PENSHURST ST
PHYSIOTHERAPY
AND SPORTS CLINIC

WELCOME TO OUR
NEWSLETTER

Here's what our physiotherapists will be covering in this edition:

1. *Medial Tibial Stress Syndrome* by Mark Liao
2. *Relative Energy Deficiency in Sports (RED-S)* by Joshua You
3. *Neck Pain for Office Workers* by Jonathan Lee
4. *A Case of Load Management for a Persisting Tendinopathy* by Laurence Nguyen

MARK LIAO

SHIN SPLINTS (MEDIAL TIBIAL STRESS SYNDROME)

MTSS occurs due to inflammation of the periosteum, tibialis anterior (TA), tibialis posterior (TP), and flexor digitorum longus muscles (FDL), and are most commonly seen in runners, dancers, and military personnel (1). Repetitive stress over time reduces these structures' ability to tolerate load effectively. If left untreated, shin splints can progress to more serious injuries, such as stress reactions and fractures, causing significant loss of function and distress for the athlete (2). The things most commonly complained from patients regarding MTSS include (3): Increased volume or intensity in their training, the location of pain is greater than 10cm along the medial distal tibial, and pain during movement but ceases during rest.

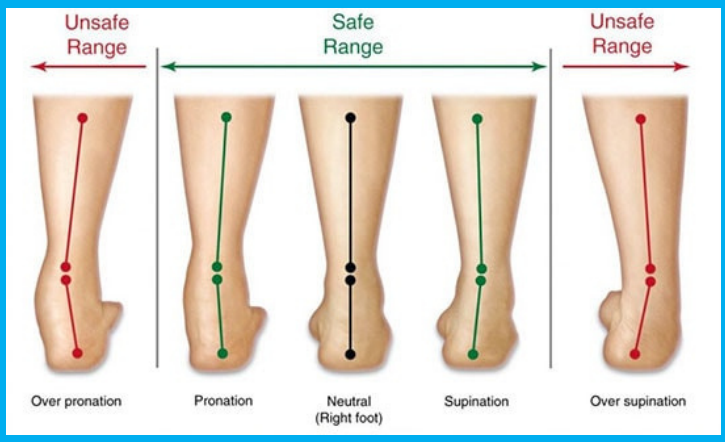
What you can do:

Education on the pathophysiology, and controlling loads is key. This includes modifying activities, such as switching to lower-impact exercises like swimming and cycling, to reduce strain on the affected structures (4). Ice and compression can help manage swelling and pain in the short term. You may also refer the individual to a podiatrist for customised shoes and orthotics (5). If you suspect the issue may be more than shin splints, consider further investigations (MRI) to screen for potential stress reactions or fractures (1).

What we specialise and excel at:

1. Provide in depth movement analysis and biomechanical assessment within our clinic with our treatment and equipment, such as:
   - Foot position (Symptomatic overpronated foot increases strain on the TA, TP, and FDL(5)).
   - Stride length and cadence (Over striding causes the centre of mass to move far causing ineffective shock absorption(6)).
   - Symptomatic walking/running pattern (Too much internal rotation of the hip and tibia can cause the knees to cave in and overpronated feet (7,8)).
2. Soft tissue release of the tibial periosteum, TP, FLD, and TA to relieve stress and taping to support these muscles (1,6,9).
3. Individualised rehabilitation, increasing the strength/capacity of the muscles with customised exercises and dosages.
4. Providing education tailored to your patients needs and goals such as reducing stride length and focusing on increasing cadence (6).

We want to provide significant meaningful changes to your patients and celebrate their recovery journey. Know well leaving your patients in our care so do not hesitate to refer your patients to us.



Find Mark's references here by scanning the QR code!

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JOSHUA YOU

RELATIVE ENERGY DEFICIENCY IN SPORTS (RED-S)

Relative Energy Deficiency in Sports (RED-S) is a syndrome affecting both females and males where they experience low energy availability leading to impairments in their health and physical performance.

Low energy availability (LEA) is often the cause of RED-S, and athletes may be doing it intentionally or unintentionally. Athletes could be deliberately undereating to manage their bodyweight/body image or not having enough nutrition when participating in increased training loads. The mismatch between nutritional intake and energy expenditure leads to physiological functions being down-regulated an preserved for more essential function and movement.

Signs and Symptoms:

1. Disrupted menstrual cycle.
2. Decreased bone mineral density.
3. Lower HR and systolic BP.
4. Constipation.
5. Eating disorders.
6. Low self-esteem, anxiety and depression.

Potential implications:

1. Stress fracture.
2. Overuse injuries.
3. Body dysmorphia.

Our roles as the medical team would be to treat this holistically and providing significant education on nutrition, load management and medication if warranted. If there are certain psychological barriers then referring for mental health support would also be required. Sport-participation can be modified as high impact movements or exercise in severe cases may lead to a stress fracture.

Below is an example of a screening tool that can be used to identify any athletes who are at risk of developing RED-S.

STEPS	RISK MODIFIERS	CRITERIA	RED-S SPECIFIC CRITERIA
STEP 1 Evaluation of Health Status	MEDICAL FACTORS	- Patient Demographics - Symptoms - Medical History - Signs - Diagnostic Tests - Psychological Health - Potential Seriousness	- Age, sex - See Yellow Light column in RED-S Risk assessment model - Recurrent dieting, menstrual health, bone health - Weight loss/fluctuations, weakness - Hormones, electrolytes, electrocardiogram, DXA - Depression, anxiety, disordered eating/ eating disorder - Abnormal hormonal and metabolic function - Cardiac arrhythmia - Stress fracture
STEP 2 Evaluation of Participation Risk	SPORT RISK MODIFIERS	- Type of Sport - Position Played - Competitive Level	- Weight sensitive, leanness sport - Individual vs. team sport - Elite vs. recreational
STEP 3 Decision Modification	DECISION MODIFIERS	- Timing and Season - Pressure from Athlete - External Pressure - Conflict of Interest - Fear of Litigation	- In/out of season, travel, environmental factors - Mental readiness to compete - Coach, team owner, athlete family, sponsors support - If restricted from competition

HIGH RISK RED LIGHT	MODERATE RISK YELLOW LIGHT	LOW RISK GREEN LIGHT
- No competition - No training - Use of written contract	- May train as long as he/she is following the treatment plan - May compete once medically cleared under supervision	- Full sport participation

Find Joshua's references here by scanning the QR code!

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JONATHAN LEE

NECK PAIN FOR OFFICE WORKERS

Neck pain and associated upper limb pain has a prevalence of up to 60% of Australian office workers, with office workers reporting at a proportionately higher rate compared to other occupation industries. Neck pain poses a significant impact on quality of life, productivity, and economic burden if left untreated. Within the work environment, people are continuously exposed to risk factors including physical (Ergonomic, posture), environmental factors (E.g. Repetitive work, exposure level) and psychosocial factors (E.g. Stress, pace, job demands, lack of autonomy).

Physical risk factors related to posture including prolonged sitting and neck flexion related to ergonomic setup can be modified with correct advice and targeted exercise and management programs. This is the main domain which physiotherapists work towards assist patients with managing their neck pain.

What we can do:

1. Short term relief with in our treatment sessions with assessment and manual therapies

- Our assessments consider individual and environmental risk factors that affect our patient, which are then applied in their treatment.
- Manual therapies are targeted towards the assessed symptomatic areas.
- We provide advice for modifiable risk factors within scope of practice for ergonomics such as workplace setups for chairs, desks, monitors, keyboards, and mouse positions.
- When out of scope factors are identified, we refer or advise the patient to engage relevant practitioners where appropriate, e.g. psychological or psychosocial factors.

2. Long term management with tailored exercise programs

- Our management programs include advice and exercises.
- Actionable advice is given for modifiable physical risk factors, with planning for workload/working patterns, such as scheduled short breaks at work and stretching movements.
- We specialise in exercise programs for all types of patients and includes exercises that can be completed at home, at work or in the gym, depending on the patient's needs.
- Exercises are catered to the patients needs and abilities with consideration of their environmental and social circumstances.

3. Preventative management programs

- All of our exercise programs and treatment sessions aim to continue exercises after the symptoms have resolved with the aim for prevention.

Find Jonathan's references here by scanning the QR code!

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LAURENCE NGUYEN

A CASE OF LOAD MANAGEMENT FOR A PERSISTING TENDINOPATHY

We talk about load management a lot - However, there are few sources that actually show the concept in action. Let me take you through MY own rehabilitation process for my left patella tendinopathy that is strongly attributed to weighted squats.

There have been models of progression that have been documented (See figure below), however, we as physios must individualise to the patient.

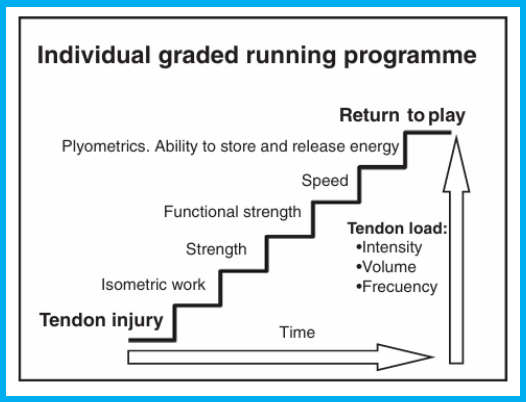

Figure 1 - From Mascaro et al 2017. Reference in QR code

Below is a table illustrating the progression. Pain was kept at <5/10 NRS scale to prevent significant flare-ups:

Week	Monday	Wednesday	Friday	Result	Reason for progression or change at final week
1-6	Leg extension 3x4 partial	Leg extension 3x4 partial	Leg extension 3x4 partial	Leg extension: 1 plate to 4 plates. Minimal pain after Monday gym	Could not progress further keeping the pain controlled
6-12	Weighted split squat 3x4 (Start 20kg, finished at 40kg)	Leg extension 3x4 full range slow	Leg extension 3x4 full range slow	Leg extension: 4 plates to 8 plates. Minimal pain after 2 days of gym in a row	Could not progress further than 8 plates keeping the pain controlled

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Week	Monday	Wednesday	Friday	Result	Reason for progression or change at final week
12-18	Weighted split squat (Start 40kg, finished at 64kg)	Leg extension 3x8 full range slow	Leg extension 3x4 full range, medium pace	Leg extension on Friday 12 plates Minimal pain after gym 3 days in a row	Stuck at 12 plates on Friday without aggravating the knee
18-24	Weighted split squat (Start 64kg, finished at 85kg)	Leg extension 3x4 full range	Leg extension 2x8 full range normal pace	Minimal pain during the week. Can add one jog without symptoms!	NOW - Currently at the stage where I will consider changing Friday leg extensions to assisted pistol squats to allow more recovery and account for the extra jogging!

Things to consider:

Other medical interventions - Such as PRP injections to allow the symptoms to possibly settle quicker and provide the environment for the tendon matrix to adapt better.

This is just one of many ways that I have approached this problem - However, in consultation with the other boys and knowing my own habits and compliance, this was the most optimal program at that time.

As I progressed the rehab exercises and loading - I recorded the effects afterwards and noticed that as the tendon capacity increased (As evidenced by the weights increasing), the pain slowly decreased post training sessions.

We had to consider my current lifting programme - Which consisted of heavy squats on Monday and Friday, and heavy deadlifts on Tuesday and Friday - Both exercises stressing the patella tendon! I consulted with my coach and made sure the programme did not interfere with the rehab - And vice versa.

As a result we are now at the stage where there are minimal symptoms post training sessions. We are not done yet - Due diligence must be exercised over the next few months if we want a durable return to sport!

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REFERRAL PATHWAYS AND COLLABORATIONS

The team here at Penshurst Street Physiotherapy would like to thank you for your ongoing commitment to our patient's health to making them move and feel better!

We hope that reading this newsletter was informative and valuable in supporting your clinical practice.

If you have patients who may benefit from physiotherapy for urgent treatment including the application of braces, casts or splints, we are able to provide **same day appointments**; You can give us a call directly or book online via the QR code!

Online booking here!

We also offer collaborative CPD sessions for GPs, designed to enhance your understanding and management of common musculoskeletal conditions encountered in primary care. These sessions are interactive, results-based, and tailored to the specific needs of your practice, with a practical assessment and referral strategies.

They can be held in-person at your clinic, or virtually, making it easy to integrate into your team's schedule. If your clinic is interested in hosting a CPD session, we'd be happy to discuss suitable topics and scheduling options.

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