

SHOULDER PAIN EXPLAINED

By **GRAHAM NELSON**
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ABOUT NORTHWEST PHYSIOTHERAPY GROUP

Northwest Physiotherapy Group was first established as Essendon and Moonee Ponds Physiotherapy Clinic in 1990. We have over 50 years combined experience in muscle and joint conditions, and a fully equipped, purpose built facility with state of the art pilates studio and rehab gym.

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INTRODUCTION

Do you have persistent shoulder pain which interrupts your normal work or sporting activities?

This report will explain why shoulder pain, particularly impingement occurs and how to manage it to become pain free again.

The shoulder joint is a ball and socket type articulation where the rounded head of the arm bone or humerus sits in a shallow concave cup of the glenoid (see diagram below) which is part of the shoulder blade or scapula bone.

As you can see there is a very narrow space to accommodate the tendons which move your arm and control the head of the humerus to allow pain free movement without pinching or irritation. That space is called the subacromial space and compromise or narrowing of the space can cause pain with overhead shoulder movements or with reaching, lifting or with static positions. Shoulder impingement can have varied causes many of which can be determined by careful clinical examination and appropriate testing using x-ray or ultrasound. **There are 2 main types of impingement, primary and secondary.**



Anatomy of Shoulder Joint (from Google Images)

PRIMARY IMPINGEMENT

Primary impingement occurs when injury, degenerative change or anatomical variation cause the subacromial space to be narrowed resulting in pinching or impingement of the tendons of the rotator cuff particularly supraspinatus with movement of the arm overhead, forward or to the side.

Conditions causing primary impingement and pain are well recognised and they include:

1. Bony abnormalities such as a hooked projection down into the subacromial space from the outer part of the collar bone or the acromion which narrows the subacromial space from above.
2. Inflammation of the subacromial bursa which is like a small fluid filled sac which provides lubrication for the tendons as they glide over bony surfaces and prevents friction or damage. With inflammation the bursa can become thickened and swollen again reducing the subacromial space.
3. Rotator cuff tendinopathy which includes degenerative change to any of the rotator cuff muscles comprising of the supraspinatus, infraspinatus, teres minor and subscapularis whose primary function is to control the head of the humerus and keep it braced against the shallow cup of the glenoid with active arm movements. Tendinopathy again can cause swelling thickness to secondary to repeated micro trauma or degenerative changes.
4. Partial tearing of the rotator cuff muscles and resultant weakness causing a reduced capacity of the cuff muscles to control movement of the head of the humerus with active motion resulting in the humeral head being elevated in its articulation with the glenoid and pinching the tendon from below.

These clinical dysfunctions are well known and respond to appropriate interventions such as physiotherapy, local cortisone injections, rest, change of aggravating activity and sometimes surgery. **Other causes of impingement are not as obvious on investigations such as ultrasound scanning and need careful assessment to detect movement abnormalities that can be treated with physiotherapy.**

SECONDARY IMPINGEMENT

Secondary impingement occurs when musculoskeletal structures influence the capacity of the head of the humerus to stay centralised in the glenoid during active movements of the shoulder.

It is essential to differentiate between primary and secondary impingement to treat shoulder pain successfully. Treatment of the painful symptoms will not improve secondary impingement signs, pain levels or loss of function.

You must treat the cause of the impingement following a comprehensive musculoskeletal assessment. To successfully treat secondary impingement you must assess your patient's activities, posture, muscle imbalances and capsular restrictions which can cause the head of the humerus to shift its axis of rotation and to migrate upwards causing painful impingement of the rotator cuff tendons.

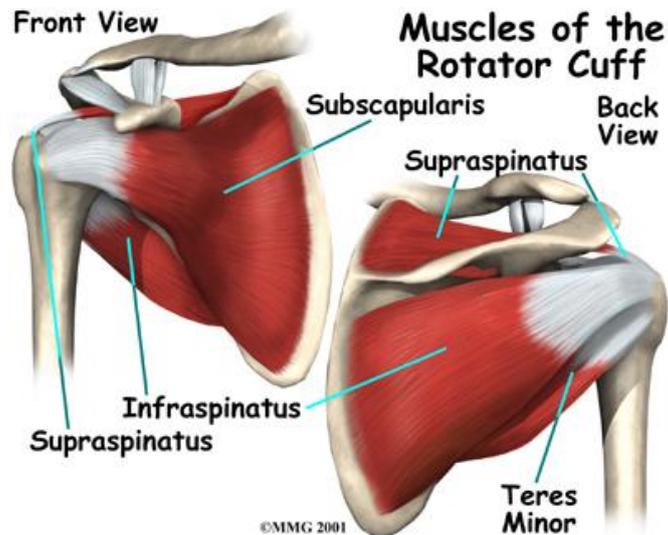
SIGNS AND SYMPTOMS OF SECONDARY IMPINGEMENT

Secondary impingement is a common presentation in our physiotherapy clinic. Often people will present but have negative tests on ultrasound and x-ray. The typical complaint is pain associated with activities using the affected arm such as reaching forward or behind, sudden movements of the shoulder, pain with weight bearing through the arm or pushing up on the symptomatic arm, lifting overheads or with the arm extended and with throwing type movements.

When assessed the objective signs of impingement would include a pinch or a painful arc on active movement, reaching forward or to the side. Positive testing on shoulder impingement tests. Weakness with muscle testing for the shoulder joint and poor function or inhibition of muscles such as lower trapezius serratus anterior and overactivity of upper trapezius. There is often static and dynamic postural and movement dysfunction that can indicate poor control of the shoulder blade.

MUSCULOSKELETAL CAUSES OF SECONDARY IMPINGEMENT

Clinically on examination we often find musculoskeletal causes of painful arc that contribute to secondary impingement. This affects the function of the rotator cuff muscles to centralise the head of the humerus in the glenoid. Some of these contributing factors include:



Tight posterior joint capsule causing the humeral head to shift forward in the glenoid. Positive tests are decreased humeral posterior glide in the glenoid and a tight shoulder quadrant and may also present with restricted range of passive rotation and abduction.

Referral from the cervical or thoracic spine usually felt as an intermittent ache across the posterior aspect of the shoulder extending to the suprascapular region or the upper arm. There is often tenderness and segmental hypomobility in the neck and thoracic spine assessed on passive testing with muscle guarding and inhibition of the rotator cuff muscles. These conditions are often gradual in onset and secondary to postural loading or habitual activity.

Decreased stabilising capacity of the scapular muscles. Coordinated movement of the scapula and humerus must be maintained through range to have pain free shoulder movement. If the scapula is elevated or anteriorly tilted the subacromial space is compromised. This is often evident in postural assessment when the scapulae are asymmetric indicating muscle imbalances and through range there is poor control or excessive activity seen on the painful side. Lower trapezius and serratus anterior often need to be functionally strengthened.

Trigger points can be found in the stronger prime mover muscles with subsequent inhibition of the antagonist muscle group. Upper trapezius, subscapularis and levator scapulae often contribute to painful shoulder movement. A comprehensive assessment is necessary to clear other regional muscle groups that may contribute to shoulder dysfunction.

Postural loading such as patients who present with rounded shoulders, head forward posture and thoracic kyphosis can contribute to impingement pain because of the resultant anterior tilt in the scapula narrowing the subacromial space. In those conditions we routinely find decreased cervical stabilising muscle activity in the short neck flexors as well as a tight pectoralis minor and overuse of levator scapular and upper trapezius. Often in evidence is decreased endurance and weakness in the thoracic extension muscles and scapular retractors.

Shoulder pain and impingement is a common presentation at a medical/physiotherapy clinic and investigations often prove negative. Treatment of the symptoms will not lead to a successful outcome which needs careful assessment and management of all factors contributing to the impingement.

At Northwest Physiotherapy Group we have over 50 years of combined experience and we routinely manage patients who have shoulder impingement symptoms. Our treatment approach is based on comprehensive assessment and movement analysis of all possible contributing factors.

There are good research studies that have demonstrated the effectiveness of Physiotherapy in the treatment of shoulder pain.

WHAT TO DO NEXT?

So if you have been struggling with shoulder pain that does not seem to be improving, call us at NWPNG on 9370 5654 or send an appointment request through the website.

We guarantee you will be completely satisfied with our professional, caring and comprehensive service.

(Please bring all reports/scans with you and be prepared to disrobe.)

Look forward to many years of increased energy, activity and enjoyment doing the things you love to do!!