

Dear Patient

Muscle Strains and Tears

Muscles are made up of hundreds of thin muscle fibres encased in a layer of connective tissue called fascia. When one or more of these fibres is torn, a muscle is said to be strained or torn. Muscles are fairly elastic and have the capacity to stretch and shorten. Forces which take the muscle beyond its natural length, or fatigue the muscle through repetitive movement may result in tearing of the muscle fibres.

Muscle strains usually occur during a sudden burst of physical activity such as playing sport, but also when performing demanding tasks such as heavy lifting at home or in the work place. Any muscle in the body may be affected.

Increased age, reduced fitness, poor strength, poor flexibility, fatigue and previous injury all increase the risk of straining a muscle. Muscles are most vulnerable to tearing when on stretch, such as the hamstring when someone is kicking a football, or the lower back when bending forwards.

CLASSIFICATION OF MUSCLE INJURY

Grade 1- less than 5% of fibres torn, no damage to connective tissue, pain not noticed at time of injury but minor pain later, area may be tender to touch.

Grade 2- more fibres torn, no damage to connective tissue, local bruising, may notice a 'pull' at the time of injury, may or may not be able to continue playing.

Grade 3- lots of fibres torn, some tearing of connective tissue, lots of bruising, severe pain, restricted movement, unable to continue activity.

Grade 4- a complete tear of the muscle and its connective tissue, complete loss of power and movement, pain may not be severe due to damaged nerve endings being unable to transmit the sensation of pain, lots of swelling and bruising.

PHYSIOTHERAPY TREATMENT

Physiotherapy treatment aims to optimise healing, restoring full range of motion and power to the damaged muscle, minimising scar tissue and preventing future damage by achieving the appropriate balance of strength and flexibility.

Your physiotherapist will initially treat the pain and inflammation before providing a specialised, sports specific rehabilitation program to help you return to your activity promptly and successfully.



Above: An example of a Grade 4 muscle tear. Biceps has been torn completely resulting in a "bunching" or "Popeye" effect on the muscle in the lower half of the upper arm.



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DO'S

First 24 hours

- Relative Rest
- Ice
- Compression
- Elevation
- Gently stretch to a point of discomfort, not into pain

DON'TS

First 24 hours

- Heat
- Alcohol
- Run
- Massage

MUSCLE REPAIR AND HEALING

Phase I (0-2 weeks) Immediately following the injury, there is an influx of inflammatory chemicals, liberated due to the bleeding, swelling and cell damage. The muscle will feel very bruised and tender to touch with markedly restricted movement and power.

Phase II (2-6 weeks) As healing progresses, connective tissue is laid down in a mesh formation and the muscle begins to feel stiff and tight. "Lumpiness" may be palpable at the sight of injury and gentle stretching and strengthening exercises should be commenced. At this stage there is a high risk of re-injury so care should be taken not to over stress the injured muscle.

Phase III (6 weeks+) In the final phase of repair the connective tissue and injured muscle require stretching and strengthening to align the new fibres along the lines of stress. At this point exercise is essential to ensure the restoration of normal muscle function.

Disclaimer : The material contained in these pages is intended as a guide only and does not constitute advice or treatment. For further information, please see your qualified health professional.

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