

Damien Howell Physical Therapy

One Legged Cycling

Bicycling one leg only drills have been proposed as being helpful for improving bicycling pedaling form and efficiency. I believe it can also be useful to test for asymmetry of muscle endurance, and for strengthening asymmetrical leg weakness. .

One legged pedaling on a stationary bike or trainer is a good self test to determine if one leg has more strength, muscular endurance than the opposite leg. Select a particular resistance and particular cadence, pedal a fixed amount of time with one leg only, and compare the level of perceived exertion, or the ability to maintain form and cadence between the right and left leg. If you loose form or fall off in cadence on one leg earlier than the other leg this leg needs remediation.

When pedaling with both legs it is easy to let the leg that pulls the foot through the bottom of the stroke, up and back over the top to depend on the opposite leg which is pushing from the top down to the bottom to do all the work. If the leg which is suppose to be pulling the pedal up from the bottom to the top is not working it is essentially dead weight. In effect the stronger leg can carry all of the weight.

The safest way to perform one legged cycling is to use stationary trainer, rollers, or stationary exercise bike. There is published literature recommending experienced cyclist can do one leg only cycling down the road. Personally, I have difficulty imaging me being skilled enough to pedal down the road one legged, but I don't even feel comfortable cycling without holding on the handlebars.

Set up bike (indoor trainer) between two chairs or stools on each side of the bike. After a warm up using both pedals place one foot on chair or on the down-tube of the bike frame where a bottle cage might be, and keep pedaling. Of course the pedal must have cages, toe straps, or bike shoes with cleats. Strive to apply force to the pedal during the entire 360 degrees in a smooth manner. You are not attempting to apply an upward force; you are just unloading the weight of your leg from the pedal as you cycle from 6 o'clock to 12 o'clock.

One legged cycling makes you pedal in complete circles. During one legged cycling, the other leg can't help you through the dead spots on

the back stroke. These are the places your leg makes a transition from pushing down to pulling up, and from pulling up to across the top.

Just as you do when pedaling with both feet the action should be smooth around the 360 degrees. The sounds you hear pedaling on the trainers should be constant, not swoosh, break, and swoosh. It should be a constant swoosh. Pedaling should be constant, not digital.

Choose a resistance, or gearing ratio which is not terribly stiff, nor light and easy. The cadence should be slow enough to allow a sensation of control, but not so fast to feel out of control. Pedal one legged 30 to 90 seconds on one leg. For the transition to the other leg pedal for a rest interval with both legs, than repeat the procedure for the opposite leg. Notice the degree of symmetry or lack of symmetry and strive to make both sides smooth, controlled and the same cadence.

If you are using one legged biking to improve efficiency of bicycling form repeat intervals of 30 to 90 one legged cycling on both the right left leg for a 10 to 15 minute work out.

If the objective is to improve muscular endurance of a weaker leg alternate between one legged cycling with the weak leg and two legged cycling.

The drill can be progressed either by increasing the amount of time (duration of interval or number of intervals) and/or the resistance.