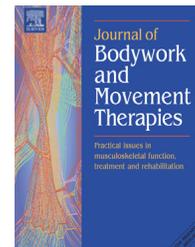




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PREVENTION & REHABILITATION: SELF-MANAGEMENT: PATIENT SECTION

## Learning the Single Leg Dead Lift<sup>☆</sup>



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### KEYWORDS

Dead Lift;  
Squat training;  
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Training the gluteal muscles is one of the most valuable things you can do to help prevent injury and enhance performance. Traditional squat training works more the quadriceps or front of your thigh, whereas Dead Lifts (DL) train your posterior thigh and buttocks or the hamstrings and gluteal muscles (Weingroff, 2014). The DL succeeds because it grooves a pattern of moving from your hips, which is essential to spare both your knees below and spine above.

The Single Leg DL (SLDL) is especially important because you get a training effect more quickly and you can use it as a test to see if one leg is stronger than the other. We will start with a simple version utilizing support to make it easier (Liebenson, 2014). Most DLs are performed in gyms with heavy weight and are a real feat of strength. This SLDL will use only body weight. Also, most DLs involve lifting a bar with weights from the floor. This SLDL will start in an upright position and minimize bending so as to gain great gluteal muscles activation while minimizing risk to both the knee and lower back.

The SLDL is a wonderful way to start to learn the DL. It can be progressed by

- adding dumbbells or kettle bells
- lifting from the floor or a low bench
- adding heavier weights and performing with both legs

DLs and SLDLs both incorporate one of the most important injury prevention and performance enhancing mechanisms – the hip hinge. This is important since a slumped forward posture when transitioning up and down from the floor or a chair can be a mechanism for injury for the low back or knee slowing down your recovery (Liebenson, 2003; McGill, 2006). An additional benefit of learning to DL or hip hinge is that it improves overall posture and thus is also helpful for neck pain, shoulder problems and even plantar fasciitis or achilles tendon issues.

### Single Leg Dead Lift with support

#### Start position

- Stand tall and wide (see Fig. 1a)

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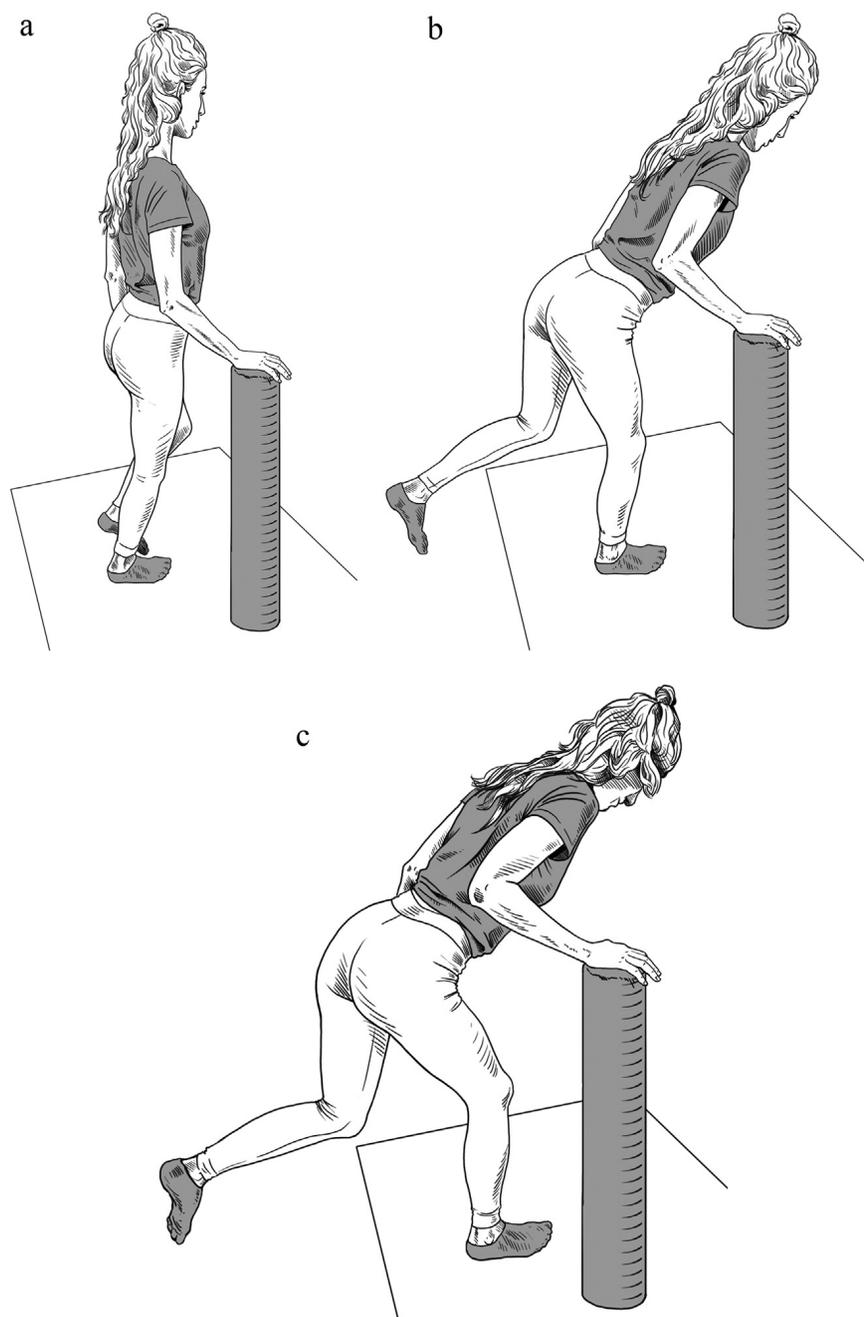


Figure 1 Single Leg Dead Lift with support. a) Start position. b) Lift leg. c) Bow forward hinging hip backwards.

- Place 1 hand on a long foam roll
- Lift the opposite leg (see Fig. 1b)

#### Movement

- Reach your leg back behind you towards a wall (see Fig. 1c)
- Feel the weight going back towards your heel as your body tilts forward as if bowing forward
- Feel the effort coming from the back of your thigh and hamstring on the support leg
- Perform 8–10 high quality repetitions and switch sides

#### Common mistakes

- Bending forward or slouching at the waist (see Fig. 2)
- Squatting with the knee going forward and only minimal backward hip motion (see Fig. 3)
  - in this instance it is likely that the front of the thigh (quadriceps) will be felt doing most of the work instead of the back of the thigh (hamstrings) & buttocks (gluteal muscles)

#### Reactive version

- Use a pulley to make the hip hinge involuntary

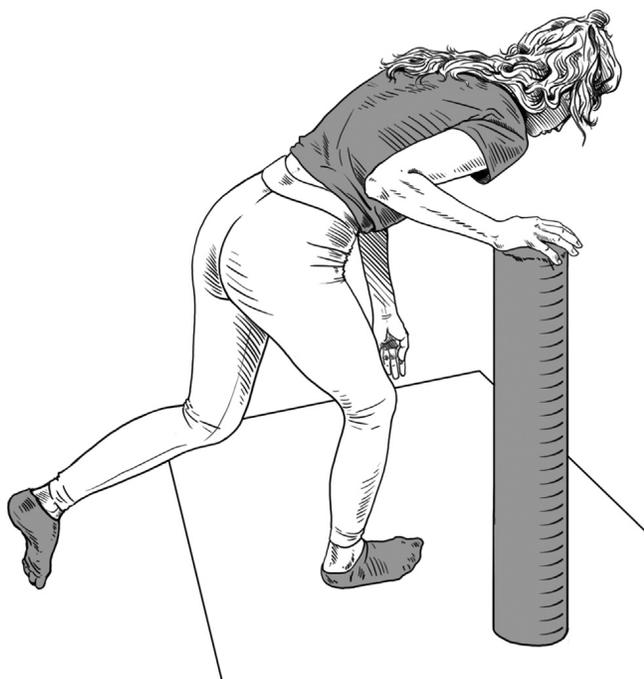


Figure 2 Common Mistake: Bending forward at the waist.

- Avoid performing a rowing motion, but merely hold the weight as you perform the movement
  - Reach forward to grasp the weight as you tilt your body in a forward bow (see Fig. 4a)
    - notice your hip hinges backwards

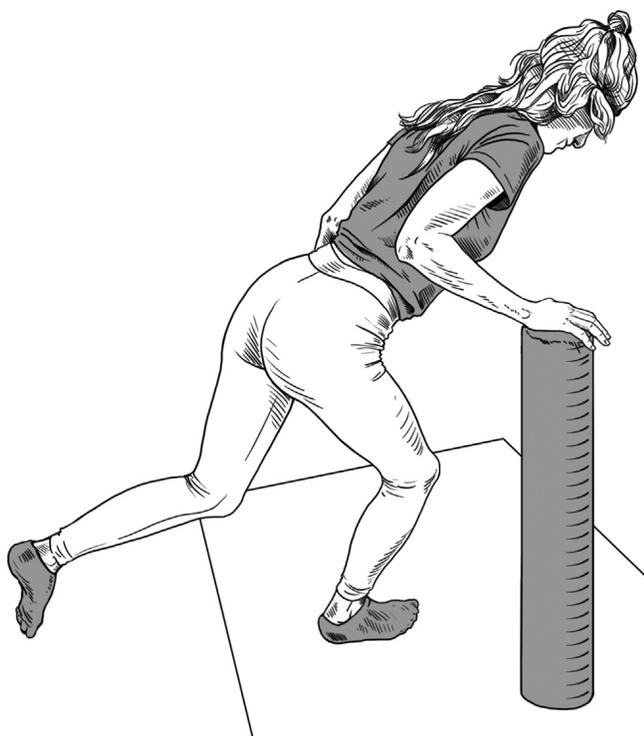


Figure 3 Common Mistake: Knee traveling forward.

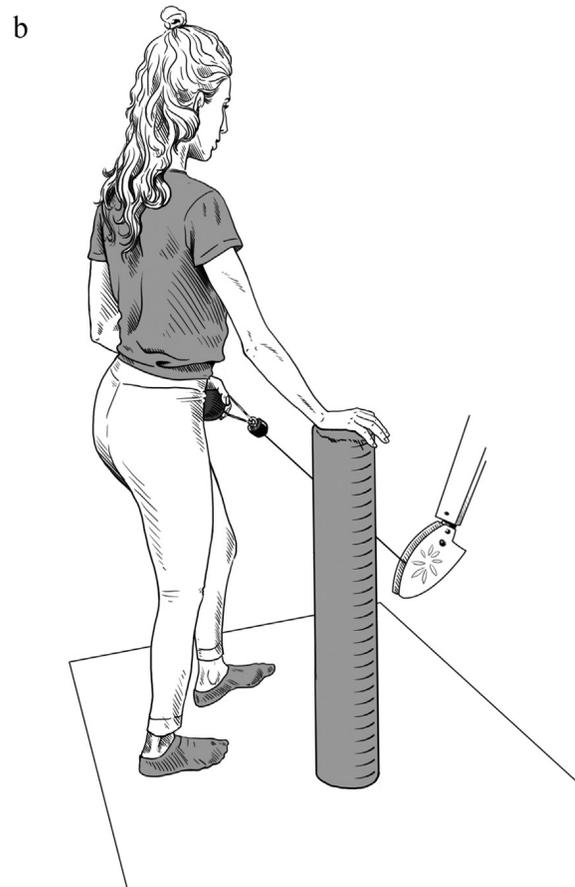
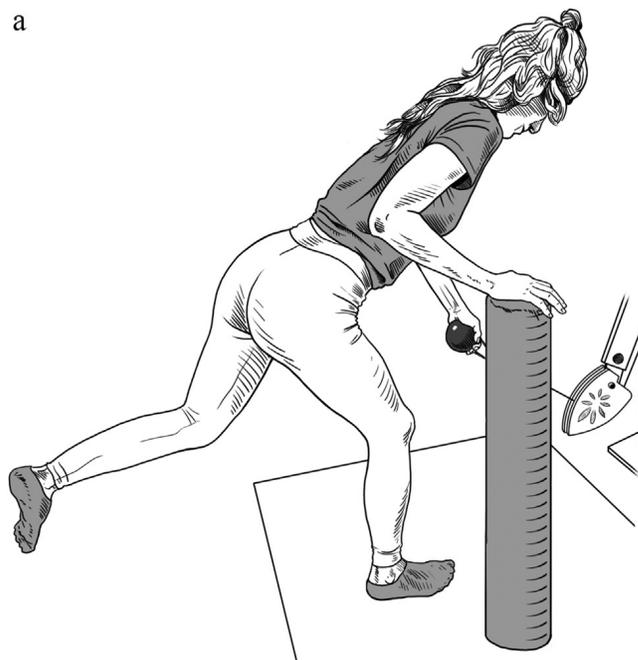


Figure 4 Reactive Single Leg Deadlift with pulley. a) Bow down to grasp pulley hinging hip backward. b) Stand up driving hip forward.

- Stand up tall and feel the weight come towards your body (see Fig. 4b)
- Start with approximately 20 lbs.
- Perform 8–10 repetitions on each side

### Acknowledgement

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### References

- Liebenson, C.S., 2003. The hip hinge. *J. Bodyw. Mov. Ther.* 7 (3), 151–152.
- Liebenson, C.S., 2014. The teeter. *J. Bodyw. Mov. Ther.* 18, 497–498.
- McGill, S.M., 2006. *Ultimate Back Fitness and Performance*, second ed. Wabunu.
- Weingroff, C., 2014. Dead lifts. In: Liebenson, C. (Ed.), *The Functional Training Handbook*. Lippincott/Williams and Wilkins, Philadelphia.