



Contents lists available at ScienceDirect

# Journal of Bodywork & Movement Therapies

journal homepage: [www.elsevier.com/jbmt](http://www.elsevier.com/jbmt)

## PREVENTION & REHABILITATION: PATIENT SECTION

### The Skater Squat

Lachlan Wilmot <sup>a,\*</sup>, Craig Liebenson, D.C. <sup>b</sup><sup>a</sup> Head of Athletic Performance, Parramatta National Rugby League Club Pty Limited, 163 George Street, Parramatta, NSW 2150, Australia<sup>b</sup> L.A. Sports and Spine, USA

#### 1. Introduction

The need for unilateral training options within the rehabilitation, fitness training, and strength and conditioning (S&C) worlds has been a topic of discussion in recent times. When programming, most coaches and clinicians will agree that there is a need for it, however the problem lies in the application of the correct exercise, as many can either be too advanced for implementation (e.g. single leg Romanian Dead Lift from the floor), too simplistic to elicit a high enough stimulus for adaptation clam shell, or not functional enough (e.g. single leg stance on a Bosu).

The Skater Squat is a perfect option that can be both regressed and progressed seamlessly within a rehabilitation or S&C program, and is a unilateral exercise, using no assistance from the opposite leg.

Historically, S&C coaches focused on big lifts such as the bench press, squat, and deadlift. In contrast, rehabilitation professionals did a lot of passive care, recumbent therapeutic exercise, or light resistance exercise training. Bridging the gap between the clinical and training worlds occurred as a result of a gradual realization that both motor control and strength are needed in the general public, as well as athletes alike. As the functional needs of the sedentary and athletic populations became clearer it was recognized that an individual's current capacity needs to exceed the required capacity of their demands, if injury is to be avoided.

The shift towards single leg training began with the pioneering work of Neurologist, Pr Vladimir Janda who explained that the primary posture of humans should be considered in single leg stance rather than double stance, since our main function is locomotion (Janda, 1983). This was followed by the innovative S&C coach, Michael Boyle who discouraged using the back squat as a primary training exercise, suggesting it was a) not functional enough and b) it placed too much stress on the lumbar spine, whereas single leg and split stance positions were more functional and safer to add load to, during training (Boyle, 2010).

#### 2. Exercise (see Fig. 1)

- Stand upright on your left leg.

- The squat pattern will consist of a number of movements simultaneously:
  - Right leg will travel back with the aim of touching the knee to the ground
  - Leg knee and hip will break to allow a squat action, in which the knee drives forward and hips back, heel remains on the ground.
  - Arms should be straight and thrown forward to counter-balance the weight shift backwards.
- Simply reverse the process to drive through the left foot and return to the starting position.

#### 3. Cues

- Key focus is keeping the torso upright.
- Timing the arm swing to act as a stabilising counter balance.
- Stance leg heel is to remain on the ground.
- Swing of rear leg is to only to make contact with the ground at the point of the knee, do not put the foot on the ground and turn the exercise into a reverse lunge. Rear foot to be coached into a dorsi-flexed position.

#### 4. Regression options (Fig. 2)

- Using an Airex Pad, or any foam mat option, can be placed behind you to become a target for the rear knee to reach for as it makes floor contact. The Airex Pads allow depth prescription, so that at the beginning one may use 3 Airex Pads, and as strength builds this can progress to 2 Airex Pads, and then to just 1 Airex Pad.
- Counter balance weights, by holding a pair of light dumbbells, this will make the movement easier by allowing the torso to remain more vertical throughout the movement. Generally, up to 4 kg in each hand will assist. Increasing the weights may lead to shoulder fatigue.
- Assisted option: The set-up could be, in front of a rack which the client can hold on to an upright column to assist during the movement up and down, or to hold on to a band that is attached, which will give assistance through the movement.

\* Corresponding author.

E-mail address: [Lachlan.Wilmot@parraeels.com.au](mailto:Lachlan.Wilmot@parraeels.com.au) (L. Wilmot).

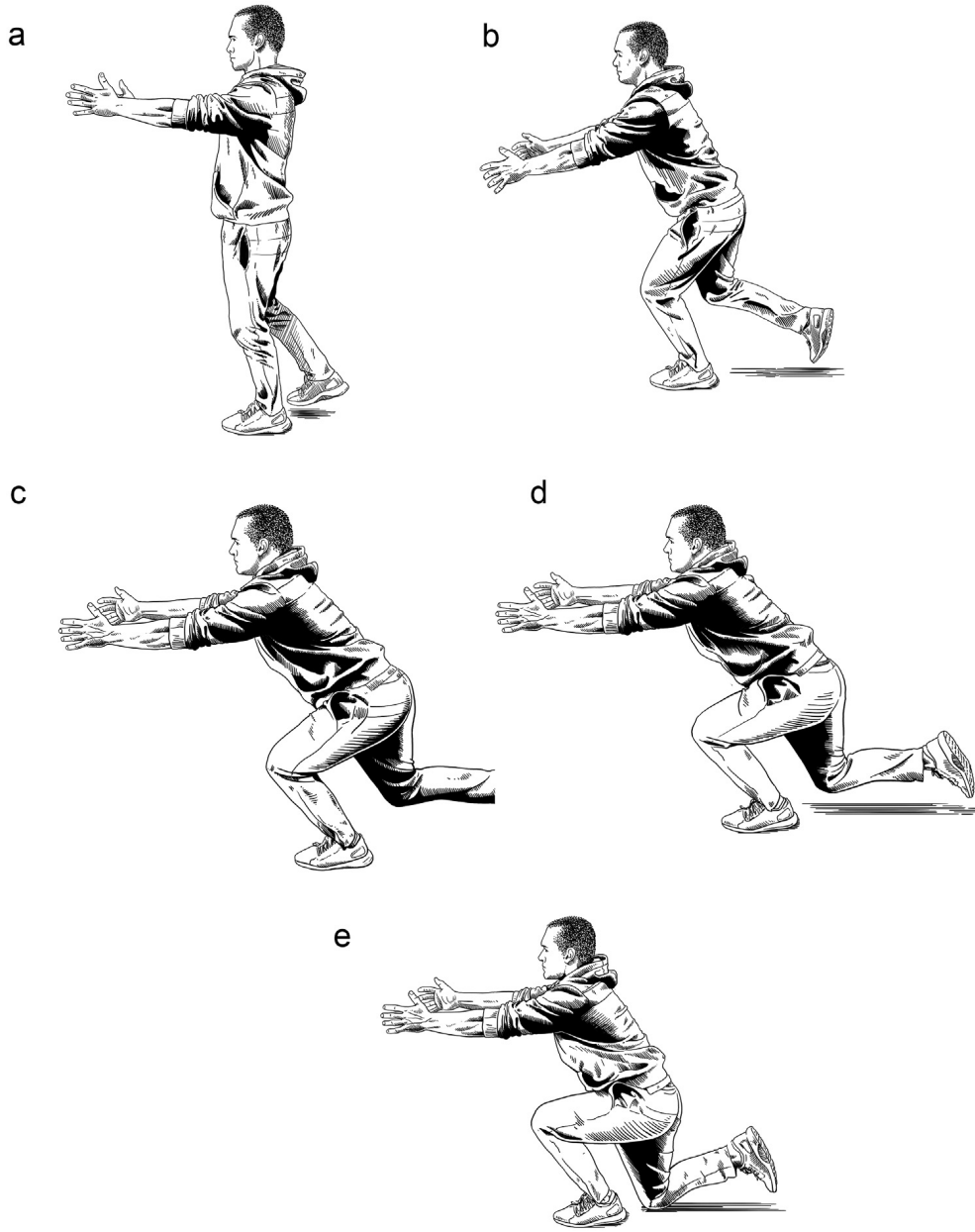


Fig. 1. The Skater.

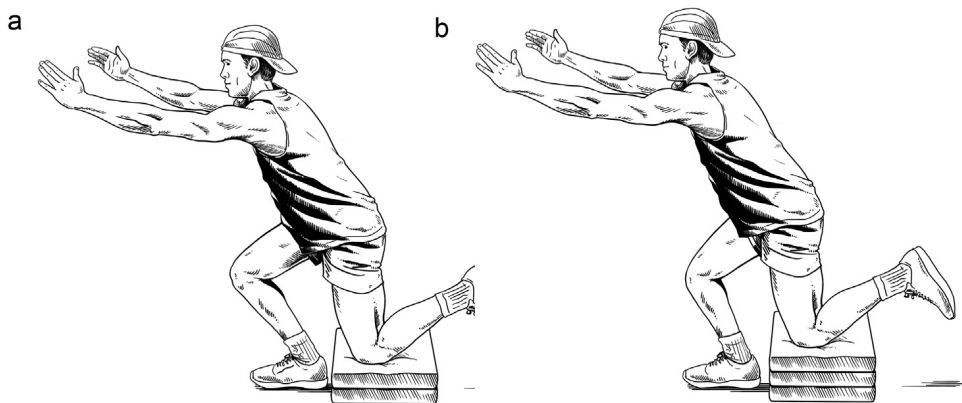


Fig. 2. Regressions with a Pad.



**Fig. 3.** Progressions with a weighted vest.

### 5. Progression options (Fig. 3)

- Once a full range of motion is achieved, progression through the addition of load is recommended. Loading options that are best suited to the Skater Squat will be a weight vest to start. This allows the arms to still be used for counter balance. Then a hand-held load such as medicine balls or plates can be used, thus removing the ability to counter balance with the arms. The next progression will then be dumbbells held down by the side. The final progression is the use of a barbell in the front rack position, or the use of a safety bar.

### References

- Boyle, M., 2010. *Advanced in Functional Training: Training Techniques for Coaches, Personal Trainers and Athletes*. On Target Publishing, Aptos, CA.
- Janda, V., 1983. On the concept of postural muscles and posture in man. *Aust. J. Physiother.* 29, 83–85.