

THE
BODY

VOLUME 2 OF *THE HUMAN GARAGE* TRILOGY

and improvement with cooling. A common cause is a fall, and occasionally crystal deposits due to gout or infection.

Provisional diagnosis is by physiotherapy assessment, and for conformation, MRI, and treatment can include: rest from the aggravating activity, physiotherapy, and pulsed shortwave.

Have you had an injury to your upper anterior thigh that hasn't got better?

If so, it could be a quads strain at the attachment onto the pelvis.

QUADS STRAIN (NEAR HIP)



The rectus femoris central tendon inserts at the pelvis in two locations, the direct and the indirect head. The indirect head is deeper, and flattens and rotates before it blends into the rectus femoris muscle at the central tendon. Injuries in this area are thought to occur due to the two parts acting independently, resulting in a shearing at the central tendon. Symptoms can eventually become apparent months after the injury, and recovery time with a comprehensive rehab program can be three to six times longer

than a normal quads muscle strain.

Diagnosis is by physiotherapy assessment, with MRI to confirm, and treatment can include: RICE, massage, physiotherapy, shockwave, and prescribed exercise and stretching.

Has the belly of your quads felt tender and weak for a long time, and has it been painful to run and kick?

If so, you may have quadriceps strain.

QUADRICEPS STRAIN

The quads comprise of four muscles: rectus femoris, vastus lateralis, vastus intermedius, and vastus medialis. These muscles cause hip flexion and knee extension, and they arise from the pelvis and femur (thigh bone) and insert via the patella tendon on the tibia (shin bone). Only the rectus femoris attaches above the hip joint into the pelvis, and as a result, is far more vulnerable to injury.

Strains are graded in the usual way: mild, moderate, and complete tear. The usual symptom is immediate pain, and depending on the severity of the strain, swelling and bruising can also occur. The location of the injury can sometimes be felt – a complete tear may feel like a hole.

It is important not to stress the area and to control swelling as quickly as possible. The injury will heal in time – typically in two to six weeks, depending on the severity of the injury. Management of the scar tissue formation is important to regain full capability. In some cases, a strain can occur deep in the rectus femoris muscle, which will require significantly longer rehab.

Diagnosis is by sports physiotherapy assessment, and MRI if severe, and treatment can include: RICE, maintaining exercise by cycling (if not painful), sports massage, ultrasound, laser, and sports specific rehab.

Have you felt a sudden onset of pain – possibly a swelling in your thigh – most likely after a sprint start, rapid change of direction, jumping, or martial arts kick? Have you had traumatic pain to your inner thigh, and if you try to close your legs against resistance, is it too sore?

If so, you may have adductor longus strain, or rider's strain.

ADDUCTOR LONGUS STRAIN

The adductors are located on the inside of the thigh and act to close the legs together. Adductor longus strain is common in football, hockey, tennis, horse riding, and karate, and it tends to happen when the athlete needs to quickly change direction and the adductors are subjected to high forces, such as in a football tackle where an adducting foot is about to kick the ball and meets an opponent's leg. This type of strain is responsible for 62% of groin injuries.

Diagnosis is by physiotherapy assessment and treatment can include: physiotherapy, shockwave, massage, and if acute, ultrasound and pulsed shortwave. Recovery can be lengthy – up to five months.

Have you had a bruising injury some months ago? Do you now feel a bony lump there?

If so, you may have myositis ossificans.

MYOSITIS OSSIFICANS

This is an uncommon condition in which bone is formed inside an injured muscle. Many sports are prone to muscle injury – such as football, rugby, martial arts, and hockey – and these injuries can lead to heavy internal bleeding, evident as bruising and swelling, and can also result in a blood clot, which is an ideal breeding ground for calcification. Left untreated, the calcification can continue to develop and may take over much of the injured site over several months.

The key to prevent myositis ossificans – or the growth of bone by calcification within the injured muscle – is to seek treatment as early as possible after the injury. Once formed, the bone can only be removed surgically and the current guidelines advise waiting up to 12 months to minimise the risk of further bone growth post-surgery. The cause of myositis ossificans is not understood, and there *is* a risk of further bone growth post-surgery.

Diagnosis is by physiotherapy assessment, X-ray to confirm the diagnosis, and checks to confirm it is non-malignant. Treatment can include: drugs to relieve the symptoms, and surgery.

Have you suffered a blow to the front mid high (quads)? Are the muscles swollen and sore?

If so, you may have quadriceps contusion, or 'dead leg'.

DEAD LEG

There are three grades of contusion, and grades I and II are commonly known as 'dead leg':

- Grade I: The thigh will feel tight and mildly uncomfortable on walking or extending the knee.
- Grade II: You will be unable to run or walk quickly, and unable to bend the knee fully.
- Grade III: A muscle tear with severe pain, you will be unable to walk without crutches or contract muscles. You will be out of competition for six to 12 weeks.

The quads comprise of four muscles: rectus femoris, vastus lateralis, vastus intermedius, and vastus medialis. These muscles cause hip flexion and knee extension, and they arise from the pelvis and femur (thigh bone) and insert via the patella tendon on the tibia (shin bone). The quads are easily kicked in contact sports, sometimes leading to a severe bruise or tear (grouped as contusion) that can take weeks or months to heal. A quads contusion can be swollen, sore, and bruised.

A contusion injury results in a crushing force on your muscle tissue, and the body's protective response is to wall-off the area of damage from the unaffected muscle in order to prevent damaging chemicals – released due to the injury – from further damaging more muscle. This results in an overall decrease in the oxygen to the surrounding tissue. This walling-off causes stiffness, creating an internal splint to prevent further injury and slowing down

healing. Repeated overuse causes microscopic soft tissue failure, inflammation, and rupture. Healing involves inflammatory cells, macrophages clearing necrotic cells, and muscle cells regeneration.

Treatment can include: physiotherapy, ultrasound, pulsed shortwave, light massage, and gentle prescribed rehab.

Do you have localised pain at the back of your thigh?

Does it hurt to bend your knee against resistance, and does it feel weak?

Do your hamstrings feel tight when you stretch them?

If so, you may have hamstring strain.

HAMSTRING STRAIN



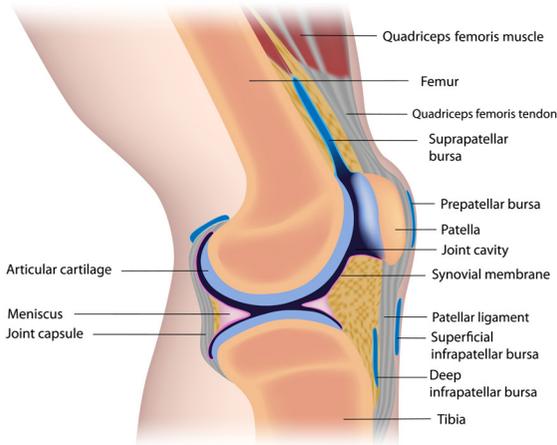
Tight hamstrings, SI joint dysfunction, and lumbar spine radiculopathy all have to be assessed in order to confirm hamstring strain; just because the hamstrings may feel tight, they may not be short and therefore stretching does not always help. The brain feels tightness as a signal that

something is wrong; it cannot perceive shortness in length. Therefore, overstretched muscles can feel tight, and the problem could be coming from the lower back, from the pelvis, or from the sciatic nerve. Back problems can cause short hamstrings and vice versa – lots of sitting or driving without core stability can cause this. You need to have a rehab stretching program specific to you and your sporting needs.

Diagnosis is by sports therapist/physiotherapy assessment.

The hamstring muscles run down the back of the thigh, and there are three of them:

Anatomy of the Knee Joint



- Semitendinosus
- Semimembranosus
- Biceps femoris

They start at the bottom of the pelvis at a place called the ischial tuberosity, crossing at the knee joint and ending at the lower leg. Hamstring muscle fibres join with the tough, connective fascia of the hamstring tendons attaching to

bones. The hamstring muscle group helps you extend your leg straight back, as well as bending your knee.

During a hamstring strain, one or more of these muscles gets overloaded, and the muscles might even start to tear. You're likely to get a hamstring strain during activities that involve a lot of running and jumping, or sudden stopping and starting. The three grades of hamstring injury are:

- Grade I: A mild muscle strain.
- Grade II: A partial muscle tear.
- Grade III: A complete muscle tear.

The length of time it takes to recover from a hamstring strain or tear will depend on how severe the injury is. A minor muscle pull (grade I) may take a few days to heal, whereas it could take weeks or even months to recover from a muscle tear (grade II or III).

Getting a hamstring strain is also more likely if:

- You don't warm up before exercising.
- The muscles in the front of your thigh (the quadriceps) are tight as they pull your pelvis forward and tighten the hamstrings.
- You have weak glutes (bottom muscles). Glutes and hamstrings work

together; if the glutes are weak, the hamstrings can be overloaded and become strained.

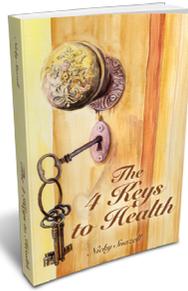
Treatment can include the following:

- Avoid putting weight on the leg as best you can. If the pain is severe, you may need crutches until it goes away – ask your doctor or physio if they're needed.
- ICE: Ice your leg to reduce pain and swelling. Do it for 20 minutes every four hours for two to three days, or until the pain is gone. Compress your leg. Use an elastic bandage around the leg to keep down swelling. Elevate your leg on a pillow when you're sitting or lying down.
- Take anti-inflammatory painkillers and painkillers from your pharmacist or GP. Non-steroidal anti-inflammatory drugs (NSAIDs) – like Ibuprofen or Naproxen – will help with pain and swelling. However, these drugs may have side effects, such as an increased risk of bleeding and ulcers. They should only be used short-term, unless your doctor specifically says otherwise.
- Practice stretching and strengthening exercises if your doctor/physical therapist recommends them. Strengthening your hamstrings is one way to protect against hamstring strain.
- Sports massage, shockwave, stretching, and rehab will all help to speed up recovery.



Are you unable to move your knee after a sudden trauma? Is the joint deformed, swollen, and cannot bear weight?

If so, you may have a dislocated knee.



Also Available from Nicky Snazell

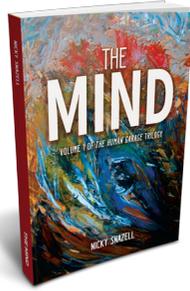
The 4 Keys To Health

This book is a self-help manual of preventative health. It has four chapters – mind, food, fitness, and lifestyle – with questionnaires that score you red, amber, and green in terms of health; holding 4 green keys means you are in optimum health.

This book is a result of 30 years' study in the fields of biology, psychology, physiotherapy, and pain. It is my personal insight into health, shared with my patients and audiences internationally.

You can view a YouTube video of Nicky explaining the book at:

https://www.youtube.com/watch?v=sc_i1b979XA



Also Available from Nicky Snazell

The Mind (The Human Garage Part 1)

Throughout this series of books I am going to share with you my recipes of integrated medicine for physical health, and in this edition we focus on the mind.

The Mind is the first book in *The Human Garage* trilogy, and is available now.

The Human Garage Part 3, The Soul, will also be available soon.

This book will explore the science and spirituality of energy healing and the power of hands-on healing, as well as touching on the psychic side of things.