Therapeutic Exercises to Reduce the Risk of Greater Trochanteric Pain Syndrome

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PRINCIPLES:

1. The biomechanical approach is to control for abnormal contralateral pelvic drop and hip adduction, and related movements such as abnormal trunk lean, over stride and back lean with stiff landing, and dynamic knee valgus.
2. Post heel strike needs adequate knee and hip flexion. This marks adequate shock absorption.
3. Hip muscle performance includes adequate flexibility, strength, and endurance. Isometric and eccentric strength are most important. Motor control includes timing of the core to hip muscles.
4. Muscle activation exercise and strengthening are useful, but motor control training is also necessary.
5. The foot and ankle needs flexibility for the rear, mid-foot and forefoot rocker, and adequate calcaneal eversion.
6. Improving hip strategy in deceleration stance improves multiplane stability and rate of loading.

Initially hands on work expedites the mobility of the soft tissues, and related muscles and joints. Loosening the iliotibial band proximally at iliac tubercle and distally in the leg helps reduce strain over the greater trochanter. Related muscles Key muscles to loosen include the Biceps Femoris, Vastus Lateralis, and Medial Hamstrings. Trigger Points in these related muscles may contribute to fascial tone, another possible contributing factor to strain and stress.

Flexibility: Stretching is advised at 30 seconds and two repetitions per muscle group.

Iliotibial Band Stretching facilitates proper hip adduction in early stance.

Hip extension and adduction facilitates the posterolateral hip muscles.

Proximal hamstring with knee bent is needed for loading in stance. Biceps Femoris with knee extended facilitates swing.

Thoracic extension facilitates lumbar core and breathing.

Soleus (Knee Bent)

Self Mobilize Talus (Rearfoot tight)

Cross Over Calf (Tibialis Posterior)

Gastroc (Knee Straight)

Applied pressure (Focused stretching)

Calf and ankle mobility facilitates the rearfoot, midfoot and forefoot ankle rocker-the ability of the tibia to move forward in mid to late stance phase.

Activating and Training the Posterolateral Hip

The pelvic drop may require a stick for support. It is an exercise that needs preliminary graded progression from gluteal activation and mat exercises to standing exercises. The sidelying hip abduction with hip extension is level three evidence for gluteus medius strengthening. 8-15 repetitions and 3 sets. The sidelying hip abduction emphasis is posterolateral muscles achieved by hip extension and abduction. The muscle function is eccentric and isometric in stance phase walking.

- The lumbar spine should be in a functional position – the position of greatest stability.
- Plank and side plank exercises are recommended for core training.
The initial emphasis is activating the posterolateral hip muscles. If the gluteal muscles are irritable, then skip the exercises that aggravate the pain. Soft tissue mobilization may be used to reduce trigger points prior to exercise phase. A tendinosis may benefit from eccentric strengthening but the gluteal tear may need a modified strength progression. By starting with mat exercises the vigor can be controlled as activation and strength initiate.

Generally the focus is sustained activity at 1 minute for several weeks before progressing into standing based training.

The standing progressions include double to single leg activities. The biomechanical emphasis is more hip strategy in deceleration phase of stance. Hip extension with the gluteus maximus may reduce excessive hip adduction. In contrast the hamstrings used to extend the hip may increase hip adduction. Start double leg and progress to single leg. Eccentric control of hip adduction and internal rotation are emphasized. 8-15 repetitions and 3 sets as tolerated.

**Lower extremity pulley for hip extension and hip abduction with trunk control**

**Motor Control in Walking:**
In strategy, you are coaching walking to reduce strain and strain rate in the lateral hip:
1. Softer landing with more hip strategy.
2. Pelvic control in frontal plane.
3. Trunk control in stance walking.
5. Distribute forces over greater joint contact areas through improved kinematics.
Suggested coaching: softer landing and flexing your knee and hip when landing.

**Reference List**