

Hinge Theory Part II: Independent Home Program

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① Explanation

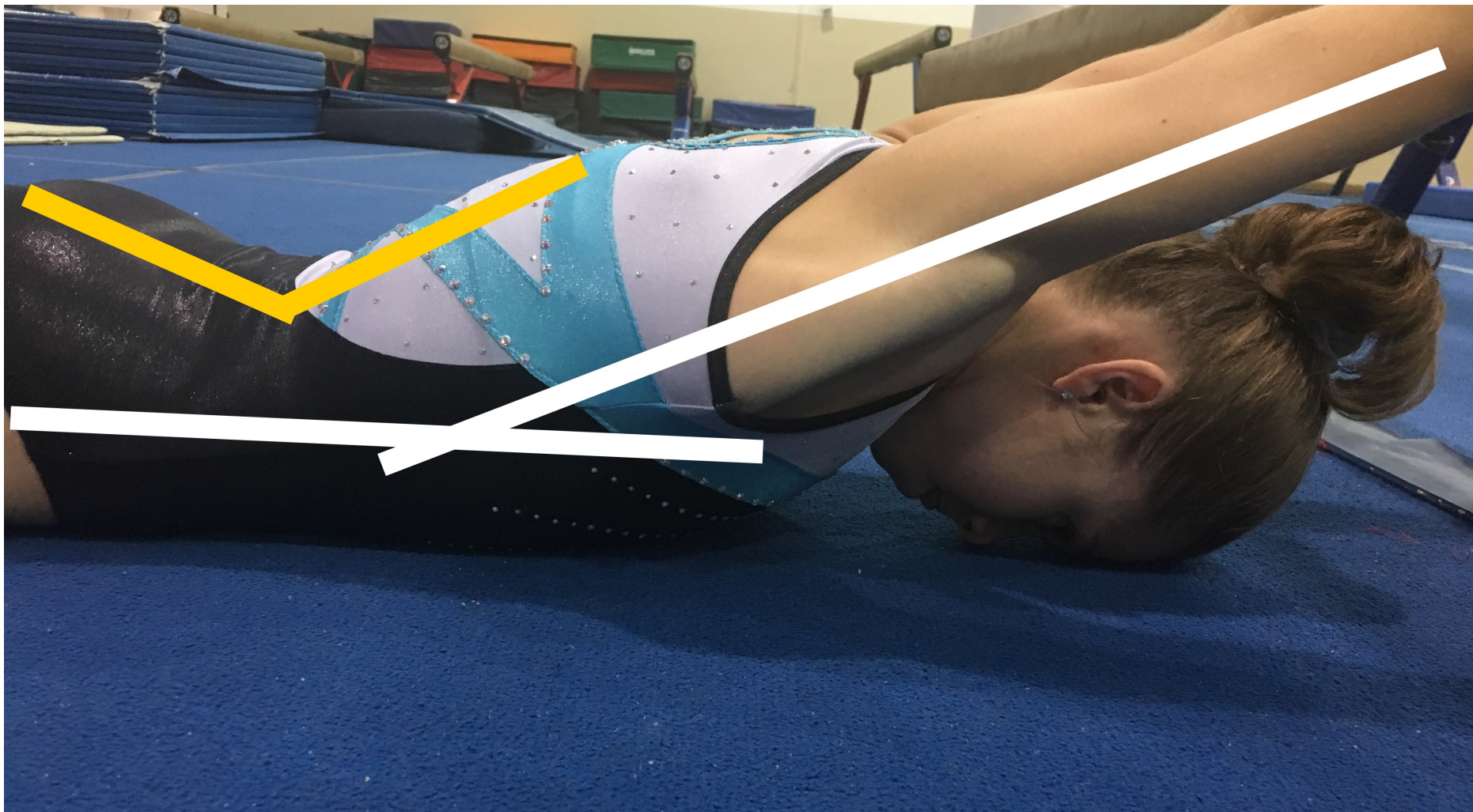
- Sets:
 - Repetitive exercises are to be done in proper quality over quantity. Within sets, fatigue may happen. Between sets, fatigue will happen. Stop activity if quality is suffering
- Reps:
 - Perform reps to their completion of full activity from start to finish
 - If fatigue occurs, stop sets early if biomechanics are compromised
- Holding:
 - For exercises that involve static holding for endurance strength, fatigue also may happen. Do not push toward end goal if quality is compromised
- Help:
 - If an assistant is needed, please ensure that they are trained properly on how to hold, where to hold and pressures to apply. Force should never be applied and held to the discomfort of the patient

② Shoulders

- ① Prone axillary hang
- ② Partner bridge stretch
- ③ Doorway stretch
- ④ Vertical Foam Roll
- ⑤ Bent Elbow Table Trap Stretch
- ⑥ Prone Position Dance 360
- ⑦ Handstand Position Dance 360

2-1: Prone Axillary Hang

- Purpose: To open up the muscles that usually “pull” down the arm, such as lats, tricep, etc.
- To allow for stretch as well in ribs, intercostal musculature, and abs (specifically upper)
- Ensure that arms are not hyperextended so there is no ligament stretch in the elbows
- Lay on stomach
- Hold on to higher surface
- Breathe deeply through allowing armpit area to “sink” closer to the ground
- Suggestions: matting, low beam, TumblTrak, slat bars



2-2: Partner Bridge Stretch

- Purpose: To allow the shoulders and upper spine to stretch with decreased stress on the lower spine, and to allow abdominal fascia to open with breath
- Patient: Lay on back with knees bent (hook-lying position)
- Helper: Stand firmly with balance by patient's hands. Allow patient to place hands around ankles
- Patient: Push up into a bridge, do not walk feet close to hands. As soon as stable, walk feet away from hands, straightening legs
- Helper: grab tissue in the back of the shoulder, directly opposite of the "armpit"/axillary region, and pull gently toward by leaning body weight backwards
- Hold: 5-15 seconds. Lower down, repeat.



2-3: Door way Stretch

- Purpose: to open up the anterior chest wall muscles, including pec, subscap, deltoid, etc.
- Stand in doorway
- Place arms out to sides, elbows bent, at 90 degrees (can do one side at a time if you have a corner and no doorway or both in an actual doorway)
- Split stance, to maintain balance and allow controlled pressure
- Shift body forward to allow body to move in front, relatively, of elbows
- Do not hike shoulders and use upper traps, relax shoulder complex



2-4: Vertical Foam Roll

- Purpose: The series of activities while laying vertically on the foam roll provide the option to stabilize the spine, allow approximation of the spine using the abs isometrically, and stretch the ribs, anterior chest wall, shoulder rotators and more, in a controlled motion
- Weights may be added in order to provide additional end range pressure to increase stretch but the weight must be considered with regards to returning the arm to neutral and using the muscles that are being stretched (i.e. don't overload)

(Vert Foam Roll List)

1. Flexion/Extension
2. Abduction/adduction to neutral
3. Chest press
4. Snow angels (abduction)
5. Horizontal abduction (chest press end position) with External and Internal rotation

1. Flexion/Extension



- One arm overhead, one by side
- Switch arms simultaneously
- Try to get weight to floor in both cases
- Keep elbows straight and arms close to ear
- Hands in neutral position
- Spine must remain in contact with foam roll

2. Abd/Add to Neutral



- Start with arms horizontal away from body
- Have palms with weight facing up
- Bring arms together over chest with elbows straight
- Move arms back to ground and repeat

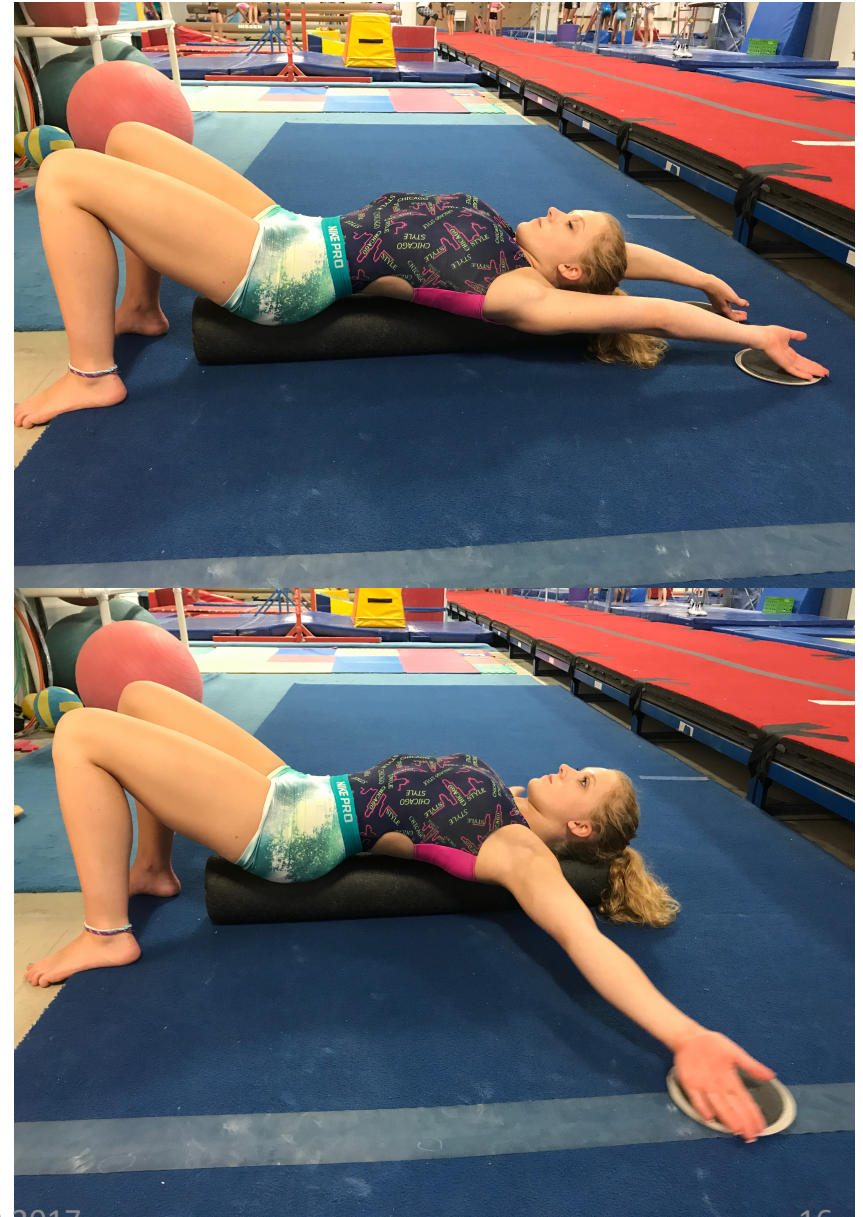
3. Chest Press



- Begin with elbows bent, touching the ground
- Extend arms up above chest
- Hold for a second then lower arms to sides slowly until elbows touch the ground
- Do not let elbows drop below being even with the shoulders (90 degrees of abduction)

4. Snow Angels

- Place gliders or paper plates under hands
- Do not allow spine to lost contact with the foam roll, abs remain contracted
- Keeping arms straight and palms toward ceiling, do a “jumping jack” or “snow angel” motion with arms, trying to keep hands in contact with gliders



5. Abd with IR/ER

- Purpose: to stretch the shoulder rotators in both directions, decrease capsular adhesions
- Elbow stays flat on ground, and at 90 degrees (in line with shoulders)
- Allow weight to bring hand to floor down (IR of shoulder) and back (ER of shoulder)



2-5: Bent Elbow Table Trap Stretch

- Purpose: To stretch the shoulders, scap area, rotators and provide more shoulder range of motion in axillary area and rotators
- Also, tests to show how flexible shoulders are
- Lean onto the table with arms in front and elbows bent, palms pressed together
- Push chest down towards the ground, allowing back to straighten. A stretch will be felt in the arm pit and lat area
- Attempt to pull arms apart without any wrist extension



2-6: Prone Position Dance 360

- Purpose: to increase shoulder range of motion, rotation, in a weight bearing position (1 of 2): push up position and handstand
- Hands parallel on 360's in push up position
- Rotate arms Internal, and to external, keeping elbows straight but not hyperextended.
- Turn in and out, slow and controlled, pushing end range of motion



2-7: Handstand Position Dance 360

- Purpose: position 2 of 2 for increasing weight bearing range in shoulder
- Spotted for stability, place hands parallel to 360's
- Elbows remain straight, but not hyperextended
- Important to keep spine neutral, no “arching” of the lower spine, head neutral (muscle memory and quality)
- Turn internal and externally, rotating 360's
- *Direct relationship to uneven bar work and hand positioning on beam



③ Spine

- ① Exercise Ball layover- weighted bar
- ② Prone press ups
- ③ Double ball rocking sit-ups
- ④ Horizontal foam roller
- ⑤ Lower trunk rotations
- ⑥ Cat Camel

3-1: Exercise Ball Layover

- Purpose: To allow the spine to move and expand space between the vertebrae, and help lungs fully expand which takes pressure away from the diaphragm
- Also, to re-educate on segmental extension in the spine, healthy arching, especially after returning from neutral bracing position
- Ball protects the spine from individual joint level stress
- Lay over ball, holding bar (weighted for overpressure to shoulders or not)
- Knees bent to protect spine initially
- Hold in end position, or rock back and forth

Bent Legs



Straight Legs



3-2: Prone Press Up

- Purpose: Uses extension of the lumbar spine to help reeducate motion without excess stress
- Lay on stomach with hands next to chest
- Slowly press upwards, extending spine
- Hold for a second before slowly laying back down
- Keep hip bones in the front (ASIS) in touch with the ground
- Repeat



3-3: Double Ball Rocking Sit-up

- Purpose: To activate core muscles in order strengthen and create more stability around the spine
- Lay on spine with Trigger Point balls (x2) under spine (balls in tube sock, or double ball extender with balls on muscles on either side of spine)
- Perform small “sit ups” focusing on using the ball placement as a “fulcrum” point
- Repeat, slowly, moving the ball throughout the levels of the spine



3-4: Horizontal Foam Roll

- Purpose: To stretch muscles in upper thoracic spine and alleviate pain in neck and shoulders, as well as increase upper back flexibility (reversal of thoracic kyphosis)
- Place foam horizontally on the ground
- Lay with upper back on foam roll, feet shoulder width apart for stability (body perpendicular)
- Place arms over head and slowly lean backwards over the foam roll, focus only on extending upper back
- Keep weight through gluteals, bent knees, feet flat, stabilizing and protecting the spine



3-5: Lower Trunk Rotations

- Purpose: To increase flexibility in lumbar spine and hips, allowing for greater mobility and rotation in the spine and mobility of the nerves
- Lay on back with one leg in air, knee straight, slowly allowing leg to fall to opposite side while keeping arms extended sideways and in contact with ground
- Focus on contracting abdominal muscles while moving leg back to neutral
- If painful, place feet on ground with bent knees and legs together, bring knees to each side while coming back to original position



Modified



④ Hips

- ① Bent knee hip roll under stretch
- ② Square split with back knee bent
- ③ Thomas stretch
- ④ Prone quad- hip roll under
- ⑤ Standing square hamstring

4-1: Bent Knee Hip Roll Under

- Purpose: To activate and stretch hip flexors and quadriceps, to provide stabilization for the spine while doing so, to protect spine
- In lunge kneeling position, make sure body is vertical in line with back leg lunge
- Contract abdominals, holding an isometric contraction while posteriorly rotating pelvis (pulling waist line up toward breast bone)
- Stay contracted, and “Shift” body forward, making sure not to allow the spine to arch (or lumbar spine to lordose)



4-2: Square Split

- Purpose: To properly stretch both the hamstring in the front leg and hip flexor in the back leg simultaneously with proper alignment
- Start in split position, unsquare
- Slide front foot backwards, pulling hips back as well, focusing on back hip moving ‘forward’ in an effort to get to square position
- To increase difficulty, bent back leg against wall/beam, focusing on hips staying square (see picture). Ensure spine is straight, abs contracted to neutral, fighting urge to “arch” the spine

With Paralettes



Bent Back Leg



4-3: Thomas Stretch

- Purpose: To stretch the hip flexors in order to eventually decrease the pull on the joints (attachment distally to thigh and knee and proximally to the lumbar spine) and actively stretch the muscles in the leg, lower back, and around the pelvis to allow for greater hip extension mobility
- Sit at the edge of a table
- Pull one leg to chest, holding tightly (this protects the spine from arching)
- Hold knee, while laying back, allowing opposite (Stretched) leg to hang down
- To increase or correct position of stretch, use ankle weights or have another person push down above knee while simultaneously pushing forward on bottom of other foot



With Active Stretch



4-4: Prone Quad Stretch

- Purpose: To stretch quadriceps and hip flexors while protecting the spine from arching
- Can use dog leash, towel, belt looped around foot to assist, or can grab the foot
- Lay on stomach, bending one knee pulling the heel toward the buttock
- Holding knee bent, roll the hips under, pulling abs tight, while keeping “tension” on the bending of the knee
- Keep quad on floor not lifting knee off the ground



4-5: Standing Square Hamstring

- Purpose: To stretch the hamstring in a square position, allowing for increased flexibility and decreased nerve tension
- Usual hamstring stretches (front leg of split) are done in turnout position (External rotation), therefore not allowing square flexibility (pike position, landings, front kicks, and square split)
- Feet in parallel, hips square, place foot on elevated surface (not too high)
- “Arch” the spine, keeping square, hinge at the hips forward and do not lose the “arch”, until a proper hamstring stretch is felt

Good vs. Bad



Summary

- Quality over quantity
- Position of body over extensiveness of the stretch
- Breathe through stretches while holding to allow relaxation and a lack of compensation