

be raised above the level of the shoulder. The infraspinatus is also a strong participant in keeping the head of the humerus in its socket.

The infraspinatus is one of the most frequently afflicted muscles of the body. It's capable of ending an athletic career, as illustrated by Kim's story.

*Kim was a thirty-two-year-old professional tennis coach who had lived with pain in both shoulders ever since she began playing tennis as a child.*

*Diagnosed with rotator cuff tendinitis, Kim had had numerous steroid injections and was going for physical*

*therapy almost weekly. Despite the treatments, pain kept her from playing much of the time. She was very concerned that several of her young players were developing shoulder pain very similar to her own. "I make them play through the pain, just like we were told to do at their age," she said. "I'm afraid they'll end up as tennis cripples like me, but I don't know what else to do. They want to play so badly." After a massage therapist showed Kim how to self-treat her shoulder with a tennis ball against a wall, she became free of shoulder pain for the first time since the age of fourteen. She felt that the best part about the new trick was that she could pass it on to her students.*

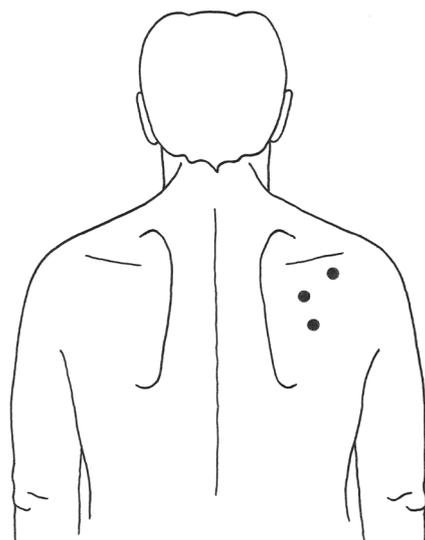


Figure 5.23 Infraspinatus trigger points for shoulder pain

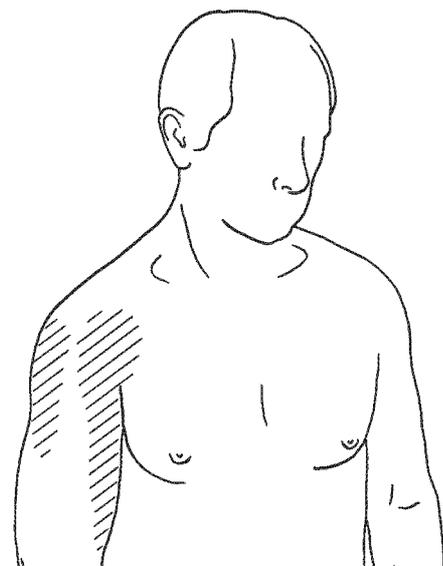


Figure 5.24 Infraspinatus referred pain pattern

## Symptoms

Paradoxically, though located behind the shoulder, infraspinatus trigger points are the most common source of pain in the front of the shoulder (figure 5.24). This pain usually feels like it's deep in the joint and may travel some distance down the biceps. Extreme tenderness in the anterior deltoid and the bicipital groove in the head of the humerus can lead to an erroneous diagnosis of bicipital tendinitis. Pain can also shoot down the outer side of

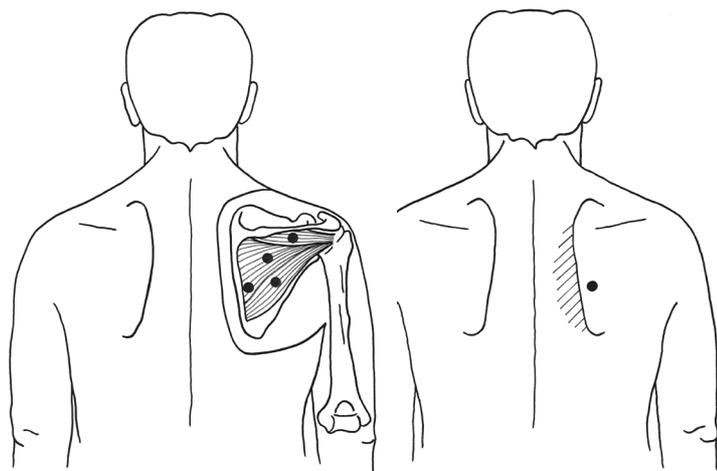


Figure 5.25 Infraspinatus medial border trigger point with referred pain pattern

the shoulder. Occasionally, the trigger point just inside the medial border of the shoulder (figure 5.25) will refer pain to the back of the neck and to the upper back next to the shoulder blade, all the way down the upper arm and forearm, and into the entire thumb side of the hand. When pain is referred to the forearm it tends to promote formation of satellite trigger points in the hand and finger extensors, compounding pain and other symptoms in the hand. It is also possible to develop *hyperhidrosis*, or excessive sweating, within the referred pain zone and even down into the hands (Simons, Travell, and Simons 1999; Pace 1975).

Other symptoms of infraspinatus trigger points include weakness and stiffness in the shoulder and

arm, which can cause your shoulder and arm to tire easily. Both inward and outward rotation of the arm are restricted, making it difficult to move the arm in any direction. Since arm rotation is necessary for reaching behind you, it becomes impossible to reach up behind your back. A woman can't fasten or unfasten her bra. You struggle getting your jacket on or off. Lying on the afflicted shoulder is painful. Lying on the opposite side is painful as well, because the weight of the afflicted arm pulls on the infraspinatus. Even reaching up to comb your hair or brush your teeth may be painful (Simons, Travell, and Simons 1999; Sola and Williams 1956).

The internal rotator muscles, the subscapularis, and the pectoralis major can instigate trouble in the infraspinatus and teres minor. If the subscapularis and pectoralis major are short, tight, and have trigger points, the infraspinatus and teres minor become overstretched. The latter two muscles then develop a compensation pattern of trigger points. The infraspinatus may be responsible for much of the referred pain you experience, but if you don't resolve the trigger points and the shortening in the opposite muscles, you won't solve the problem. Deactivate all of the trigger points before starting a stretching protocol.

It is possible for many of the shoulder muscles to end up with trigger points and soon you're unable to move the arm much at all. The rigidity of the shoulder imposed by the stiffness of the muscles can give your doctor the idea that you have adhesions in the joint or adhesive capsulitis, which can lead to a recommendation for forced manipulation under anesthesia. Nevertheless, this condition, commonly called a "frozen shoulder," can often be treated very successfully with trigger point massage of the rotator cuff muscles and other associated muscles (Simons, Travell, and Simons 1999).

## Causes

Working at a job that requires keeping the arms overhead or out in front for long hours is abusive to the infraspinatus muscles since they have to stay contracted to keep the arms up. Repeatedly reaching back in work or play can leave the infraspinatus in a shortened state and full of trigger points. Accidents, falls, and many kinds of sports activity can overload the infraspinatus. Driving a car with the hands on the top of the wheel puts continuous strain on both the infraspinatus and the supraspinatus, since they work together to keep the arms up (Simons, Travell, and Simons 1999; Baker 1986).

For the same reason, working at a computer keyboard without elbow support easily exhausts both muscles. Keeping your hand on the mouse far out to one side can be the cause of your chronic shoulder pain on that side, since this position requires outward rotation of the upper arm and continuous contraction of the infraspinatus and teres minor. Study your activities to discover other ways an infraspinatus muscle may be involved in a habitual overload or repetitive strain, related to its function in outward rotation of the arm. Seek solutions to eliminate or minimize these perpetuating factors.

## Treatment

The infraspinatus, being on the outside of the shoulder blade, is an easy muscle to treat with self-applied massage. Confirm its location by feeling it contract and bulge as you move the arm into outward rotation (figure 5.26). The Thera Cane works well for infraspinatus massage, as does the Backnobber. You may like a tennis, high bounce, or lacrosse ball against a wall even better (figure 5.27). If using the ball against a wall, place the ball just below the spine of the scapula and turn your body to about a 45-degree angle so your "wing," or shoulder blade, is against the wall. If your back is flat against the wall, you are missing the point. Search around for the two trigger points just below the spine of the scapula. Then feel with your fingers for the edge of the muscle that parallels the lateral border of the shoulder blade. In the middle of this finger-like strand of muscle, you will find the trigger point that sends pain to the front of the shoulder. Ten to twelve massage strokes per trigger point constitute a treatment, but come back to it several times a day. Read chapter 3, Treatment Guidelines, for more massage instructions.

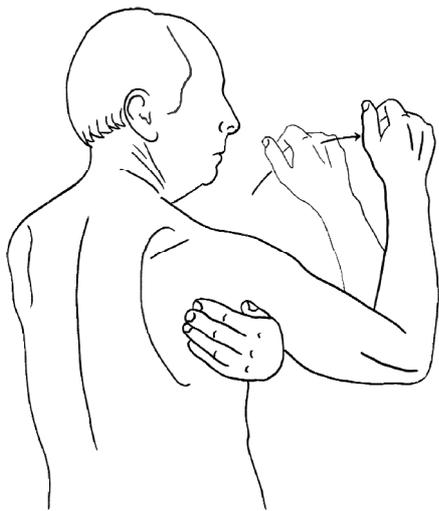


Figure 5.26 Arrow shows outward rotation for locating infraspinatus with isolated contraction. It is the same motion as hitchhiking.



Figure 5.27 Infraspinatus massage with a ball on a wall

The infraspinatus is an especially sneaky muscle. You'll rarely experience pain in the infraspinatus itself. You'll find yourself rubbing away at the front or outer side of your shoulder, forgetting that infraspinatus trigger points are often the cause of pain felt there. You won't know the infraspinatus is the culprit until you press on it.

Be wary of exercising and stretching the infraspinatus or any of the other shoulder muscles until the trigger points have been taken care of. Trigger points in the infraspinatus are unusually irritable, making stretching counterproductive as therapy. A therapist may insist on the need for exercising the shoulder, but the weakness and stiffness that seem to be the problem are actually part of the protection the trigger points are trying to provide. Muscle strength comes back quickly when trigger points are deactivated. Exercise and stretching are helpful for getting your range of motion back, but not until the trigger points are gone.

## *Teres Minor*

The *teres* (TEH-reez) *minor* muscle lies right below the infraspinatus on the shoulder blade and has a similar attachment to the back of the head of the humerus (figure 5.28). The teres minor helps the infraspinatus rotate the arm outward.

The pain pattern for the teres minor is very different from that of the infraspinatus; it refers primarily to a very confined spot on the back of the shoulder in the area of its attachment to the humerus. Pain from trigger points in the teres minor may not be noticed until after more oppressive problems with other shoulder muscles are dealt with.

Teres minor trigger points can also be the cause of a worrisome numbness or tingling in the fourth and fifth fingers. Note that a comparable pattern of finger numbness can also come from trigger points in the pectoralis minor. Pain instead of numbness in these two fingers suggests latissimus dorsi trigger points (Simons, Travell, and Simons 1999).

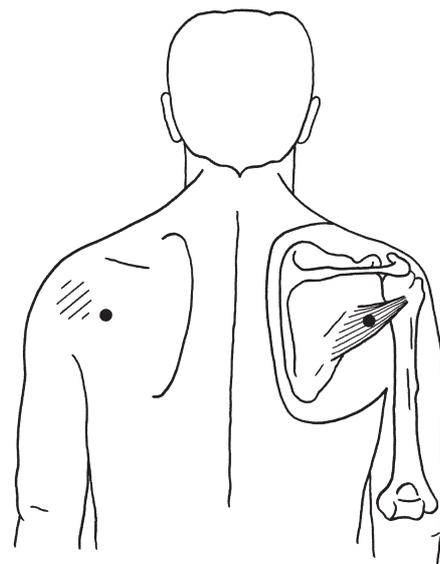


Figure 5.28 Teres minor trigger point and referred pain pattern