

# Identifying and Treating Mobility and Stability Issues of the Trunk Through the Use of Therapeutic Exercise Strategies



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### Course Description:

This class is a 4 hour “hands-on” workshop exploring mobility and stability issues of the trunk through observation and evaluation of movement, followed by addressing these issues with the use of therapeutic exercise and home exercise instruction.

A small didactic overview is followed by a workshop “Lab” where participants will engage in therapeutic exercise interventions paired with mobility and stability issues.

### Learning Objectives:

1. Participant will be able to identify at least 4 mobility issues potentially affecting trunk function.
2. Participant will be able to identify at least 4 stability issues potentially affecting trunk function.
3. Participant will be able to create a therapeutic exercise program to improve at least 4 mobility issues affecting trunk function.
4. Participant will be able to create a therapeutic exercise program to improve at least 4 stability issues affecting trunk function.

Class Schedule:

9:00 am to 9:30 am – Power Point Presentation

9:30 am – 10:15 am – Identifying Mobility and Stability Issues Through Movement.

Two Components to Decreased ROM – tissue mobility and end range strength. Identifying both.

10:15 – 11:15– 8 Stretches Commonly Done Incorrectly, Partner Stretches, Therapy Ball Stretches, Self-Release and Mobilization

11:15 – 11:30 Break

11:30 am to 12:30 pm – Open Shoulder and Hip Protocol, Back Balancing Protocol, Dynamic Trunk Protocol, Dynamic Core Activities

12:30 pm to 12:45 – Core Games and Fun Activities

12:45 – 1:00 Questions and Answers

**Example: Most Common Mobility Issues in Our Gymnasts:**

Issue:	Substitution:	Symptoms:	Solution:
<p>Poor Wrist flexibility</p>	<p>Elbow hyperextension Shoulder flexion posturing (Compounded with elbow flexion and wrist extension)</p>	<p>Wrist jamming (pain) with tumbling and vault Elbow hyperextension injuries Carpal bone injuries Poor handstand alignment</p>	<p>Dowel stretch with elbow extension and elbow flexion. Don't allow gymnasts to hyperextend elbows during this stretch!!!! Concentric Elbow Flexion (Biceps) strength. Eccentric wrist extension strength.</p>
<p><b>Poor Shoulder Flexion Mobility</b> <b>Shortness of Lat muscle group</b></p>	<p><b>Overuse of lumbar spine extension which leads to compression of low back</b></p>	<p>Low back pain OR Shoulder Pain in end range Difficulty with getting hands to vault board quickly and/or Difficulty with reaching for backhand springs, etc. Poor handstand alignment</p>	<p>Lat stretches Training to facilitate use of shoulder flexion and thoracic extension vs. overextension of lumbar spine for skills. Open shoulder with pelvic tilt protocol AND/OR Lat Stretches End range shoulder stretches End range shoulder strengthening</p>
<p><b>Decreased mobility of Thoracic spine</b></p>	<p><b>Increased compression of thoracic spine</b> <b>OR</b> <b>Impingement of shoulders in end range</b> <b>OR</b> <b>Increased lumbar spine extension</b></p>	<p>Thoracic spine pain and/or Low back pain OR Shoulder Pain in end range Difficulty with getting hands to vault board quickly and/or Difficulty with reaching for backhand springs, etc. Poor handstand alignment</p>	<p>Thoracic spine mobilization Training to facilitate use of shoulder flexion and thoracic extension vs. overextension of lumbar spine for skills. Self-Release techniques to decrease muscle hypertonicity in thoracic spine.</p>



<p><b>Poor Hip Extension Mobility</b></p>	<p><b>Hyperextension of lumbar spine</b>  <b>Increased hip angle</b>  <b>Uneven length of hip flexors contribute to SI dysfunction</b></p>	<p>Low Back Pain  Facet inflammation/fracture  SI dysfunction/pain  Back leg difficulty with split motions  Excessive lumbar extension with split motions  Hip position in splits is rotated which can contribute to SI problems</p>	<p>Hip Flexor stretches -with careful observation to ensure no substitutions!!!!!!  Back Extensor stretches  Lower abdominal strengthening  Glut Med strengthening  Open Hip with pelvic tilt protocol</p>
<p>Poor ankle mobility</p>	<p>Knee valgus in landing position  Uneven mobility can lead to SI dysfunction</p>	<p>Frequent ankle jamming/pain (coming up short)  Pain in front of ankle  Heel cord strain/sprain/tear  Altered landing position leading to knee pain  Uneven load with compression leading to SI pain</p>	<p>Ankle mobilization with strap  Ankle stretches with knee in extension and knee in flexion with careful observation to avoid substitutions Squats on dowel with careful observation to avoid substitutions  Lunges with careful observation to avoid substitutions  Jumps with careful observation to avoid substitutions</p>
<p><b>Tight Hamstrings</b></p>	<p><b>Strain to back with splits, leaps, jumps</b>  <b>Uneven hamstring length can contribute to SI dysfunction</b>  <b>Overstretching of back flexors</b></p>	<p>Forward leg difficulty with leaps/jumps  Excessive lumbar extension with split positions  Hip position in splits is rotated which can cause SI problems</p>	<p>Hamstring stretches focusing on stabilizing pelvis with hamstring lengthening  End range strengthening with stabilized pelvis  Careful attention to substitution with split stretching and strengthening</p>

**Example: Most Common Stability Issues in Our Gymnasts:**

Issue:	Substitution:	Symptoms:	Solution:
<p>Poor Wrist Extension Strength</p>	<p>Elbow hyperextension Shoulder flexion posturing in UE weight bearing (Compounded with elbow flexion and wrist extension)</p>	<p>Wrist jamming (pain) with tumbling and vault Elbow hyperextension injuries Carpal bone injuries <b>Poor end range wrist extension control and eccentric wrist extension control</b></p>	<p>Dowel stretch with elbow extension and elbow flexion. Don't allow gymnasts to hyperextend elbows during this stretch!!!! <b>Concentric Elbow Flexion (Biceps) strength.</b> <b>Eccentric wrist extension strength</b></p>
<p>Poor Shoulder Strength in End Range</p>	<p><b>Poor Shoulder Flexion Mobility</b> <b>Shortness of Lat muscle group</b> <b>Overuse of lumbar spine extension which leads to compression of low back</b></p>	<p>Low back pain OR Shoulder Pain in end range <b>Difficulty with end range contraction of shoulder flexion and abduction</b> <b>Weakness of scapular retractors and rotator cuff muscles</b></p>	<p>Lat stretches Training to facilitate use of shoulder flexion and thoracic extension vs. overextension of lumbar spine for skills. <b>Open shoulder with pelvic tilt protocol</b> AND/OR Lat Stretches End range shoulder stretches <b>End range shoulder strengthening</b></p>
<p>Poor Posterior Chain Strength often accompanied with over contraction of hip flexors and poor lower abdominal control</p>	<p><b>Hyperextension of lumbar spine</b> <b>Increased hip angle</b> <b>Decreased strength of Glut Med, Multifidus, Back Extensors, and lower abdominals</b></p>	<p>Low Back Pain Facet inflammation/fracture SI dysfunction/pain <b>Muscle imbalance and assymetry can lead to SI dysfunction and LBP</b></p>	<p>Hip Flexor stretches -with careful observation to ensure no substitutions!!!!!!! <b>Lower abdominal strengthening</b> <b>Glut Med strengthening</b> <b>Control/contraction of back extensors</b> <b>Open Hip with pelvic tilt protocol</b> <b>Controlled dynamic contraction with Protocol using push/pull and med ball exercises</b></p>

Decreased knee strength/control	Knee valgus in landing and takeoff position Locking out knee	Knee pain Tightness/pain in ITB	<p>Monitor growth spurts as knee pain is more prevalent during this time</p> <p>Roll out quads and ITB</p> <p>Knee strengthening with focus on vastus medialis</p> <p>Landing/take-off drills with proper knee positioning</p> <p>Lunges and knee dips with monitoring of proper knee position</p>
Poor ankle stability	Knee valgus in landing position	<p>Frequent ankle sprains</p> <p>Frequent ankle jamming/pain (coming up short)</p> <p>Pain in front of ankle</p> <p>Heel cord strain/sprain/tear</p> <p>Altered landing position leading to knee pain</p> <p>Uneven load with compression leading to SI pain</p>	<p><b>Ankle strengthening protocol</b></p> <p><b>Lunges with careful observation to avoid substitutions</b></p> <p><b>Jumps with careful observation to avoid substitutions</b></p> <p><b>**Ankle strengthening should be done without tape in order to strengthen full ROM!!</b></p>

## Top 8 Modified Stretches

### 1. Hip Flexor Stretch:

- Kneel on the floor with your back to the wall.
- Place one leg so that your lower leg rests against the wall from the knee upward.
- Do a pelvic tilt.
- Make sure your hips are square.
- Push hip forward on the side that is against the wall.

YES:



NO:



### 2. Hamstring Stretch:

- Sit in a long sitting position.
- Sit “tall” and push your “sit bones” behind you so that you are slightly arched.
- Raise your arms to shoulder height.
- Glide arms forward stretching your hamstrings.
- Do this with toes flexed and toes pointed.
- Progress to placing a PVC under your heels and completing the same process.

YES:



NO:



### 3. Pidgeon Modified:

- Begin in Pidgeon Position
- Slowly rock your hips side to side until you feel the most stretch in your buttock area/outside hip area.
- If this does not produce a stretch bring bent knee forward more and/or rotate your trunk in the opposite direction.
- If this does not work than switch to this stretch (3b.)

#### 3b. Piroformis Stretch:

- Lie on your back and cross one knee over the other knee.
- Pull both knees toward your chest.

YES:



NO:



### 4. Heel Cord Stretch:

- Begin in “Downward Dog” position.
- Make sure your heels are all the way on the ground. If you can’t get them on the ground bring hands closer to feet.

YES:



NO:





5. Heel Cord Stretch with your knee bent:

- Start in a half-kneeling position with the knee that is “up” in front.
- Keeping your heel down move your knee as close as you can over your foot making sure your foot is in a neutral position.
- Remember that this feels less like a “stretch.” You are increasing range in your ankle joint more than your muscle.

YES:



NO:



6. Wrist Stretch:

- Place palms on the floor with fingers pointing toward you.
- Keep elbows straight and walk knees backward until you feel a good stretch.
- Make sure your elbows are not hyperextended!!!!
- Now do the same thing with your elbows bent.

YES:



NO:



7. Cat Stretch with arms bent:

- Begin in cat stretch.
- Bent elbows and bring elbows close to your head.
- Stretch through your shoulders rather than your back.
- Use a partner to help you if needed.

YES:



NO:



8. Split Stretch With or Without Sliders:

- Square hips with front knee straight.
- Slowly slide into a split.
- Stop when your hips begin to turn.

YES:



NO:



## Back Stretches Using Therapy Ball

1. **Backward Stretch:** Begin by sitting on the therapy ball. Slowly walk your feet forward while lying backward over therapy ball.  
Stretch arms over your head for a full trunk extension.

You can vary and modify this stretch as follows:

To make it less of a stretch you could use a larger ball, place a pillow under the head, or keep arms flexed at chest.

To make it a greater stretch you could use a smaller ball, place small weights on the arms/legs, and reach out further with the arms/legs.

Hold for 90-120 sec.

2. **Sideward Stretch:** Begin by half-kneeling next to ball. Lean your trunk sideways over the ball and walk your legs out to the side. (Keep legs scissored apart for stability.) Lie sideways over the ball stretching your upper side. Experiment with varying degrees of rotation and reaching to find the maximal stretch, and then hold for 90-120 sec.  
You can intensify the stretch by using small weights at wrists.

3. **Forward Stretch:** Lie forward over the ball. You can provide yourself with some low back traction if you use a large ball and “hang” your legs down toward the ground. Vary the amount of stretch by experimenting with how far your head is down toward the ground.

Hold for 90-120 sec.



## Partner Stretches:

Pick at least 4 of the below stretches that you feel you could most benefit from

### Upper Body:

#### Partner Stretches:

For each Area the partner will bring the gymnast to the end of their comfortable range.

The gymnast will then contract their muscles opposite the direction of stretch.

The partner will then bring the gymnast into more of a stretch. Repeat 3 times.

Now the gymnast brings themselves into their maximal range and contracts against their partner 10 times for a count of 5.

#### 1. Lat Stretch



#### 2. Triceps Stretch



### 3. Wrist Flexion Stretch



### Lower Body

#### Partner Stretches:

For each Area the partner will bring the gymnast to the end of their comfortable range.

The gymnast will then contract their muscles opposite the direction of stretch.

The partner will then bring the gymnast into more of a stretch. Repeat 3 times.

Now the gymnast brings themselves into their maximal range and contracts against their partner 10 times for a count of 5.

#### 1. Hamstring Stretch



## 2. Groin Stretch



## 3. Hip Flexor Stretch



## 4. Toe Point and Flex



## Self-Release and Partner Release:

Directions for use:

The principle for using this tool is to understand that “normal” tissue is never hot, hard, or tender.

Becoming proficient at finding your trigger points and areas of discomfort is a wonderful tool for self-help.

The principles of self-release require finding trigger points and applying pressure to those areas for at least 90-120 sec. Initially there will be tenderness to touch. As the tissue “releases” the tenderness decreases.

Use the peanut to find your “hot, hard, or tender” spots.

Modify the amount of pressure you use to your level of comfort by using the peanut on a bed (least pressure,) against a wall (medium pressure,) or on the floor (most pressure.)

Apply pressure for 30 seconds initially and increase this to 90-120 seconds once you become familiar with Peanut use.

The large therapy ball can be used to provide compression for muscle relaxation.



### “Rolling out:”

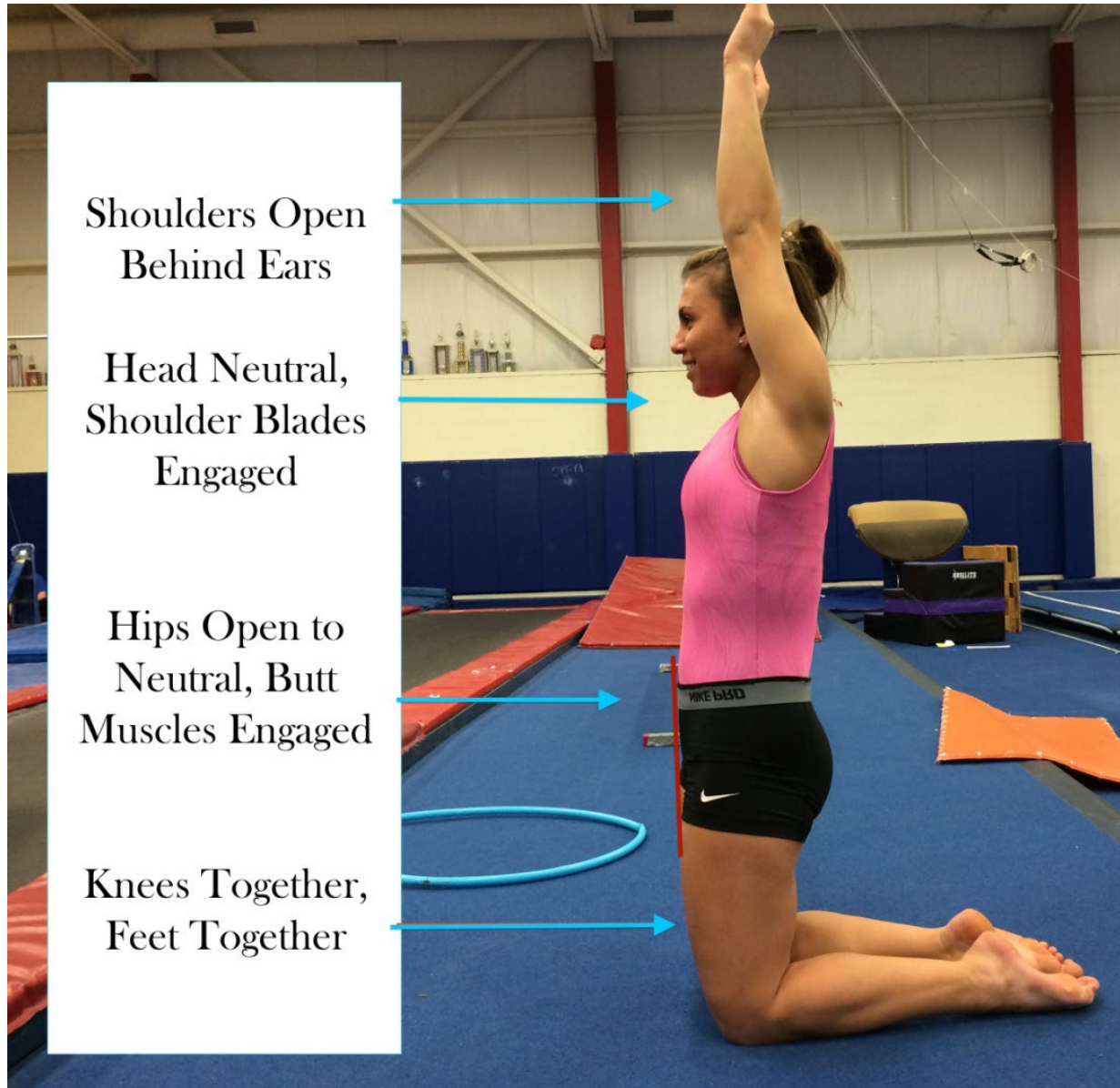
“Rolling out” your tissue with a foam roller or other self-release tool is useful to “wake-up” muscles you are about to use for exercise. The feeling is more intense and the motion is more abrupt.

Use “Self-release” for muscles you are trying to make feel better due to pain. Use “rolling out” when you are preparing these muscles for work out.



## Open Shoulders and Hips with Core Stabilization Drills

Goal Position:



## Releases using tennis balls and 4 inch balls:

### 1. Hip Flexor Release using the 4 inch playground ball:

- Place the ball about two inches to the side of your belly button. Lie on ball and hold for 30 seconds
- Now Place the ball just under your ribs. (About 2 inches to the side of your midline.) Hold for 30 seconds.
- Now Place the ball just above your pelvic bone. (About 2 inches to the side of your midline.) Hold for 30 seconds.



### 2. Lat release using tennis ball:

- Find your lat muscle by lifting your arm and feeling just in front of your shoulder blade.
- Place tennis ball against wall and lean into the wall with ball on lat muscle.
- You can also do this in sidelying with the foam roller.



## Partner Stretches:

### 1. Hip Flexor Stretch:

- Gymnast lies on belly with one leg tucked under chest.
- Partner grasps the opposite leg with knee flexed and lifts toward ceiling while pushing buttocks down on the same side.



### 2. Lat Stretch:

- Gymnast kneels on both knees and places arms in front of them on the floor.
- Partner bends elbow and lifts arm upward while also keeping fingers pointing toward ceiling.



## Individual Stretches:

### 1. Hip Flexor Stretch:

- Kneel on the floor with your back to the wall.
- Place one leg so that your lower leg rests against the wall from the knee upward.
- Do a pelvic tilt.
- Make sure your hips are square.
- Push hip forward on the side that is against the wall.



### 2. Lat Stretch:

- The gymnast holds dowel or parallel about shoulder width apart, with the hands in a front giant grip.
- Place elbows on the edge of a low block.
- While keeping the lower spine completely neutral and the gluts squeezed press head down towards the ground. It is helpful to exhale as you push to the floor.





## Theraband Drills:

### Starting Position:



#### 1. Upward Reach with Theraband.

- Place theraband around upper hips/lower waist.
- Lift arms overhead while squeezing buttocks and doing a pelvic tilt.
- While maintaining pelvic tilt and butt squeeze push shoulder blades downward.



## 2. Downward Diagonal Pull:

- Pre-set yourself by doing a pelvic tilt, squeezing your buttocks, and completing a big diaphragmatic breath.
- Grasp theraband with both hands and pull from one side to the other and from an upward motion to a downward motion.



## 3. Upward Diagonal Pull:

- Pre-set yourself by doing a pelvic tilt, squeezing your buttocks, and completing a big diaphragmatic breath.
- Grasp theraband with both hands and pull from one side to the other and from a downward motion to an upward motion.



## 4. Theraband Reaches Behind Back:

- Pre-set yourself by doing a pelvic tilt, squeezing your buttocks, and completing a big diaphragmatic breath.
- Kneel with theraband under your lower leg.
- Place other end of theraband around dowel.
- Begin by sitting on your knees with dowel behind your head resting on your shoulders.
- Move to kneeling position while maintaining your pelvic tilt.
- Now lift arms up over head while maintaining your pelvic tilt.





## Partner Exercises with Dowel:

### 1. Forward/Backward Taps:

- Pre-set yourself by doing a pelvic tilt, squeezing your buttocks, and completing a big diaphragmatic breath. You are kneeling on both knees.
- Maintain this position while your partner challenges you by tapping the dowel forward and backward.



### 2. Diagonal Taps:

- Pre-set yourself by doing a pelvic tilt, squeezing your buttocks, and completing a big diaphragmatic breath. You are half-kneeling with one foot in front of you.
- Maintain this position while your partner challenges you by tapping the dowel forward and backward.



## Back Balancing Protocol (Rehabilitation)

Try to work up to 30 reps for each exercise. The idea is to create fatigue without a lot of resistance.

### Hip Extensions:

1. One legged Bridge:
  - Bring one knee to your chest. (Prevents use of low back.)
  - Place your opposite foot on the floor.
  - Bridge upward while taking a belly breathe in.
  - Lower your hips and breathe out.
  - Switch to the other side.
2. One legged Bridge with Side kick.
  - Start with one foot on the ground and other leg extended with knees together.
  - Bridge upward.
  - Stating in the bridge **without either of your hips dropping** bring extended leg out to the side and then back in to touch opposite leg.
  - Now lower bridge and start again.
3. Bridges against wall:
  - Place your feet against a wall or mat with your knees bent. **Knees should be about 6 inches apart.**
  - Push your heels into the wall while lifting your buttocks off ground. Make sure you are doing a pelvic tilt to avoid arching your back.
  - As your hips raise breath in as in exercise one.
  - As your hips come down allow your breath to come out.
4. Bridge against the wall in needle position.
  - Place one foot against the wall and extend other leg straight up toward ceiling.
  - Push your heel into the wall lifting your extended foot straight upward.
  - Slowly lower to the ground and repeat.
5. Hip Extensions on Hands and Knees:
  - Start on your hands and knees.
  - Left one thigh so that it is level with trunk.
  - Bend your knee.
  - Do a pelvic tilt.
  - From this position lift your leg up toward ceiling.

### Additional Hip Strengthening:

#### Theraband Kicks:

6. Lie on your back. Arms out to the side and fingers on the ground (pretty fingers.)
  - Do a pelvic tilt and keep your back on the ground the whole time.

- Kick one leg up to your head and keep the other leg on the ground. Progress to using theraband.
7. Hold legs up in a pike.
    - Kick legs out to the side. Progress to using theraband.
  8. Lie on your side on a line.
    - Keep body as straight as possible on the line with your upper arm in front of you and your hand flat on the ground. Maintain a pelvic tilt.
    - Kick leg up toward ceiling. Progress to using a theraband.
  9. In standing:
    - Place theraband around both legs.
    - Maintain a pelvic tilt while kicking backward with one leg.
    - Now kick backward with opposite leg.

### **Back Extension Exercises:**

10. Back Extensions (swimming exercise):
  - Lie on your stomach with your arms overhead.
  - Do a pelvic tilt.
  - Lift one leg and the opposite arm toward the ceiling,
  - Now lift the other leg and opposite arm toward the ceiling.
11. “Bird Dog” Exercises:
  - Start on your hands and knees.
  - Do a pelvic tilt to activate your core.
    - a. Keeping a flat back raise one arm and then the other arm, breathing in when you lift arm and out when you bring arm down.
    - b. Keeping a flat back raise one leg and then the other leg, breathing in when you lift leg and out when you bring leg down.
    - c. Keeping flat back raise one leg and one arm at the same time. Breathe in when raising limbs and out when lowering.
    - d. To make this even more difficult begin on a line or even the low beam and follow the same sequence.
12. Plank exercise “Around the World:”
  - Get in a “plank position” and activate core by doing a pelvic tilt/making a flat back.
  - Alternate lifting first one arm then the other arm, then lifting one leg and then the other leg “around the world.”
  - Make sure you are breathing in each time you lift and out when bringing limb back down.
  - Make sure your core is activated throughout the whole process.

13. Back Extensions (Advanced:)

- Lie with your trunk halfway off of a mat.
- Do a pelvic tilt.
- Lift your upper trunk upward toward the ceiling with your arms reaching out in front of you.

14. Leg Extensions (Advanced:)

- Lie with your legs off of a mat.
- Do a pelvic tilt.
- Lift both legs up toward the ceiling.

**Lower trunk strength:**

15. “Dead bug” Exercises:

- Lie on your back with your arms and legs pointing up toward the ceiling.
- Do a pelvic tilt by flattening your back against the floor.
- Lift your upper body upward while taking a belly breath in.
- Lower your body while letting your breath out.

16. “Dead bug” with a twist:

- Do the same as above but bring one shoulder toward one hip in the “dead bug” posture. Switch to the other side.

17. Side Plank “Clam Shell” Exercise:

- Lie on your side with your knees bent in front of you.
- Lift up to a side plank.
- Activate your core by doing a pelvic tilt.
- Move upper leg in a “clam shell” motion while breathing in.
- Breathe out.
- Now straighten top leg and lift upward while breathing in.
- Bring leg to starting position and breathe out.
- Complete process on both sides.

18. Side-sitting Exercise:

- Begin in a kneeling position.
- Without using your hands lower yourself to a side sit. (Breath out.)
- Without using your hands lift yourself back to kneeling. (Breathe in.)
- Repeat on the other side.

19. Hamstring strength in Standing:

- Place an ankle weight on your leg.
- Keeping thighs together, bend your knee.
- Your foot should come up toward your bottom.

### **Additional Activities: (Advanced)**

20. Walk backward up the stairs.
21. Face sideways on stairs and hold railing. “Braid” up and down stairs first facing one direction and then facing the other direction.
22. Ride the stationary bicycle backward.
23. Holding weights in your hands lunge forward while walking and backward while walking. **Maintain pelvic tilt and watch your knees to make sure they are not moving inward or outward.**

### **Important Partner Stretches:**

For each Area the partner will bring the gymnast to the end of their comfortable range. The gymnast will then contract their muscles opposite the direction of stretch. The partner will then bring the gymnast into more of a stretch. Repeat 3 times. Now the gymnast brings themselves into their maximal range and contracts against their partner 5 times for a count of 5.

#### Lower Body:

- Hip Flexor Stretch
- Hamstring Stretch
- Heel Cord Stretch
- Quad Stretch
- Adductor Stretch

### **Stretches for Gymnasts Returning After Injury:**

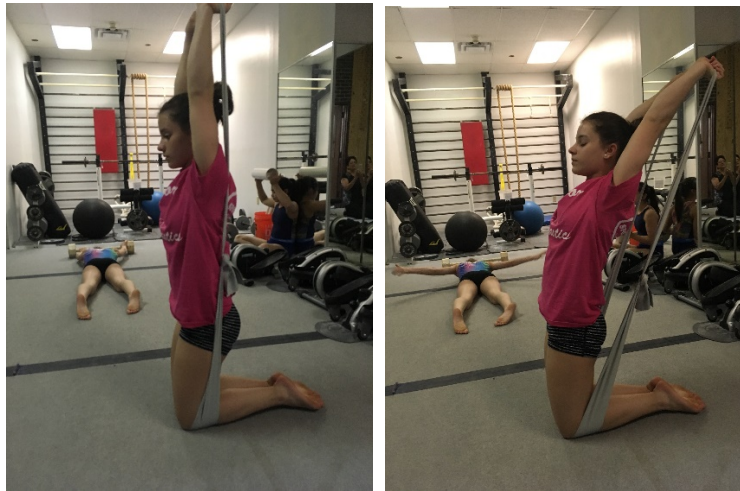
1. Back Flexion:
  - Lie on your back with your feet on the floor.
  - Bring one knee to your chest then the other knee to your chest.
  - Pull both knees in as far as you can.
  - Bring one foot to the ground then the other foot to the ground.
2. Lower Trunk Rotation:
  - Lie on your back with your feet on the floor.
  - Rotate your knees as far as you can in one direction while keeping your shoulders on the floor.
  - Switch to the other side.
3. Back Extension:
  - Lie on your stomach.
  - Do a pelvic tilt and push up onto your elbows.
  - Progress to pushing up to your hands.
  - Follow above with “rock and roll” on your back.



## Dynamic Core Exercises 20 Minute Protocol

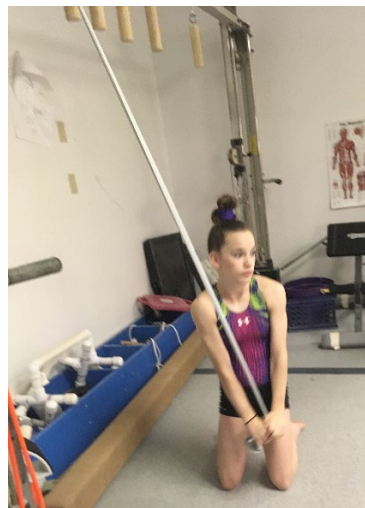
### 5. Backward Reach with Theraband.

- Sit back on your heels with theraband under your knees
- Grasp with hands in front of your body
- Raise to full kneeling position.
- Lift theraband overhead.
- Do a pelvic tilt and extend backward.
- Come back to hollow
- Sit back on your heels



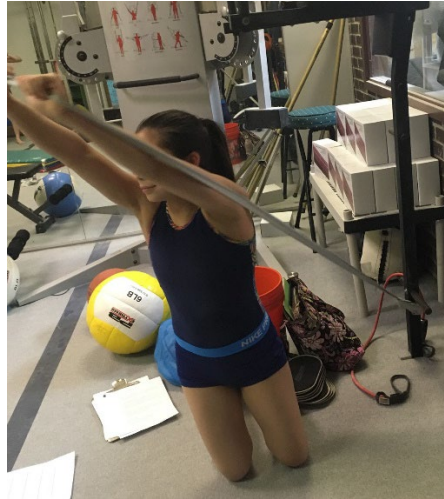
### 6. Downward Diagonal Pull:

- Pre-set yourself by doing a pelvic tilt, squeezing your buttocks, and completing a big diaphragmatic breath.
- Grasp theraband with both hands and pull from one side to the other and from an upward motion to a downward motion.
- In end range rotate trunk further.



7. Upward Diagonal Pull:

- Pre-set yourself by doing a pelvic tilt, squeezing your buttocks, and completing a big diaphragmatic breath.
- Grasp theraband with both hands and pull from one side to the other and from a downward motion to an upward motion.
- In end range rotate trunk further.



One legged Bridge on Bosu or therapy ball:

- Bring one knee to your chest. (Prevents use of low back.)
- Place your opposite foot on the ball.
- Bridge upward while taking a belly breathe in.
- Lower your hips and breathe out.
- Switch to the other side.



8. One legged Bridge with Side kick.

- Start with one foot on the ground and other leg extended with knees together.
- Bridge upward.
- Stating in the bridge **without either of your hips dropping** bring extended leg out to the side and then back in to touch opposite leg.
- Now lower bridge and start again.



9. Back Extensions (swimming exercise):

- Lie on your stomach with your arms overhead.
- Do a pelvic tilt.
- Lift one leg and the opposite arm toward the ceiling,
- Now lift the other leg and opposite arm toward the ceiling.



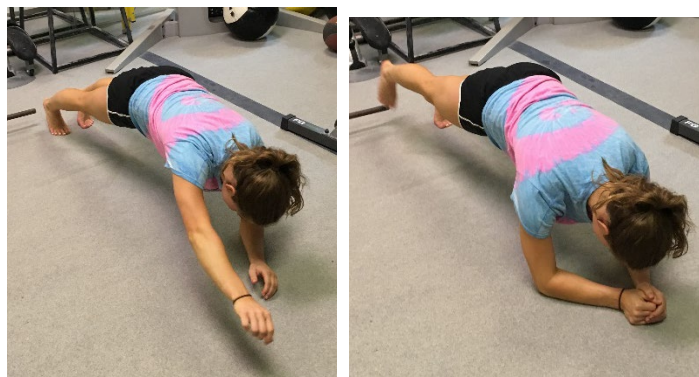
10. “Bird Dog” Exercises:

- Start on your hands and knees. Place theraband on opposite hand and foot.
- Do a pelvic tilt to activate your core.
  - e. Keeping a flat back raise one arm and then the other arm, breathing in when you lift arm and out when you bring arm down.
  - f. Keeping a flat back raise one leg and then the other leg, breathing in when you lift leg and out when you bring leg down.
  - g. Keeping flat back raise one leg and one arm at the same time. Breathe in when raising limbs and out when lowering.
  - h. To make this even more difficult begin on a line or even the low beam and follow the same sequence.



11. Plank exercise “Around the World:”

- Get in a “plank position” and activate core by doing a pelvic tilt/making a flat back.
- Alternate lifting first one arm then the other arm, then lifting one leg and then the other leg “around the world.”
- Make sure you are breathing in each time you lift and out when bringing limb back down.
- Make sure your core is activated throughout the whole process.



12. Side-sitting Exercise:

- Begin in a kneeling position. Place theraband under knees and grasp in front of you.
- Without using your hands lower yourself to a side sit. (Breath out.)
- Without using your hands lift yourself back to kneeling. (Breathe in.)
- Repeat on the other side.



13. Roller Walk:

- Place knees on slam ball and hands on 4 inch PVC Roller
- Engage core while you walk roller out as far as you can and then back to neutral.





14. Around the World:

- Sit on therapy ball
- Keeping your upper trunk stable slowly roll your hips forward, back, side, side in a circle “around the world”
- Repeat to the other side.



15. Slider “Push” Activity:

- Place slider on feet and begin in plank position.
- Push your body backward while maintaining a hollow position.

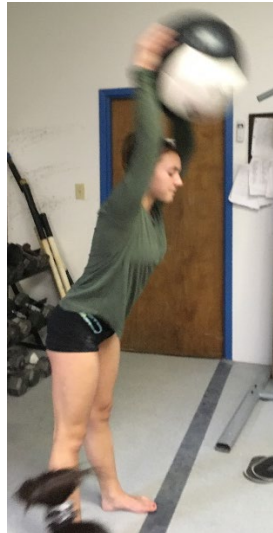


## Dynamic Trunk Activities for 20 Minute Protocol:

### Slam Ball:

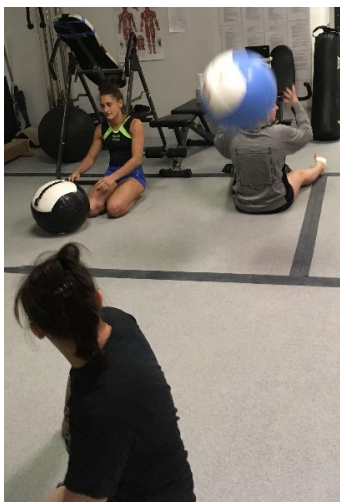
#### 1. Overhead to Ground:

- Pick up the ball from the floor by bending your knees/squatting and doing a pelvic tilt.
- Maintain your pelvic tilt as you lift the ball over head.
- Forcibly throw the ball to the ground.
- If doing activity with a partner allow the ball to hit the ground before picking up.



#### 2. Backward Over Head in Sitting Position:

- Begin by sitting on the ground in a slight straddle.
- Engage core and do a pelvic tilt.
- Throw ball over your head and behind you.
- If doing activity with a partner allow the ball to hit the ground before picking up.



3. Rotational Throw:

- Begin in half-kneeling position facing sideways to the direction of your throw.
- The leg with the knee down faces the side you are throwing to.
- Begin with the ball on the knee up side.
- Engage core and do a pelvic tilt.
- Reach over your knee and pick up the ball.
- Twist with the ball in your hand and throw to the opposite side.
- Switch sides.
- If doing activity with a partner allow the ball to hit the ground before picking up.



4. Overhead High Throw:

- Begin with the ball at chest level.
- Engage your core and do a pelvic tilt.
- Push Ball upward and slightly outward as if you were throwing a basketball.
- If doing activity with a partner allow the ball to hit the ground before picking up.





## Other Activities:

### 5. Sled or Slider Pull:

- “Puller” engages gluts by” squeezing buttock” with each step backward while also completing a pelvic tilt to engage abs.
- If using the sliders the person being pulled maintains a hollow position.



### 1. Hollow Lift:

- One person in backward plank with feet on slam ball.
- Engage hollow position
- Second person does a pelvic tilt and lifts person upward and back to ball repeatedly.



6. Hula Hoops:

- Use weighted Hula alternating 90 seconds on good side and 90 seconds on bad side.
- Can also have Hula contests...



7. Backward Elliptical Volleyball:

- Pedal backward while hitting ball upward in the air to partners.



Core Games:













Core Activities with a Partner:







