FROM THE SOLE

Tips to keep you running at your best

AUGUST 2017

intraining

running injury clinic

33 Park Road, Milton & Indooroopilly Shopping Centre

ph: 07 3367 3088 | clinic@intraining.com.au

Podiatry **Physiotherapy** **Dietitian** **Massage** **Pilates**

GAIT MODIFICATION DRILLS

by Steve Manning - intraining podiatrist, coach and runner

There are a few circumstances where running technique can be a cause of injury. However most times it is only a contributing factor to injury. Gait modification drills can be used to correct running form faults and improve control while running.

Drills are categorised by the type of change you are seeking. The initial drills are about Coordination and include drills like high knees and bum kicks. Their goal is to create a coordinated and flowing movement between the upper and lower limbs.

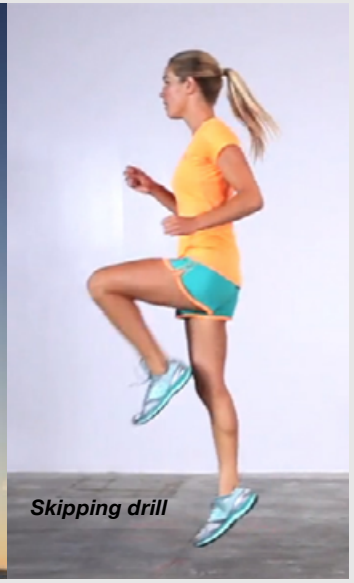
Another group is focussed on reaction time. Their goal to develop the body's ability to react and alter its position quickly using sensation, perception and response.

The final and hardest group are power drills, incorporating plyometric training, with the aim to reach maximum muscle force in shortest period of time. Plyometric training creates a pre-stretch of the muscle before contracting forcefully. These drills include, skipping and bounding.

While improving strength and control through running drills may also improve performance, the main goal is a reduction in injury risk. Running drills create greater strength outside the limited range of motion that running usually involves. They are an exaggerated movement of what you want to do when running. That way if you are in a high injury risk movement like when spraining an ankle your body will be able to recognise what is happening and automatically change what you are doing to avoid injury.

If you are training more without realising the benefits of increased performance, it may be a simple modification to your running form that will result in the benefits you are looking to achieve. The intraining Running Injury Clinic conducts running form workshops on a regular basis.

Plyometrics drill



Skipping drill

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BEETROOT RISOTTO

by Liz Lovering - intraining sports dietitian, runner, chef and coach

Risottos make a delicious high carbohydrate alternative to the usual pasta meal eaten the night before a morning race. As with pastas, there are lots of different flavours that can be added to a risotto. This Beetroot Risotto is rich in colour and flavour and pairs beautifully with the lemon, dill and ricotta.

Serves 4

INGREDIENTS:

2 x tablespoons extra virgin olive oil (EVOO)

2 x cloves garlic, crushed

1 x medium red onion, peeled and finely chopped

1 x cup Arborio risotto rice

300g beetroot, grated or chopped in food processor (I roasted mine first)

4 cups hot chicken or vegetable stock

4 x tablespoons Ricotta cheese, lemon wedges and fresh dill to serve

Salt and pepper to taste

METHOD:

Heat olive oil in a medium pan over a medium heat

Add garlic and onion and cook until soft, stirring frequently

Add rice and continue to cook and stir for 2 minutes

Add about 1 cup of hot stock to the rice mixture, stirring until the liquid is absorbed before adding the beetroot and the next cup of stock

Continue this process until all the stock has been absorbed

Once all the stock had been absorbed, season to taste, serve in bowls and top with Ricotta cheese, chopped dill and a wedge of fresh lemon.

SERVING SUGGESTIONS AND TIPS

Use gloves when handling beetroot. To increase the protein content serve with cooked chicken, grilled fish or tofu or top with chopped nuts.

NUTRITION

Each serve contains approximately 50g carbohydrate, 8g protein, 11.5g fat, 5g fibre and 1450kJ (350 calories).

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GAIT RELATED SHIN PAIN

by Doug James - intraining physiotherapist and podiatrist

Running injuries are common. In a given year, runners have a 70-80% likelihood of developing an injury that will prevent them from running pain free for at least a week. While there are many different types of injuries that can occur, some people may be more prone to a particular injury while seemingly resistant to others. There are a lot of different factors that can account for this including age, sex, training history, biomechanics (and more) however of these, running technique is one of the few factors that can be changed.

It needs to be mentioned that no particular running technique can guarantee that you will be injury free. Different, and sometimes worse injuries can develop when people attempt to change their running style. The aim of this article is understand the types of shin injuries that can develop from running, and the factors influencing them.

"Shin Splints" is a commonly used term but utterly innaccurate

Shin injuries are commonly lumped under the umbrella term of 'shin splints' by some medical professionals. This rather obtuse term neglects the specific location, onset and severity of the injury – all factors required for correct diagnosis and subsequent treatment.

ANTERO-LATERAL SHIN PAIN

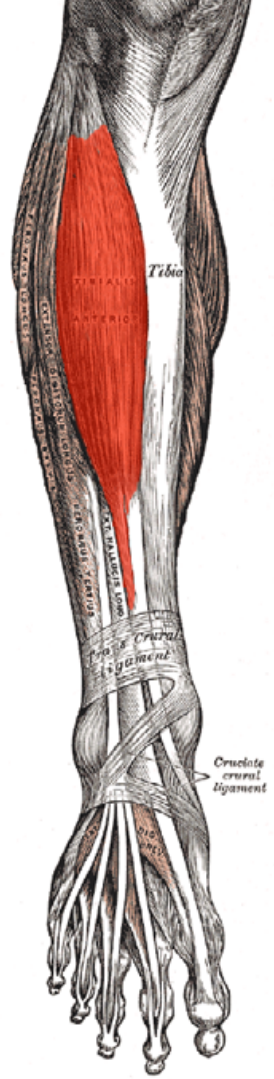
Pain on the outside part of the front of your shin is usually related to the Tibialis Anterior muscle. This long muscle is responsible for lifting your foot upwards at the ankle joint. The muscle can become overworked if subjected to more exercise than it is used to and tends to become sore after the run, with pain disappearing a few days later. This injury is frequently seen in those that are new to running, or returning after time off from the sport. People that tend to heel strike (i.e. land heel first) are far more likely to be affected by this injury, and athletes are also more at risk if running in incorrect footwear – particularly if the shoe is too stiff (resulting in foot slapping), or lacks adequate pronation support.

Heel striking occurs when the runner's heel lands on the ground first - usually in front of their centre of mass – and the further in front, the more of a problem this poses. In this position the Tibialis Anterior muscle is working to have the toes lifted higher than the heel to prevent tripping. The forefoot then rapidly lowers putting further strain on the Tibialis Anterior as it is responsible for the controlled descent of the foot. Once the foot is flat on the ground, the Tibialis Anterior may be subject to further strain if the foot heavily and/or rapidly pronates (rolls inwards).

The Tibialis Anterior can be put under even greater levels of strain when running downhill as this tends to amplify the slapping movement of the heel-to-toe progression.

POSTERO-MEDIAL SHIN PAIN

Pain felt on the inside part of the shin along the edge of the tibia (shin bone) is often diagnosed as Medial Tibial Stress Syndrome (MTSS), or more recently known as Medial Tibial Traction Perisostitis (MTTP). Irrespective of the nomenclature, the injury usually begins as a broad area of discomfort along the inside part of the shin. This usually starts as a mild discomfort at the start of the run, but resolves after a few minutes. The pain is usually a response to an increase in loading along the edge of the tibia causing swelling around the periosteum (outer lining of the bone) initially, which can progress to bone damage thereafter. The increased loading is usually from higher running volume or intensity (or both) than is usual. Conjecture exists as to whether damage is due to force generated at foot strike, associated muscle tension from the Posterior Tibialis muscle, or some combination of both.



Running can cause injuries to muscle and bone in the shin.

"Your running technique can predict the type of injuries you get"

Training load plays a large role in the development of this injury, however there are certain gait factors that may increase the likelihood of developing it. Over-pronating can play a part in increasing the tension in the Posterior Tibialis muscle, which in turn exerts a traction force on the tibia. Overstriding (landing too far in front of the centre of mass) increases the initial impact forces transferred through the lower limb and shin that can also damage the tibia. Additionally, running in shoes that offer insufficient cushioning (i.e. are worn out, or offer less support than the athlete is accustomed to), and under-pronating can increase shock that also affects the tibia and lower limb.

WORSE STILL...

With both of the injury areas mentioned above, after a sufficient reduction in training (and in some cases complete rest) for a suitable period, the injury will recover and heal. There are two notable exceptions to this however - shin injuries where pain becomes worse with running need to be investigated immediately. Sharp localised pain (on the front or side of the tibia or fibula) can be the sign of a stress fracture and should never be run on as this will steeply increase the injury severity and healing time required. Management usually involves rest (the amount of which can be calculated somewhat more precisely with the aid of an MRI scan), a fracture boot (in some cases), and a considered return to exercise plan.

The other critical shin injury not to miss is compartment syndrome. This is a dangerous injury where pressure builds up in the muscle sheath persisting for hours after exercise and can lead to permanent damage to the muscle and nerves in the leg and foot. This often requires surgery. If you suspect you have a stress fracture or compartment syndrome this should be investigated immediately.

"A running assessment can help identify faults leading to shin injuries"

For the injuries mentioned earlier, specific changes in running gait, footwear, and training can help to reduce the severity and reoccurrence of these injuries and possibly lead to better performance as well. If you've been dealing with running related shin problems, contact the intraining running injury clinic for an appointment.

Overstriding and heel striking are two common factors in shin pain

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