat Class for Balance & Fall Prevention





with Sherri Betz, PT, DPT, GCS, CEEAA, PMA®-CPT

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Did you know?

1 in 2 women....
1 in 4 men....
over age 50 have low bone density and is at risk for fracture


www.NOF.org

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What is the main reason that older adults are admitted for long-term care?

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Leg Strength

Walking speed and Leg Strength are the top predictors of nursing home placement!

Guralnick JM, et al 1994, Gill et al 1995, Studenski et al 2003, Guralnick et al 2000

1.4 m/s (3.1 miles/hour) is the setting for crosswalks

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Tiers of Care

- \$\$\$\$ Physical Therapy
- \$\$\$ Pilates Private
- \$\$ Small Group (w/without apparatus)
- \$ Large Group (Mat Class)

Care moves from highest skill at highest cost to lowest skill at lowest cost.

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Fit or Frail?

- Older Adults need low-cost, long-term group exercise programs targeted to their level of Fitness and Function.
- Triage of Older Adults into the Fit or Frail categories can be simplified by asking, "Can you get down to and up from the floor without assistance?"
- The frail older adult will need chairs, props and balance poles for their exercises.



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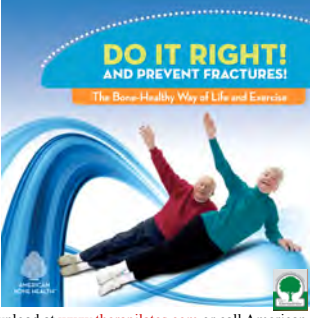
Exercise Intervention: General Concepts

- Teach Fracture Prevention FIRST!
 - Protect the vertebral bodies by avoiding flexion, endrange rotation/sidebending
 - Protect the ribcage with pillows
 - Avoid planted foot twists and forced rotation through the neck of the femur

Pigeon Pose

Fracture Prevention Brochure



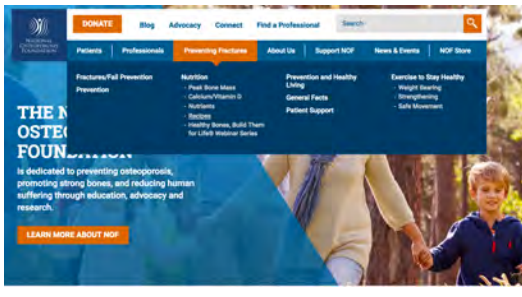
Fracture Prevention Brochure developed as a partnership with American Bone Health and the APTA Geriatric Section's Bone Health Special Interest Group


Download at www.therapilates.com or call American Bone Health for printed brochures



NOF Website

NOF/Pilates Anytime ADL Demonstrations:






Fracture Prevention Tutorials developed as a partnership with NOF and Pilates Anytime

- Chapter 1: Introduction
- Chapter 2: General Lifting Techniques
- Chapter 3: Packing for Groceries
- Chapter 4: Lifting Items with Handles
- Chapter 5: Picking Up a Small Child or Pet
- Chapter 6: Soft Stair Posture for Walking
- Chapter 7: Making the Bed and Stair
- Chapter 8: Soft Stair Posture for Walking
- Chapter 9: Lifting Out Items from Over or
- Chapter 10: Side Gardening
- Chapter 11: Sitting Posture
- Chapter 12: Dining Posture
- Chapter 13: Sitting at a Computer
- Chapter 14: Posture and Vacuuming

Exercise Class: General Concepts

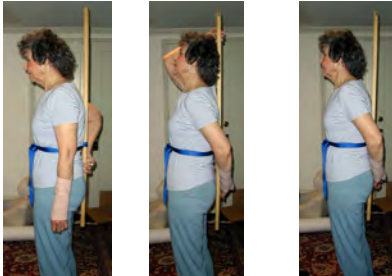


- Teach Hip Hinge and Spine Alignment
- Respect Painful Joints or Regions
- Teach Standing Posture & Balance
- Improve Overall Body Awareness

Neutral Spine Training




Neutral or Optimal Alignment



Relaxed Posture Forced Correction Best Correction

Pilates for Frail Older Adults



The exercises should be focused on:

- Balance
- Leg Strength
- Hip Extension
- Thoracic Extension

*As few seated exercises as possible!

Massage Ball



- Thick air-filled massage balls can be used to provide direct pressure to the spinous process without excessive pressures on the ribcage
- Targets thoracic extension with self-PA glide technique
- Targets abdominal strength simultaneously



Pilates Mat: Why Not?

70% (24/34) of the Mat Exercises from *Return to Life* are **contraindicated** for osteoporosis...

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Pilates for Frail Older Adults

All of the exercises are performed on a mat and would not be accessible to a frail older adult unless they were performed in bed.

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Pilates-The Good...

So you want to do PILATES for your BONES?

RECOMMENDED MATWORK:

- CORE CONTROL
- DYNAMIC ALIGNMENT
- LEG STRENGTH
- SPINAL EXTENSION

Suggested Matwork:

- Single Leg Kick
- Push Up
- Side Lift
- Leg Pull
- Shoulder Bridge
- Double Leg Kick
- Swan
- Swimming

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Pilates-The Not So Good...

So you want to do Pilates? and you have Osteoporosis...

WITH LOW BONE DENSITY AVOID:

- ROUNDED SPINE ABDOMINAL WORK: Roundoff, Rollup, Crisscross, Teaser, Single/Double Leg Stretch, Neck Pull, Open Leg Kick
- LOADED SPINE FLEXION: Rollover, Corkscrew Spine Stretch, Jack-Knife, Scissors, Bicycle, Boomerang, Seal, Crab, Control Balance
- DEEP TWISTS: Spine Twist, Corkscrew, Seal, Criss Cross
- PRESSURES ON THE RIBCAGE: Rocking, Swan 2/3

AVOID:

- Rounded Spine Abdominal Work
- Loaded Spine Flexion
- Deep Twists
- Pressures on the Ribcage

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Stop the Crunches!

- What older adult needs better thoracic flexion?
- How many of us will end up walking with the walker behind us?


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Recommendations

- Make safe movement choices throughout your daily activities
- Talk to your instructors to ensure they have the skills to address your personal wellness
- Seek out a Bone Safe Exercise class!

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Classes are Fun!



Practice Single Leg Standing Balance with Friends!

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Bone Building for Seniors

Sessions held on Mondays

Glenwood Regional Medical Center

Classes start Monday April 9th!

Introduction to Pilates for Bone Building 10:00am
 Learn precisions, proper posture, principles of alignment, core control and breathing for injury rehabilitation and bone building exercises.

Pilates for Bone Building 6:00pm
 Level 2 Intermediate program for those who can get to the floor for exercise. We do standing balance, leg and back strengthening and Pilates-based core exercises for a bone building workout.

Glenwood Medical Mall
 102 Thomas Rd., Suite 501
 West Monroe

Outpatient Therapy Sports Gym, Suite 503 (Entrance #5)


Instructor:
 Sherri Betz, PT, DPT, GCS, PMA-CPT

Cost:
 \$30 for 6 week series

To enroll and pay, go to glenwoodregional.org or call 318-329-4770.

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The Fountain of Youth!



"Hip Extension, Thoracic Spine Extension, Leg Strength, & Balance!"

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Frail Older Adult Pilates Based-Mat

with Sherri Betz, PT, DPT, GCS

- 1) Shoes off Foot Massage with Hands/Tennis Ball
- 2) Ball behind back Thoracic Extension
- 3) Costal Breathing
- 4) Hip Hinge with Dowel
- 5) Sit to Stand Practice leg and spine alignment
- 6) Fletcher 7 Standing and Centering Cues
- 7) Standing Balance: Feet Together, Tandem
- 8) Single Leg Standing Balance 3 sets of 10 sec
- 9) Up on toes with Ankles together
- 10) Single Leg Stance-Heel raise with proper ankle tracking
- 11) Sit Down to Rest Legs: Fletcher Taut towel pulls in "sewing" position with palms up, elbows at waist at 90° to prepare shoulder for upper body work.
- 12) Taut Towel Pulls
- 13) Fletcher Taut Towel Pulls at: Collarbones and Overhead
- 14) Back up to Standing: Single Leg Stance-Bend Knee, keep arch lifted, knee over 2nd toe
- 15) Bend or straighten Standing Knee; hip flex, abd, ext with tubing
- 16) Seated Bionic Band Rowing, Bicep Curls, Shoulder Extension, Bow & Arrow Rows with Rotation
- 17) Abdominal Hinges and Pelvic Tilt
- 18) Chair Pose with Hip Hinge and Neutral Spine
- 19) Lunges (Marriage Proposal Position)
- 20) Shoulder Push Ups Against Wall or Counter
- 21) Dynamic Stepping behind chair: Side Steps, Grapevine, Towel Sequence with Small Sidebend
- 22) Seated Pigeon Stretch

Review of Standing Posture, lifting activities, body mechanics, and precautions.

Adjust your rear-view mirror to your taller sitting posture!
 Stay positive, stay active, stay independent!

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TheraPilates® Mat Class for Frail Older Adults

Designed for a recreation center. Supplies needed for each participant: Chair, 4 foot stretch with supports on each end, 2 tennis balls (put these five from a tennis court), 4" Air Fibre Balls, 3 foot Medium Weight Theraband, Classic Soap.

Feet: Ball Massage

Rolling Massage Pincer: MTP Flexion Arch Worm

1. Roll tennis ball lengthwise between metatarsals, slowly from heel to MTPs.
2. Place foot to front of ball, wrap foot over top of ball to expose 5 metatarsal heads.
3. Repeat on each foot.

Ball Behind Back: Thoracic Extension

Place the ball as high as possible behind the back. Place hands behind the neck and slide them up to the base of the skull providing traction to the cervical spine. Keep elbows forward to avoid their crossing and then as reaching the spine. Tuck in neck the entire over the ball, slide the hands to vertical position. Repeat 5-6 on each position of the thoracic spine. Progressively reaching down the spine. Do not slide the ball on the lumbar spine for this exercise.

Slight Lumbar Flexion/Posterior Pelvic Tilt

Keeping a vertical and lengthened spine, roll the pelvis back and press the lumbar spine into the ball reducing the position of the thigh each time. Roll the ball distalward to the feet. To roll one with the legs in a wide position to facilitate pelvic floor exercises.

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BREATHING
 Diaphragmatic (Diaphragm Only) Upper Thoracic (Chest Breathing) Lower Thoracic (Chest)

Classic Breathing Exercises for 3 months of each year. Progress by adding resistance to perform diaphragmatic breath, then an Upper Thoracic Breath and then a Lower Thoracic Breath (alternating between the Pigeon to Feet, (the dark bars in back of 2 spine to one extent) diaphragmatic breath with expansion of low abdomen without protrusion of pelvis/upper torso. Lower Thoracic (Chest) breath with equal expansion of sternum and upper thoracic chest. Without upper respiratory over-ventilation. Lower Thoracic (Chest) breath with expansion of lower ribs bilaterally to the breast plate (without upper respiratory over-ventilation).

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SET UP STAIRS/Step Hinge
 Start Position: Page(s) on TOP & THUMB INDEX
 Tip: In order to see the floor behind back, use an inclined approach, dorsi may be used as a cue.
 Sit to Stand (the 1st / Knee - Standard Chair Seat Height) or 1st Step (Knee 1st Step)
 Be Sure Legs Are Touching Chair at 90° Hip Flexion Hold 10 sec

FAULTS: **Set for Ankle** **Extended** **Round** **Slant** **Correct**

FAULTS: **Slumped** **Cloned** **Off to Side** **Walk Leg Forward**

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Tip Hinge: Most keep lower eye, hinge at the knee, heel of foot on floor and plant flexion with knee. Heel, middle and forefoot. The hinge heel of foot on floor and plant flexion with knee. Heel down and the bottom spine to monitor the spine as hinging occurs.
 Sit to front of chair, perform hip hinge (think of leading or pulling with softness) and stand up. They track back or slightly are touching the chair. Repeat 8 to 10 times hinging tracing slightly backwards in the chair. Do very slowly. Students can see the dorsi as a cue if necessary.
 1. Ability to stand up without upper extremity assistance and balance (standing on one foot)
 2. Ability to stand up with good feet and foot organization (ankle, hip, knee, or pelvis)
 3. Ability to stand up without upper extremity assistance.
 4. Ability to hold feet apart 10-12 inches and the knees above the chair seat for 10-15 seconds.

Trainer 7 Standing & Centering Cues:

1. Triped Feet
2. Magnets
3. Balls

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4. Circle of Strength
Circle of Strength

5. Shoulder Girdle Placement
Shoulder Girdle Placement

6. Head and Neck Placement
Head and Neck Placement

7. Breathing
Breathing

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HEEL RAISE
 Begin with tennis ball between ankles to practice subtalar neutral alignment.

Heel Correct Alignment with Tennis Ball Lift: **Heel Correct Alignment**

FAULTS: **Knee Buck** **Heel Forward** **Patella Forward** **Heel Shift** **Torso Lean**

Remember:

1. Keep Subtalar Neutral Alignment
2. Keep Knee Straight
3. Keep Pelvis Level: avoid anterior translation, hiking, or shifting laterally
4. Maintain Heel to Pelvis Alignment: avoid rib shift anteriorly, laterally or posteriorly and torso lean
5. Maintain Shoulder Girdle Organization: avoid elevation, abduction and torso arm crossed
6. Maintain Head Alignment: avoid forward head or jutting of chin
7. Repeat 10x with each leg and alternate leading leg together. Working foot to floor, excessive torso movement, hopping or falling arms
8. Keep on heel back rest and use as balance assistance. Steadily encourage students to progress without assistance (then hand 2" off of their back rest or hold over/under of their backrest)

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Theraband Seating: Preparation for all upper body work

Hold: Theraband without slack about 12" apart pull up. Imagine that you are holding a serving tray. Sit with optimal postural alignment. Inhale to raise shoulders and roll torso to heels back and down to the ankles. Exhale and pull Theraband apart as far as possible while maintaining the forward head and upright posture. Avoid "hopping" or reducing weight. Repeat 10 times and increase band tension as progress.

Theraband Rowing: Bilateral, Unilateral & Rotation

Bilateral: **Bilateral**
 Seated 1st Knee Straight (as long as no acute pain, tingling or numbness). Inhale to pull elbows back to the side across. Exhale, pull forward of hands and arms back further. Inhale, return to side across. Repeat 4-5 on each side.

Unilateral: **Unilateral**
 Seated 1st Knee Straight (as long as no acute pain, tingling or numbness). Inhale to lengthen the torso. Inhale to pull elbow back to the side across. Inhale to release the right arm down to start position. Repeat 4-5 on each side.

Rotation: **Rotation**
 Seated 1st Knee Straight (as long as no acute pain, tingling or numbness). Inhale to lengthen the torso. Exhale to pull the right elbow back as the torso rotates to the right. Inhale to release the right arm and torso down to start position. Repeat 4-5 on each side. Repeat 4-5 to right with Theraband on right foot and then 4-5 to left with Theraband on left foot.

Remember:

1. Keep Knee Straight
2. Keep Pelvis Level: avoid anterior translation, hiking, or shifting laterally
3. Maintain Heel to Pelvis Alignment: avoid rib shift anteriorly, laterally or posteriorly and torso lean
4. Keep Shoulder Girdle Organization: avoid elevation, abduction and torso arm crossed
5. Keep Head Alignment: avoid forward head or jutting of chin
6. Perform 4-5 repetitions with hand on right leg. Repeat on left leg.

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Single Leg Knee Bend

Seated: Tall in optimal posture with feet together, allow the weight to shift to the left leg. Keeping the torso back, lift the right knee off the ground and lift the leg until the knee is even with the hip lengthen naturally up as far as you can. Allow the knee and heel of the standing leg to land equally and hold as far as ankle range of motion will allow. Hold for 10 progressing to 30 seconds. When able to hold for 30 seconds, begin going up and down as if you are sliding up and down a wall. Repeat 10x each leg.

Remember:

1. Maintain heel flat, subtalar neutral ankle alignment. Avoid pronation or collapsing arch.
2. Maintain upright posture. Avoid rigid motion of the knee.
3. Keep Pelvis Level: avoid anterior translation, hiking, or shifting laterally.
4. Maintain Heel to Pelvis Alignment: avoid rib shift anteriorly, laterally or posteriorly and torso lean
5. Keep Shoulder Girdle Organization: avoid elevation, abduction and torso arm crossed
6. Keep Head Alignment: avoid forward head or jutting of chin
7. Perform 4-5 repetitions with hand on right leg. Repeat with hand on left leg.

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3 Way Hip Flexion, Abduction and Extension (Without Head)

3 Way Hip Without Head:
Starting: Sit in upright posture with feet together, allow the weight to shift to the left leg. Keeping the pelvis level, lift the right foot off the ground and lift the leg until the knee is even with the hip (keeping the knee a cup of tea or your head). Inhale to lengthen the spine. Exhale to lead the right foot forward to about 2" off the floor until the knee is straight. Inhale to return to the "start" position. Exhale to lead the right foot back to about 2" off the floor until the knee is straight. Pay special attention to the pelvic position, avoiding anterior pelvic motion or tuck-in spine motion. Imagine connecting the pelvic bone to the sternum to maintain pelvic alignment. Inhale to return to the "start" position. Repeat 10x each direction. Add weight if desired.

3 Way Hip WITH Head:
Starting: Sit in upright posture with feet together, allow the weight to shift to the left leg. Keeping the pelvis level, lift the right foot off the ground about 4" with the knee straight and ankle flexed. Inhale to lengthen the spine. Exhale to lift the right leg about 12". Inhale to bring the knee to the side of the head. Repeat 10x each direction. The side and lift to the head. Add padding for a challenge. Pay special attention to the pelvic position when the leg extends, avoiding anterior pelvic motion or tuck-in spine motion. Imagine connecting the pelvic bone to the sternum to maintain pelvic alignment.

3 Way Hip WITH Standing Leg Feet:
Perform either of the above variations with the standing leg bent for an increased challenge.

Remember:
1. Maintain level feet, adequate neutral pelvic alignment of the standing leg. Avoid pronation or collapsing arch.
2. Keep knee aligned over 2nd toe. Avoid valgus motion of the knee.
3. Keep Pelvic Level: avoid anterior translation, tilting, or shifting laterally.
4. Maintain the Pelvic Alignment: avoid tilt, shift, anterior, lateral or posterior and torso lean.
5. Keep Shoulder Over Hip: avoid rotation, avoid deviation, adduction and torso arms crossed.
6. Keep Head Alignment: avoid head on top of neck. Repeat with lead and lift leg.

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3 Way Hip Flexion, Abduction and Extension (With Head)

3 Way Hip Without Head:
Starting: Sit in upright posture with feet together, allow the weight to shift to the left leg. Keeping the pelvis level, lift the right foot off the ground and lift the leg until the knee is even with the hip (keeping the knee a cup of tea or your head). Inhale to lengthen the spine. Exhale to lead the right foot forward to about 2" off the floor until the knee is straight. Inhale to return to the "start" position. Exhale to lead the right foot back to the "start" position. Inhale to lead the right foot back to about 2" off the floor until the knee is straight. Pay special attention to the pelvic position, avoiding anterior pelvic motion or tuck-in spine motion. Imagine connecting the pelvic bone to the sternum to maintain pelvic alignment. Inhale to return to the "start" position. Repeat 10x each leg. Add weight if desired.

3 Way WITH Head:
Starting: Sit in upright posture with feet together, allow the weight to shift to the left leg. Keeping the pelvis level, lift the right foot off the ground about 4" with the knee straight and ankle flexed. Inhale to lengthen the spine. Exhale to lift the right leg about 12". Inhale to bring the knee to the side of the head. Repeat 10x each direction. The side and lift to the head. Add padding for a challenge. Pay special attention to the pelvic position when the leg extends, avoiding anterior pelvic motion or tuck-in spine motion. Imagine connecting the pelvic bone to the sternum to maintain pelvic alignment.

3 Way WITH Standing Leg Feet:
Perform either of the above variations with the standing leg bent for an increased challenge.

Remember:
1. Maintain level feet, adequate neutral pelvic alignment of the standing leg. Avoid pronation or collapsing arch.
2. Keep knee aligned over 2nd toe. Avoid valgus motion of the knee.
3. Keep Pelvic Level: avoid anterior translation, tilting, or shifting laterally.
4. Maintain the Pelvic Alignment: avoid tilt, shift, anterior, lateral or posterior and torso lean.
5. Keep Shoulder Over Hip: avoid rotation, avoid deviation, adduction and torso arms crossed.
6. Keep Head Alignment: avoid head on top of neck. Repeat with lead and lift leg.

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Theraband Chest Expansion, Triceps Press, Slump Curve

Chest Expansion:
Using 1/2 size TheraBand (as long as no wrist pain, tingling or numbness). Inhale to widen collarbone and pull arms and shoulders back to the side arms. Exhale, pull hands to back and cross back together. Inhale, return to side arms. Inhale to return to start position.

Triceps Press:
Bands forward to a neutral spine position. Place TheraBand under right foot. Adjust tension to tighten. Keep feet firmly planted to hold TheraBand. Hold TheraBand steady with both hands and reach right elbow back to touch. Inhale to lengthen the spine and "let" the right arm to the back. Exhale to emphasize elbow. Maintain upper, shoulder and arm alignment. Repeat 10x on each side.

Slump Curve:
Pelvis tilted to a neutral spine position. Place TheraBand under right foot. Adjust tension to tighten. Keep feet firmly planted to hold TheraBand. Hold TheraBand with both hands on top of feet and reach right arm to touch the spine and "let" the curve on the back. Inhale to bend the elbow. Maintain the elbow beside the wrist throughout the movement. Repeat 10x on each side.

Remember:
1. Keep Back Straight
2. Keep Pelvic Level: avoid anterior translation, tilting, or shifting laterally.
3. Maintain the Pelvic Alignment: avoid tilt, shift, anterior, lateral or posterior and torso lean.
4. Keep Shoulder Over Hip: avoid rotation, avoid deviation, adduction and torso arms crossed.
5. Keep Head Alignment: avoid head on top of neck. Repeat with lead and lift leg.

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REFERENCE PROPOSAL Lunge

1) Why Down Tuck Sit to Floor
Front Thigh Back Foot Vertical

FAULTY:
Ankle Sagging Patellar Tilt Ankle Tilt Pelvis Tipping Pelvis Tipping

1) Maintain lower extremity alignment with equal knee flexion bilaterally, keeping front knee vertical and midline collapse of arch and knee valgus.
2. Keep pelvis neutral (middle ear and posterior line) and flat.
3. Keep Thighs centered over pelvis, avoiding lower limb shifting or clearing backward.
4. Keep torso vertical.
5. Keep head in alignment parallel forward head or setting chin.
6. Keep shoulder girdle engaged (avoiding protraction or retraction).
7. Decent by way to the floor. If no good alignment of all of the above.
8. Head down on back knee reaches the floor and the arm supports maintaining pelvic level, neutral spine and torso vertical.
9. May use hand back rest, chair or case for additional support (Use any assistance to achieve LIFT Feet Forward, HEAVY on above).

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Seated Abdominals

Seated Trunk:
With hands to the side rest on additional support. Inhale, keeping a vertical and lengthened spine. Exhale, lift the pelvic back and lengthen the shoulder spine without losing the position of the thigh and head. Feet flat down abdominal gently contract. Maintain the position of the pelvis and avoid abdominal ridge and lift one leg at a time. If well-controlled, lift both legs and add extension of the leg for a challenge. Repeat 5-10 each leg.

Seated Bullback:
Inhale to find a vertical lengthened spine position. Exhale to roll back initiating with a pelvic tilt. Inhale to find a vertical lengthened spine position. Exhale to roll back initiating with a pelvic tilt. Inhale to find a vertical lengthened spine position. Exhale to roll back initiating with a pelvic tilt. Inhale to find a vertical lengthened spine position. Exhale to roll back initiating with a pelvic tilt.

Seated Chin Stretch:
Hold the backrest of the chair. Roll your shoulders down and back. Draw your shoulder blades together. Lift hand from your right knee and extend the wrist of your hand. Breathe deeply 5-8 breaths deep.

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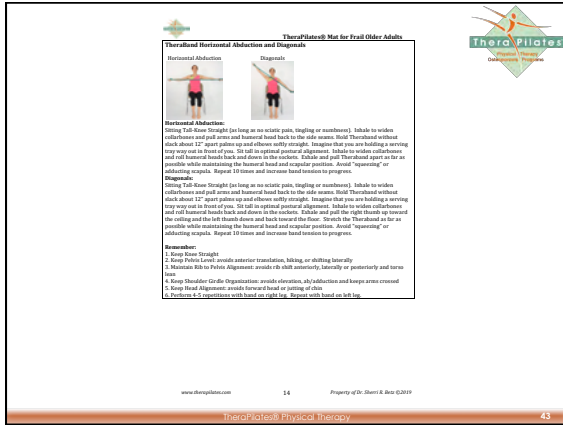
Teaser Teeter

Teaser Teeter: Start with the left leg extended back with a neutral pelvis and straight knee. Place hands on back over for additional support. Inhale, keeping a vertical and lengthened spine. Exhale, bring forward the right leg. At the end of the leg, stop and add one arm extended, maintain a slight forward and back 90° position. Imagine that you are on top of the ball for the left foot. Inhale to return to starting position. Repeat 5-10 times on each side.

Teaser Teeter - Quad Up: Start with the left leg extended back with a neutral pelvis and straight knee. Place hands on back over for additional support. Inhale, keeping a vertical and lengthened spine. Exhale, bring forward and place both hands on the chair and for additional support. Inhale, keeping a vertical and lengthened spine. Exhale, extending the left hip and add shoulder flexion with the hip extension. Inhale to return to starting position. Repeat 5-10 times on each side.

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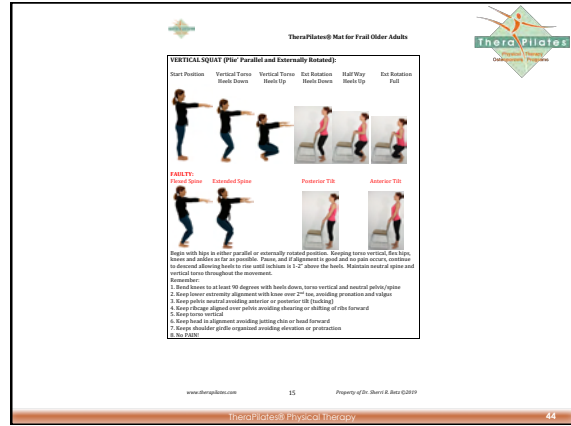
Horizontal Abduction and Diagonal

Horizontal Abduction:
 Sit on the mat with feet flat on the floor, knees bent and feet hip-width apart. Inhale to widen collarbone and pull arms and hands back to the side arms. Hold Theraband without slack about 12" apart from your feet and elbows with straps. Exhale that you are holding a serving tray on top of your head. Sit tall in optimal posture alignment. Inhale to widen collarbone and pull hands back and down in the motion. Exhale and pull Theraband apart as far as possible while maintaining the torso in a tall and upright position. Repeat "opening" or "adapting" straps. Repeat 10 times and increase hand tension to progress.

Diagonal:
 Sit on the mat with feet flat on the floor, knees bent and feet hip-width apart. Inhale to widen collarbone and pull arms and hands back to the side arms. Hold Theraband without slack about 12" apart from your feet and elbows with straps. Imagine that you are holding a serving tray on top of your head. Sit tall in optimal posture alignment. Inhale to widen collarbone and pull hands back and down in the motion. Exhale and pull the right elbow to the ceiling and the left hand down and back toward the floor. Stretch the Theraband as far as possible while maintaining the torso in a tall and upright position. Repeat "opening" or "adapting" straps. Repeat 10 times and increase hand tension to progress.

Remember:
 1. Keep Feet Straight
 2. Keep Pelvic Linn outside anterior rotation, tilting or shifting laterally
 3. Maintain Rib to Pelvis Alignment inside rib shift anteriorly, laterally or posteriorly and torso lean
 4. Keep Shoulder Girdle Organization inside elevation, abduction and keeps arms crossed
 5. Keep Head Alignment inside forward head or sitting or slumped
 6. Practice 4-5 repetitions with hand on right leg. Repeat with hand on left leg.

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TheraPilates® Mat for Frail Older Adults

VERTICAL SQUAT (Pir® Parallel and Externally Rotated)

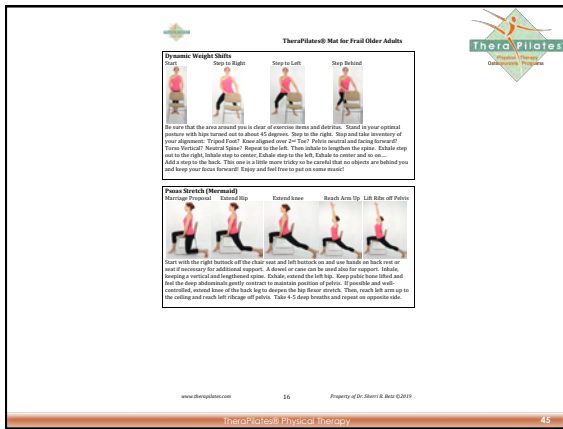
Start Position	Vertical Torso	Vertical Torso	Ext Rotation	Half Way	Ext Rotation
Heels Down	Heels Down	Heels Down	Heels Down	Heels Down	Feet

FAULTY: Pelvic Tilt, Excessive Spine, Posterior Tib, Anterior Tib

Begin with hips in either parallel or externally rotated position. Keeping torso vertical, feet hip-width apart and heels on the ground. Feet and alignment about the same, continue to descend, allowing heels to rise until within 2" above the heels. Maintain neutral spine and vertical torso throughout the movement.

Remember:
 1. Bend knees to at least 90 degrees, with heels down, torso vertical and neutral pelvis/spine
 2. Keep torso extremely alignment with knee over 2nd toe, avoiding pronation and valgus
 3. Keep pelvis neutral avoiding anterior or posterior tilt (tucking)
 4. Keep thigh aligned over pelvis avoiding leaning or shifting of ribs forward
 5. Keep torso vertical if over pelvis avoiding leaning or shifting of ribs forward
 6. Keep head in alignment avoiding jutting chin or head forward
 7. Keep shoulder girdle organized avoiding elevation or protrusion
 8. No VMO

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TheraPilates® Mat for Frail Older Adults

Dynamic Weight Shifts

Start Step to Right Step to Left Step Behind

Be sure that the feet are on the floor of exercise mat and feet flat. Stand in your optimal posture with hips level and at about 45 degrees. Step to the right. Step and take correction of your alignment. "Up and Feet" show aligned over 2nd Toe? Pelvis neutral and facing forward? Then "Vertical" "Neutral Spine" Repeat to left. Then "Step" to the right. Repeat to the right. Then "Step" to the left. Then "Step" to the right and so on. Add a step to the back. This one is a little more tricky as you cannot see or adjust or balance you and keep your torso forward! Keep and feet flat on the mat!

Pelvic Strength (Normal)

Normal Pelvic Strength Forward Step Backward Step Right Arm Up Left Side of Pelvis

Start with the right foot off the other foot and left foot on the mat and use hands on back mat or wall for additional support. A dowel or cane can be used also for support. Inhale, bringing a vertical and upright posture. Exhale, extend the left leg. Keep pelvis from tilting and feel the deep abdominal gently contract to maintain posture of pelvis. If possible and well-tolerated, extend knee of the back leg to depress the hip flexor stretch. Then, reach left arm up to the ceiling and reach left through all points. Take 4-5 deep breaths and repeat on opposite side.

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TheraPilates® Mat for Frail Older Adults

Meditation, Gratitude and Reflection:

Take a few moments at the end of each class to quietly feel the energy circulating through your body. Imagine bright light circulating to body parts that need attention. Send thoughts of gratitude to your body for carrying you this far and bringing you to this class. Send gratitude to friends or family who may be ill or suffering. Place a candle on your pelvis, a candle across your collarbone and bring a candle to your head!

Adaptation and stress reduction has been shown in research to reduce cortisol levels and increase osteoclast levels. High level of cortisol can cause bone loss. It's possible that meditation can naturally offer your bones a positive space.

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TheraPilates® Mat for Frail Older Adults

RESOURCES

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Pilates Exercise Resources

The Steoporosis Exercise Book: BUILDING BETTER BONES 2nd Edition

- Stop Bone Loss
- Prevent Fractures
- Build Bone

By Sherri R. Betz, PT, DPT, GCS, CEEAA, PMA®-CPT

Pilates for Seniors: The Osteoporosis Workout


TheraPilates® Mat for Building Education

Pilates Exercises for Osteoporosis: Building Better Bones

YOGA for Osteoporosis

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International Osteoporosis Foundation

- For more information and continued updates on research and developments for the treatment and prevention of osteoporosis go to the internet:
- To search for the Osteoporosis Societies in ANY country go to:

www.osteofound.org

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Osteoporosis Australia

Osteoporosis Australia aims to improve awareness about the disease in the Australian community and reduce bone fractures.

<https://www.osteoporosis.org.au/>

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ONERO Academy

An Evidence-based exercise program developed by Professor Belinda Beck, based on findings from the LIFTMOR Trials at Griffith University.

<https://onero.academy/osteoporosis-exercises/>

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ESSA Position Statement

- Beck, B. R., et al. (2016). "Exercise and Sports Science Australia (ESSA) position statement on exercise prescription for the prevention and management of osteoporosis." J Sci Med Sport.

<https://onero.academy/wp-content/uploads/2019/02/Essa-Positional-Statement.pdf>

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Australia & New Zealand Bone & Mineral Society

ANZBMS is a professional medical / scientific society established in 1988 to bring together clinical and experimental scientists and physicians actively involved in the study of bone and mineral metabolism in Australia and New Zealand.

<https://www.anzbms.org.au/>

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Australian Physiotherapy Association



(APA) is the peak body representing the interests of Australian physiotherapists and their patients.

<https://australian.physio/>

Special webpage devoted to consumer education about osteoporosis

<https://choose.physio/your-condition/osteoporosis>

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National Osteoporosis Foundation (USA)


For more information and continued updates on research and developments for the treatment and prevention of osteoporosis go to the internet:

www.nof.org
1-202-231-4222

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FORE: Foundation for Osteoporosis Research & Education (USA)



FORE has a public outreach program called American Bone Health.

American Bone Health was developed as a community outreach and awareness program
www.americanbonehealth.org



www.FORE.org
888-266-3015

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American Bone Health Speaker's Bureau! (USA)





Become an American Bone Health Peer Educator. Contact Kathleen Cody, Executive Director, or Shelley Powers if you are interested in the training program to become a speaker.
888-266-3015
kathleen@americanbonehealth.org

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Pilates Method Alliance

- The Pilates community at large has joined together in an effort to identify and preserve the comprehensive work of Joseph and Clara Pilates.
- The PMA believes that Pilates should evolve along with the advances in movement research and modern science.
- The PMA developed a 3rd party accredited certification program in 2005 to establish national entry-level standards in an effort to protect the public and ensure quality of instruction.





www.pilatesmethodalliance.org

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American Physical Therapy Association




The Bone Health Special Interest Group is a group of "boneheads" with with a passion for bone health!

Join us at: www.geriatricspt.org
or email sherri@therapilates.com




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Academy of Geriatric Physical Therapy


Clinical Practice Guidelines for the Management of Osteoporosis

Under the direction of Greg Hartley and Keith Avin, Bone Health SIG members, Sherri Betz and Carleen Lindsey are participating in the CPG Workgroup to publish a Clinical Guidance Statement with a special focus on exercise and manual therapy intervention recommendations.



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The Fountain of Youth!



"Hip Extension ,
Thoracic Spine
Extension
Leg Strength,
&
Balance!"

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TheraPilates® Physical Therapy

Thank you!



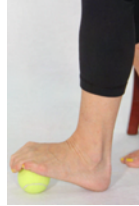
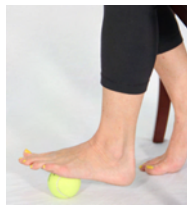
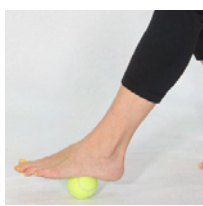
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Santa Cruz, CA & Monroe, LA
www.therapilates.com 831-359-5184 sherri@therapilates.com
Glenwood Medical Center Physical Therapy, West Monroe, LA



TheraPilates® Mat Class for Frail Older Adults

Designed for a recreation center. Supplies needed for each participant: Chairs, 4 foot dowels with stoppers on each end, 2 tennis balls (get these free from a tennis coach!), 8" Air Filled Balls, 5 foot Medium Weight Therabands, Elastic loop.

Tennis Ball Massage



Rolling Massage

Parakeet: MTP Flexion

Inch Worm

1. Roll tennis ball longitudinally between metatarsals slowly from heel to MTPs.
2. Place heel in front of ball, wrap toes over top of ball to expose the 5 metatarsal heads.
3. Play "inchworm" with the feet.

Ball Behind Back: Thoracic Extension



Place the ball as high as possible behind the back. Place hands behind the neck and slide them up to the base of the skull providing traction to the cervical spine. Keep elbows forward to avoid chest stretch and focus on mobilizing the spine. Inhale to extend the spine over the ball, exhale to return to vertical posture. Repeat 3-5x at each position of the thoracic spine. Progressively working down the spine. Do not place the ball at the lumbar spine for this exercise.

Slight Lumbar Flexion/Posterior Pelvic Tilt



Keeping a vertical and lengthened spine, roll the pelvis back and press the lumbar spine into the ball without losing the position of the ribcage and head. Feel the deep abdominals contract. Try this also with the legs in a wide position to facilitate pelvic floor contraction.

BREATHING:

Diaphragmatic
(Abdominal/Belly)



Upper Thoracic
(Pump Handle)



Lower Thoracic
(Costal)



Teach Breathing Styles asking for 3 breaths of each type. Progress by asking students to perform Diaphragmatic Breath, then an Upper Thoracic Breath and then a Lower Thoracic Breath alternating between the 3 types for 3 sets. (You don't have to teach all 3 styles in one session)
Diaphragmatic Breath with expansion of low abdomen without perturbation of pelvis/spine
Upper Thoracic (Pump Handle) breath with sagittal expansion of sternum and upper thoracic spine without upper trapezius over-recruitment
Lower Thoracic (Costal) breath with expansion of lower ribs bilaterally in the frontal plane without upper trapezius over-recruitment.

SIT TO STAND/Hip Hinge

Start Position



Hip Hinge



Fingers on TOP & Thumb UNDER



If unable to use the dowel behind back due to excessive kyphosis, dowel may be used as a cane.

Sit to Stand (Use 18" / 46cm Standard Chair Seat Height)

Be Sure Legs Are Touching Chair)

at 90° Hip Flexion Hold 10 sec



FAULTY:

Sidebending



UE for Assist



Extended



Flexed



Valgus



Correct



FAULTY:

Slumped, Flexed Sit to Stand



Weak Leg Forward



TheraPilates® Mat for Frail Older Adults

Hip Hinge: Must keep neutral spine, hinge at hips 3-5x maintaining spine position with dowel against head, midback and sacrum. Use fingers/hand on top of dowel and place thumb between the dowel and the lumbar spine to monitor the space as hinging occurs.

Sit to Stand:

Scoot to front of chair, perform hip hinge (think of leading or initiating with tailbone) and stand up. Step back until backs of thighs are touching the chair. Repeat **Sit to Stands** barely touching thighs/buttocks to the chair 10x very slowly. Students can use the dowel as a cane if necessary. Watch for:

1. Ability to stand up maintaining spine position and balance (avoiding flexion or pelvic tuck).
2. Ability to stand up with good knee and foot organization (avoids valgus, pronation or placing 1 foot behind the other if one leg is weak).
3. Ability to stand up without upper extremity assistance.
4. Ability to hold half squat in 90 degrees of hip flexion above the chair surface for 10-30 seconds.

Fletcher 7 Standing & Centering Cues:

1. Tripod Foot

Foot Centers
Encourage



Avoid



Avoid



2. Magnets

Magnets
Encourage



Avoid



3. Bolts

Bolts
Encourage



Encourage



Avoid



Avoid



Neutral-Correct

Anterior

Posterior

4. Girdle of Strength

Girdle of Strength

Encourage



Avoid



Avoid



5. Shoulder Girdle Placement

Shoulder Girdle Placement

Encourage



Avoid



6. Head and Neck Placement

Head and Neck Placement

Encourage



Avoid



Avoid



7. Breathing

Fletcher Percussive Breath™

Encourage



Encourage



HEEL RAISE

Begin with tennis ball between ankles to practice subtalar neutral alignment.

Bilateral Correct Alignment with Tennis Ball Heel Lift



Unilateral Correct Alignment



FAULTY: Knee Bent



FAULTY: Pelvis Forward



FAULTY: Pelvis Elevated



FAULTY: Pelvis Shift



FAULTY: Torso Lean



Remember:

1. Keep Ankle Subtalar Neutral Alignment
2. Keep Knee Straight
3. Keep Pelvis Level: avoid anterior translation, hiking, or shifting laterally
4. Maintain Rib to Pelvis Alignment: avoid rib shift anteriorly, laterally or posteriorly and torso lean
5. Maintain Shoulder Girdle Organization: avoid elevation, ab/adduction and keeps arms crossed
6. Maintain Head Alignment: avoid forward head or jutting of chin
7. Repeat 10x with good balance: avoid touching legs together, touching lifted foot to floor, excessive torso movement, hopping or flailing arms
8. May use chair back rest and or cane for balance assistance. Strongly encourage students to attempt exercise without assistive devices (float hand 2" off of chair back rest or hold dowel/can 2" off floor for safety)

TheraBand Serving: Preparation for all upper body work



Hold TheraBand without slack about 12” apart palms up. Imagine that you are holding a serving tray. Sit tall in optimal postural alignment. Inhale to widen collarbones and roll humeral heads back and down in the sockets. Exhale and pull TheraBand apart as far as possible while maintaining the humeral head and scapular position. Avoid “squeezing” or adducting scapula. Repeat 10 times and increase band tension to progress.

TheraBand Rowing: Bilateral, Unilateral & Rotation



Bilateral:

Sitting Tall-Knee Straight (as long as no sciatic pain, tingling or numbness). Inhale to pull elbows back to the side seams. Exhale, pull humeral heads and arms back farther. Inhale, return to side seams. Exhale straighten elbows.

Unilateral:

Sitting Tall-Knee Straight (as long as no sciatic pain, tingling or numbness). Inhale to lengthen the spine. Exhale to pull elbows back to the side seams. Inhale to release the right arm slowly to start position. Repeat 4-5x on each side.

Rotation:

Sitting Tall-Knee Straight (as long as no sciatic pain, tingling or numbness). Inhale to lengthen the spine. Exhale to pull the right elbow back as the sternum rotates to the right. Inhale to release the right arm and sternum slowly to start position. Imagine drawing a bow and arrow. Repeat 4-5x to right with TheraBand on right foot and then 4-5x to left with TheraBand on left foot.

Remember:

1. Keep Knee Straight
2. Keep Pelvis Level: avoids anterior translation, hiking, or shifting laterally
3. Maintain Rib to Pelvis Alignment: avoids rib shift anteriorly, laterally or posteriorly and torso lean
4. Keep Shoulder Girdle Organization: avoids elevation, ab/adduction and keeps arms crossed
5. Keep Head Alignment: avoids forward head or jutting of chin
6. Perform 4-5 repetitions with band on right leg. Repeat on left leg.

Single Leg Knee Bend



Standing Tall in optimal posture with feet together, allow the weight to shift to the left leg. Keeping the pelvis level, lift the right foot off the ground and lift the leg until the knee is even with the hip (Imagine balancing a cup of tea on your knee). Allow the hip, knee and ankle of the standing leg to fold equally and bend as far as ankle range of motion will allow. Hold for 10 progressing to 60 seconds. When able to hold for 60 seconds, begin going up and down as if you are sliding up and down a wall. Repeat 10x each leg.

Remember:

1. Maintain tripod foot, subtalar neutral ankle alignment. Avoid pronation or collapsing arch.
2. Keep knee aligned over 2nd toe. Avoid valgus motion of the knee.
3. Keep Pelvis Level: avoid anterior translation, hiking, or shifting laterally .
4. Maintain Rib to Pelvis Alignment: avoids rib shift anteriorly, laterally or posteriorly and torso lean
5. Keep Shoulder Girdle Organization: avoids elevation, ab/adduction and keeps arms crossed
6. Keep Head Alignment: avoids forward head or jutting of chin
7. Perform 4-5 repetitions with band on right leg. Repeat with band on left leg.

3 Way Hip: Flexion, Abduction and Extension (of course!)



3 Way Hip Without Band:

Standing Tall in optimal posture with feet together, allow the weight to shift to the left leg. Keeping the pelvis level, lift the right foot off the ground and lift the leg until the knee is even with the hip (Imagine balancing a cup of tea on your knee). Inhale to lengthen the spine. Exhale to send the right foot forward to about 2" off the floor until the knee is straight. Inhale to return to the "stork" position. Exhale to send the right foot out to the side to about 2" off the floor until the knee is straight. Inhale to return to the "stork" position. Exhale to send the right foot back to about 2" off the floor until the knee is straight. Pay special attention to the pelvis position avoiding anterior pelvic motion or lumbar spine extension. Imagine connecting the pubic bone to the sternum to maintain pelvic alignment. Inhale to return to the "stork" position. Repeat 10x each leg. Add pulses if desired.

3 Way Hip WITH Band:

Standing Tall in optimal posture with feet together, allow the weight to shift to the left leg. Keeping the pelvis level, lift the right foot off the ground about 2" with the knee straight and ankle dorsiflexed. Inhale to lengthen the spine. Exhale to lift the right leg about 12". Inhale to barely touch the skin of the heel to the floor. Repeat 10x forward. 10x to the side and 10x to the back. Add pulses for a challenge. Pay special attention to the pelvis position when the hip extends, avoiding anterior pelvic motion or lumbar spine extension. Imagine connecting the pubic bone to the sternum to maintain pelvic alignment.

3 Way Hip with Standing Leg Bent:

Perform either of the above variations with the standing leg bent for an increased challenge.

Remember:

1. Maintain tripod foot, subtalar neutral ankle alignment of the standing leg. Avoid pronation or collapsing arch.
2. Keep knee aligned over 2nd toe. Avoid valgus motion of the knee.
3. Keep Pelvis Level: avoid anterior translation, hiking, or shifting laterally .
4. Maintain Rib-Pelvis Alignment: avoid rib shift anteriorly, laterally or posteriorly and torso lean
5. Keep Shoulder Girdle Organization: avoid elevation, ab/adduction and keeps arms crossed
6. Keep Head Alignment: avoid forward head or jutting of chin

TheraBand Chest Expansion, Tricep Press, Bicep Curls

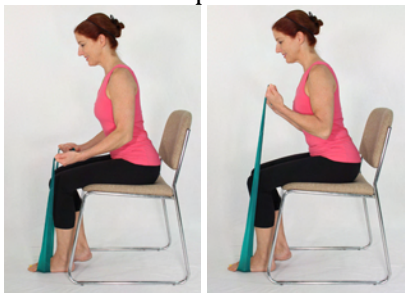
Chest Expansion



Tricep Press



Bicep Curl



Chest Expansion:

Sitting Tall-Knee Straight (as long as no sciatic pain, tingling or numbness). Inhale to widen collarbones and pull arms and humeral head back to the side seams. Exhale, pull humeral heads and arms back farther. Inhale, return to side seams. Exhale to return to start position.

Tricep Press:

Hinge forward in a neutral spine position. Place Theraband under right foot. Adjust tension to ability. Keep foot firmly planted to hold Theraband. Hold Theraband steady with left hand and reach right elbow back to begin. Inhale to lengthen the spine and “set” the scapula on the back. Exhale to straighten elbow. Maintain spine, shoulder and wrist alignment. Repeat 10x on each side.

Bicep Curl:

Hinge forward in a neutral spine position. Place Theraband under right foot. Adjust tension to ability. Keep foot firmly planted to hold Theraband. Hold Theraband with both hands palm up and wrist straight. Inhale to lengthen the spine and “set” the scapula on the back. Exhale to bend the elbows. Maintain the elbow beside the waist throughout the movement. Repeat 10x on each side.

Remember:

1. Keep Knee Straight
2. Keep Pelvis Level: avoids anterior translation, hiking, or shifting laterally
3. Maintain Rib to Pelvis Alignment: avoid rib shift anteriorly, laterally or posteriorly and torso lean
4. Keep Shoulder Girdle Organization: avoid elevation, ab/adduction and keeps arms crossed
5. Keep Head Alignment: avoid forward head or jutting of chin
6. Perform 4-5 repetitions with band on right leg. Repeat with band on left leg.

MARRIAGE PROPOSAL LUNGE:

Start Position

Both Knees Bend

½ Way Down

Touch Knee to Floor
Front Tibia/Back Femur Vertical



FAULTY:

Ankle Sagging

Posterior Tilt

Anterior Tilt

Pelvis Dropping

Pelvis Dropping



Keeping torso vertical, and parallel lower extremity alignment, step right foot at least 36" forward if subject is between 5-6' tall and at least 40" forward if student is over 6' tall. (measure from toes of right foot to toes of left foot). Imagine standing on a set of railroad tracks with feet 3-4" apart. Bend both knees and begin to descend toward the floor without torso moving forward. Front tibia and back femur should be vertical at bottom of lunge. Maintain neutral pelvis and vertical torso throughout the movement and if alignment is lost, stop the descent.

Students may wear shoes for the Lunge Test if great toe dorsiflexion is limited/painful or ball of foot is sensitive on the floor.

RIGHT Foot Forward:

1. Maintain lower extremity alignment with equal knee flexion bilaterally, keeping front tibia vertical and avoiding collapse of ankle and knee valgus
2. Keep pelvis neutral avoiding anterior or posterior tilt (tucking)
3. Keep ribcage centered over pelvis, avoiding lower ribs shifting or shearing forward.
4. Keep torso vertical
5. Keep head in alignment avoiding forward head or jutting chin.
6. Keep shoulder girdle organized avoiding protraction or elevation
7. Descend ½ way to the floor, if in good alignment of all of the above.
8. Bend knees so that back knee touches the floor and rise up again maintaining pelvis level, neutral spine and torso vertical.
9. May use chair back rest, dowel or cane for additional support (Use any assistance to achieve good alignment)

LEFT Foot Forward: REPEAT as above

Seated Abdominals

Slight Post Tilt



Lift One Leg



Lift 2nd Leg



Extend One Leg



Start



Roll Back



Seated Teaser:

With hands on the chair seat for additional support. Inhale, keeping a vertical and lengthened spine. Exhale, roll the pelvis back and lengthen the lumbar spine without losing the position of the ribcage and head. Feel the deep abdominals gently contract. Maintain the position of the pelvis and avoid abdominal bulge and lift one leg at a time. If well-controlled, lift both legs and add extension of the leg for a challenge. Repeat 4-5x each leg.

Seated Rollback:

Inhale to find a vertical lengthened spine posture. Exhale to roll back initiating with a pelvic curl. Avoid collapsing chest and ribcage. Keep sternum lifted and eyes looking forward. Inhale to return to vertical sitting tall. Repeat 4-5x.

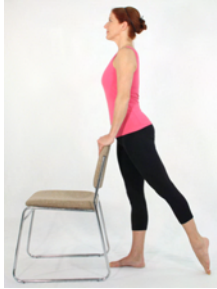
Seated Chest Stretch



Hold the backrest of the chair. Roll your shoulders down and back. Draw your shoulder blades together. Lean forward, open the collar bones and stretch the front of your chest. Breathe deeply 5-6 times! Enjoy!

Teeter Totter

Extend Hip



Rock Forward



Hinge Forward to a "T"



Add Shoulder Flexion/Hip Extension



Quadruped



Add Hip Extension



Add Shoulder Flexion/Hip Extension



Teeter Totter: Start with the left leg extended back with a neutral pelvis and straight knee. Place hands on back rest for additional support. Inhale, keeping a vertical and lengthened spine. Exhale, hinge forward, flexing the right hip. As long as neutral spine and pelvis are maintained, continue to hinge forward until body forms a "T" position. Imagine that you are one long plank from the head to the left foot. Inhale to return to starting position. Repeat 5-10 times on each side.

Teeter Totter-Quadruped: Start with the left leg extended back with a neutral pelvis and straight knee. Hinge forward and place both hands on the chair seat for additional support. Inhale, keeping a vertical and lengthened spine. Exhale, extending the left hip and add shoulder flexion with the hip extension. Inhale to return to starting position. Repeat 5-10 times on each side.

TheraBand Horizontal Abduction and Diagonals

Horizontal Abduction



Diagonals



Horizontal Abduction:

Sitting Tall-Knee Straight (as long as no sciatic pain, tingling or numbness). Inhale to widen collarbones and pull arms and humeral head back to the side seams. Hold Theraband without slack about 12" apart palms up and elbows softly straight. Imagine that you are holding a serving tray way out in front of you. Sit tall in optimal postural alignment. Inhale to widen collarbones and roll humeral heads back and down in the sockets. Exhale and pull Theraband apart as far as possible while maintaining the humeral head and scapular position. Avoid "squeezing" or adducting scapula. Repeat 10 times and increase band tension to progress.

Diagonals:

Sitting Tall-Knee Straight (as long as no sciatic pain, tingling or numbness). Inhale to widen collarbones and pull arms and humeral head back to the side seams. Hold Theraband without slack about 12" apart palms up and elbows softly straight. Imagine that you are holding a serving tray way out in front of you. Sit tall in optimal postural alignment. Inhale to widen collarbones and roll humeral heads back and down in the sockets. Exhale and pull the right thumb up toward the ceiling and the left thumb down and back toward the floor. Stretch the Theraband as far as possible while maintaining the humeral head and scapular position. Avoid "squeezing" or adducting scapula. Repeat 10 times and increase band tension to progress.

Remember:

1. Keep Knee Straight
2. Keep Pelvis Level: avoids anterior translation, hiking, or shifting laterally
3. Maintain Rib to Pelvis Alignment: avoids rib shift anteriorly, laterally or posteriorly and torso lean
4. Keep Shoulder Girdle Organization: avoids elevation, ab/adduction and keeps arms crossed
5. Keep Head Alignment: avoids forward head or jutting of chin
6. Perform 4-5 repetitions with band on right leg. Repeat with band on left leg.

VERTICAL SQUAT (Plie' Parallel and Externally Rotated):

Start Position	Vertical Torso Heels Down	Vertical Torso Heels Up	Ext Rotation Heels Down	Half Way Heels Up	Ext Rotation Full
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FAULTY:

Flexed Spine

Extended Spine

Posterior Tilt

Anterior Tilt



Begin with hips in either parallel or externally rotated position. Keeping torso vertical, flex hips, knees and ankles as far as possible. Pause, and if alignment is good and no pain occurs, continue to descend allowing heels to rise until ischium is 1-2" above the heels. Maintain neutral spine and vertical torso throughout the movement.

Remember:

1. Bend knees to at least 90 degrees with heels down, torso vertical and neutral pelvis/spine
2. Keep lower extremity alignment with knee over 2nd toe, avoiding pronation and valgus
3. Keep pelvis neutral avoiding anterior or posterior tilt (tucking)
4. Keep ribcage aligned over pelvis avoiding shearing or shifting of ribs forward
5. Keep torso vertical
6. Keep head in alignment avoiding jutting chin or head forward
7. Keep shoulder girdle organized avoiding elevation or protraction
8. No PAIN!

Dynamic Weight Shifts

Start



Step to Right



Step to Left



Step Behind



Be sure that the area around you is clear of exercise items and detritus. Stand in your optimal posture with hips turned out to about 45 degrees. Step to the right. Stop and take inventory of your alignment: Tripod Foot? Knee aligned over 2nd Toe? Pelvis neutral and facing forward? Torso Vertical? Neutral Spine? Repeat to the left. Then inhale to lengthen the spine. Exhale step out to the right, Inhale step to center, Exhale step to the left, Exhale to center and so on.... Add a step to the back. This one is a little more tricky so be careful that no objects are behind you and keep your focus forward! Enjoy and feel free to put on some music!

Psoas Stretch (Mermaid)

Marriage Proposal



Extend Hip



Extend knee



Reach Arm Up



Lift Ribs off Pelvis



Start with the right buttock off the chair seat and left buttock on and use hands on back rest or seat if necessary for additional support. A dowel or cane can be used also for support. Inhale, keeping a vertical and lengthened spine. Exhale, extend the left hip. Keep pubic bone lifted and feel the deep abdominals gently contract to maintain position of pelvis. If possible and well-controlled, extend knee of the back leg to deepen the hip flexor stretch. Then, reach left arm up to the ceiling and reach left ribcage off pelvis. Take 4-5 deep breaths and repeat on opposite side.

Meditation, Gratitude and Relaxation:



Take a few moments at the end of each class to sit quietly and feel the energy streaming through your body. Imagine healing light traveling to body parts that need attention. Send thoughts of gratitude to your body for carrying you this far and bringing you to this class. Send gratitude to friends or family who may be ill or suffering. Place a smile on your pelvis, a smile across your collarbones and bring a smile to your face!

Relaxation and stress reduction has been shown in research to reduce cortisol levels and increase serotonin levels. High levels of cortisol are known to cause bone loss. It's possible that meditation can indirectly affect your bones in a positive way!