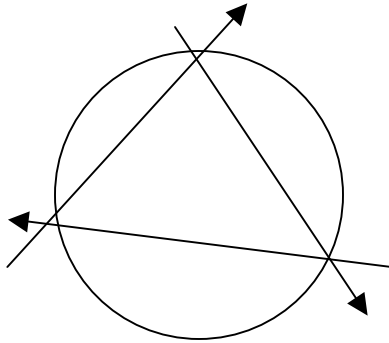


The perfect pedal stroke



There are 3 parts to a peddle stroke

A) Downward stroke: this is where most of your power is created.

B) Back stroke this is the section most of us forget and is the start of the dead point in the peddle action

. C) Up stroke to actively lift the leg so no negative force can be created.

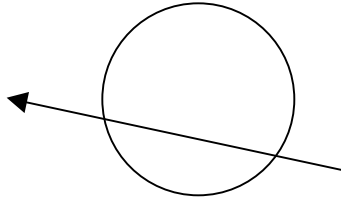
Aim to have 2 parts at work and one at rest, as the old push and pull does not allow at any time the muscle to find rest and this is critical in endurance sports.

Most of a cyclist's power should come from the gluteus maximus and quadriceps muscles during the downstroke. These muscles combine to extend the upper leg at the hip and the lower leg at the knee. Other accessory muscles should be involved, but should not fatigue greatly and certainly should never be a limiting factor in cycling performance.

The way the hamstring muscles attach creates one difficulty for cyclists. Since the hamstring crosses both the hip and the knee joints, it has two major functions: hip extension and knee flexion. During all 360 degrees of the pedal-stroke, a cyclist undergoes either hip extension or knee flexion ... so the hamstring muscles potentially contract throughout the entire pedal-stroke without a moment to recover. No wonder they fatigue for so many riders.

Each muscle involved in the pedal-stroke must have periods of relaxation during which they recover from the powerful contractions they have just been required to produce. The key is learning when the hamstrings are required to produce power in an efficient stroke and when they should be relaxed... and then learning to pedal that way.

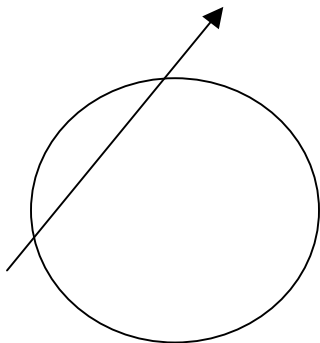
Back Stroke



Power production during this phase of the pedal stroke is critical for effective climbing. Each pedal stroke reaches a crisis moment when one pedal is at 12 o'clock and the other is at 6 o'clock. Since neither leg is engaged in a downstroke, creating a little bit of power in this 'dead spot' carries momentum through to the next downstroke.

The backstroke is one area of the pedal stroke where the hamstring muscles should be very active, because only knee flexion provides power in this range. Relaxation during another range of the pedal stroke in (upstroke) prevents fatigue and enables powerful backstroke contractions without over-using the hamstrings.

U p s t r o k e



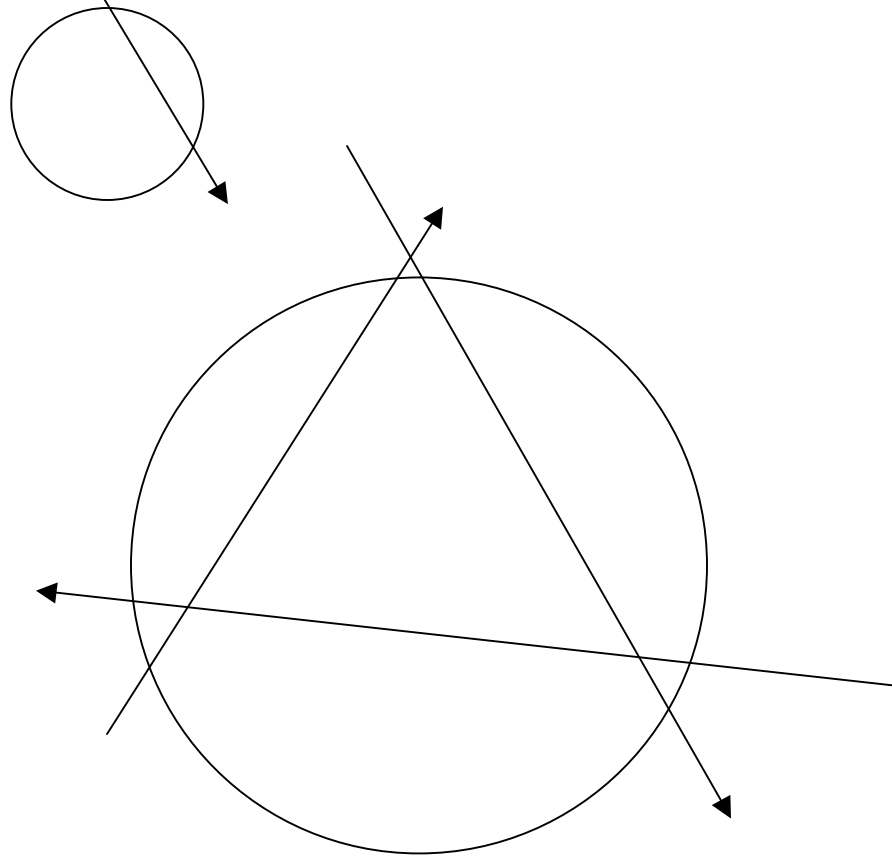
The **first key** is keeping your concentration on lifting the knee and not the heel or the foot. If a cyclist thinks of lifting the heel or pedal or foot, he is likely to use knee flexion to accomplish the movement. If he thinks of lifting his knee powerfully, the foot and pedal will follow without contractions to bend the knee.

The **second key** is thinking of the upstroke as a diagonally upward / forward movement, instead of an upward and backward movement. Again, this places the emphasis on the hip-flexor muscles, which should be contracting, instead of the hamstrings, which should be relaxing. When your pedal reaches the seven o'clock position, think of driving the knee up toward the handlebar

Down Ward Stroke



the power application begins early, at 12 o'clock, and is directed downward diagonally toward 4 o'clock. This activates the quadriceps optimally and lengthens the overlap between the peak torque production of knee extension and hip extension. The quadriceps and gluteus maximus are the primary power producers and the hamstrings contract moderately.



THE BUILDING DRILL for cycling

This is to be done in the start at slow cadence on slightly heavy gear to learn drill

Back ward stroke 30ses (then Add) hamstrings

Up ward Stroke 30sec (then add) Hip flexors

Downward Stroke 30 sec Quads& Gluts

TOTAL 1.30MIN + rest 30 sec (Drill time 2 mins)

Drill time 2 mins

Repeat 3times

Do this at start , Middle and finish of ride

Aim to build time ,higher cadence and lighter gear