

Rotator Cuff Strength Test

The four muscles of the rotator cuff (teres minor, infraspinatus, subscapularis, and supraspinatus) are responsible for generating force and stabilizing the shoulder in all of the swimming strokes. The internal rotators tend to become stronger than the external rotators in swimmers, setting up a force imbalance in the shoulder. The rotator cuff strength test examines the strength in the external rotators to determine if additional strengthening of these muscles is needed. This test is best performed by a qualified health care provider.

1. In a seated position, raise your left arm out to the side 90 degrees and flex the elbow 90 degrees as well. Your hand should point to the ceiling.
2. The examiner should gently stabilize your elbow with one hand while trying to internally rotate your shoulder by pushing on your wrist (see figure 1.4).
3. Try to maintain the initial 90–90 position; do not let the examiner rotate your shoulder.
4. Based on your strength, the examiner will score you on a scale of 0 to 5. Most swimmers will be rated a 3, 4, or 5.
 - 5 (normal strength): You are able to maintain the 90–90 position without pain when the examiner applies a maximal force.
 - 4 (good strength): You are able to maintain the 90–90 position without pain against a moderate force from the examiner. When a stronger force is applied, the shoulder will move slightly into internal rotation.
 - 3 (fair strength): You are not able to withstand any resistance applied by the examiner.
 - 2 and below (poor strength): You will not even be able to hold the arm in the 90–90 position against gravity without additional support.

A score of 5 is considered normal; anything less indicates you need to strengthen the external rotators. Perform the following exercises outlined in chapter 8.



Figure 1.4 Rotator cuff strength test.

Standing external rotation (page 154)

Catch position external rotation (pages 154-155)

Full can (page 155)

Ball rotation (page 156)

Vertical Jump Test

The vertical jump is a test of lower-body power, a combination of force and speed. Explosive lower-body power will allow you to drive off the starting blocks or off the wall after every turn. Leg strength also is the foundation of a strong kick.

You can measure vertical jump without using any special equipment.

1. Stand facing a wall and reach with both hands while keeping both feet flat on the ground. Have a partner mark the tips of your fingers using chalk. This establishes your reach height.
2. Put some chalk on the fingers of your right hand and turn sideways to the wall.
3. Jump as high as you can without taking any approach steps. Touch the wall with your hand at the peak of your jump, leaving a chalk mark (see figure 1.5).
4. Perform at least two jumps; continue until you are not able to jump any higher.
5. Measure the height of the highest mark on the wall for your jump height.
6. To calculate your vertical jump, subtract your reach height from the jump height.

There are several commercial products you could also use for measuring your vertical jump height. If you use one of these devices, you would measure your vertical jump in the following way:



Figure 1.5 Vertical jump test.