

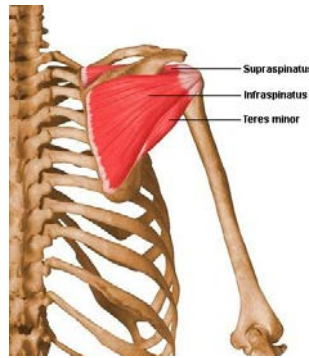
Rotator Cuff

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Infraspinatus in Rotator Cuff Pathology

Rotator cuff (RC) pathology is extremely common, and shoulder pain accounts for around one third of all musculoskeletal pain complaints. Over the years, most interest has centered on supraspinatus, however infraspinatus (ISp) pathology is also known to be common. At arthroscopy, 22% of full thickness RC tears were found to be isolated ISp tears, and an MRI study showed the prevalence of ISp tears to be 25%. Combined RC tears are also common. Approximately 40% of RC tears involve combined supraspinatus & ISp tears.



testing. The most commonly used test for ISp has been resisted external rotation in neutral.

Because of its inferior and oblique alignment, there is evidence that the lower part of ISp plays a major role in preventing superior migration of the humeral head. For this reason, infraspinatus strengthening forms a major component of rotator cuff rehabilitation programmes.

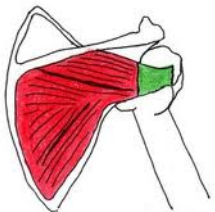


Hughes et al 2014 used EMG analysis of the two components of ISp, and supraspinatus, to determine if it is possible to differentiate between the different muscle groups. They tested resisted external rotation in neutral (elbow by side), in 90° flexion, in 90° abduction, and in shoulder extension.

Results showed a difference in activation of the two components of ISp, with the oblique part being much more active with resisted external rotation. Also, in resisted external rotation in flexion and neutral, both components of ISp were significantly more active than supraspinatus. This suggests that these positions may be best for isolating ISp in testing, and may also have implications for rehabilitation of ISp.

The position of 90° shoulder flexion has not been previously described for testing ISp. One problem with using this position is that it is known to lead to potential impingement of the supraspinatus tendon. This is the starting position for the Hawkins-Kennedy impingement test. Pain & / or weakness in this position may be due to a symptomatic supraspinatus tendon or resulting pain inhibition. Nonetheless, further investigation is warranted on the validity of this position for testing, and for

ISp has two components – a proximal transverse part, and an inferior oblique part. These two parts of the muscle have different innervation, and in effect may function as two different muscles. The transverse component has the same innervation as supraspinatus.



There is some thought the transverse part may be more active in abduction, while the oblique part may be more active in external rotation.

Over the years, various tests have been described to isolate individual rotator cuff muscles. Supraspinatus tests have traditionally included resisted lower range abduction, and empty-can tests. However recent studies have questioned the accuracy of these tests. Also, there is no consensus on the best way to isolate ISp, and whether it is possible to differentiate ISp from supraspinatus in

rehabilitating the oblique component of ISp to minimize superior migration of the humeral head.

The majority of the information for this newsletter has been obtained from the following article: Hughes, P et al (2014) Isolation of infraspinatus in clinical test positions. Journal of Science & Medicine in Sport, 17, 3, 256-260.

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