



Physiotherapy management of shin splints pain

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Type of document	Guidance
Target audience	Physiotherapy Staff
Document purpose	To provide evidence based pathway for the assessment, treatment and physiotherapy management of patients with shin splints.

Document consultation		
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CWP documents to be read in conjunction with	HR6 MH13 CP3	Mandatory Employee Learning (MEL) policy Part IV and IVA - MHA 1983 Consent to treatment Health records policy
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Training requirements	There is specific training requirements for this document. Physiotherapists using this guideline are qualified Chartered Physiotherapists who are state registered with the Health Professions Council. In-service training has been used to present the guideline. Additional training can also be provided for any staff member, if a development need is identified during the Personal Development Review process or Clinical Supervision sessions.
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Financial resource implications	No
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Equality Impact Assessment (EIA)

Initial assessment	Yes/No	Comments
Does this document affect one group less or more favourably than another on the basis of:		
• Race	No	
• Ethnic origins (including gypsies and travellers)	No	
• Nationality	No	
• Gender	No	
• Culture	No	
• Religion or belief	No	
• Sexual orientation including lesbian, gay and bisexual people	No	
• Age	No	
• Disability - learning disabilities, physical disability, sensory impairment and mental health problems	No	
Is there any evidence that some groups are affected differently?	No	
If you have identified potential discrimination, are there any exceptions valid, legal and/or justifiable? N/A		
Is the impact of the document likely to be negative?	No	
• If so can the impact be avoided?	N/A	
• What alternatives are there to achieving the document without the impact?	N/A	
• Can we reduce the impact by taking different action?	N/A	
Where an adverse or negative impact on equality group(s) has been identified during the initial screening process a full EIA assessment should be conducted.		

If you have identified a potential discriminatory impact of this procedural document, please refer it to the human resource department together with any suggestions as to the action required to avoid / reduce this impact.

For advice in respect of answering the above questions, please contact the human resource department.

Was a full impact assessment required?	No	
What is the level of impact?	Low	

Document change history

Changes made with rationale and impact on practice
1.

External references

References
1. Edwards PH et al (2005) A practical approach for the differential diagnosis of chronic leg pain in the Athlete. American journal of sports medicine 33: 1241-1249
2. Bouche RT, JohnsonCH (2007) Medial tibial stress syndrome . Journal of the American Podiatric Medical association : 97 1 31-36
3. http://emedicine.medscape.com chronic exertional compartment syndrome Rowdon GA et al July 2011

Monitoring compliance with the processes outlined within this document

<p>Please state how this document will be monitored. If the document is linked to the NHSLA accreditation process, please complete the monitoring section below.</p>	<p>The document will be monitored by the Lower Limb Special Interest Group who have been involved in developing the guideline.</p> <p>Any changes in light of new evidence will be made by the group and reported to the wider team in the general staff meeting or via in-service training.</p> <p>The guideline will be audited after 5 years by the team.</p>
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1. Introduction

Chronic lower leg pain is often due to medial tibial stress syndrome (Bouche & Johnson 2007). It is characterised by pain over the distal lower third of the posteromedial aspect of the tibial cortex.

Patients with medial tibial stress syndrome often known as shin splints are frequently referred to musculoskeletal physiotherapy services by their GP via the Adult musculoskeletal Assessment and Management Service or by a Consultant. Accurate assessment and diagnosis are essential to implement an effective treatment programme. Patients presenting with a diagnosis of shin splints will initially be managed conservatively within the musculoskeletal physiotherapy services.

The purpose of the guideline is to provide a framework to support the most effective management of patients who are referred into the physiotherapy service with a diagnosis of shin splints using the best available evidence to date. The physiotherapy lower limb working group reviewed evidence from extensive literature searches as a basis for this guideline.

The aims of the guideline are:

- To establish a consistent approach to the conservative management of shin splints;
- To discuss differential diagnoses and signpost their management;
- To improve clinical outcomes;
- To contribute to Standards for Better Health D2d: Patients receive effective treatment and care, delivered by health care professionals who make clinical decisions based on evidence-based practice (DoH2004);
- To contribute to Standards for Better Health C5c: Clinicians continually update skills and techniques relevant to their area of clinical work (DoH2004);
- To contribute to Standards for Better Health C5d: Clinicians participate in regular clinical audit and reviews of services (DoH2004).

2. Definitions

Medial tibial stress syndrome or shin splints is characterised by pain and tenderness over the distal third of the posterior tibial cortex. It is most common in runners

3. Procedure

No.	Action	Rationale
1.	Take a detailed and thorough case history.	<ul style="list-style-type: none">- To establish the nature of the condition;- To rule out red flags (appendix 1);- To provide a framework for the objective assessment;- To establish patients expectations.
2.	Obtain documented informed consent for clinical examination.	<ul style="list-style-type: none">- To comply with the consent to examination and treatment policy'.
3.	Ensure patient is comfortable and relaxed.	<ul style="list-style-type: none">- To aid examination.
4.	Undertake clinical examination of the patient.	<ul style="list-style-type: none">- To establish and aid diagnosis;- To identify patients with medial tibial stress syndrome;- To rule out red flags not previously identified. (appendix 1);- To establish a baseline for rehabilitation;- To establish if further investigations are required.
5.	Complete standard physiotherapy assessment record.	<ul style="list-style-type: none">- To comply with the health records policy;- To record baseline assessment details.
6.	If red flags are identified, liaise with an Advanced Medical Practitioner or referring GP regarding an urgent orthopaedic referral directly to secondary care (appendix 1)	<ul style="list-style-type: none">- To ensure patient is referred for an orthopaedic opinion as soon as possible to enable further investigations and management.

No.	Action	Rationale
7.	Formulate a diagnosis of the patient's condition, considering differential diagnoses (appendix 2).	- To ensure the patients condition is managed most effectively.
8	Explain treatment plan to patient and obtain informed consent for treatment / management.	- To ensure patient understanding and compliance. - To comply with the consent to examination and treatment policy.
9	Follow treatment plan (appendix 3).	- To ensure treatment is of good quality and is evidence based; - To ensure that treatment is standardised across the trust.
10	Re – assess after 6 weeks.	- To decide on future management or discharge.

4. Duties and responsibilities

4.1 Author

Author(s) are responsible for ensuring that:

- Once ratified, the clinical guideline is maintained in an editable electronic version (master copy);
- An Impact Assessment has been completed for the document and submitted to the Head of Corporate Services and Business;
- The responsible committee or officers are alerted of any necessary review to be undertaken;
- All amendments are completed subsequent to the findings of any review.

4.2 Heads of service

Heads of Service and line managers are responsible for:

- Bringing the attention of their staff to the publication of a new document;
- Providing evidence that the document has been cascaded within their team or department;
- Where appropriate, ensuring the new document is effectively implemented;
- Ensuring that their staff attend all training identified in respect of a new documents.

4.3 Employees

The Employee is responsible for:

- All staff employed by CWP are responsible for adhering to this guideline, regardless of role, band, discipline or service area.

Appendix 1 - Red flags

1. Constant unremitting pain: may indicate malignancies, septic arthritis or osteomyelitis.
2. Previous history of cancer, night sweating, sudden unexplained weight loss.
3. History of recent trauma: crush injury, road traffic accident, fall from heights or sports injury.
4. Osteoporosis

Appendix 2 - Differential diagnosis of lower leg pain

Disorder	Definition	Findings	Management
Medial tibial stress syndrome	Most common source of lower leg pain	<ul style="list-style-type: none"> - Pain and palpable tenderness distal 1/3rd of the postero medial cortex of the tibia - Pain may occur at the start of the run and then ease only to reoccur towards the end of the run - Pain is usually eased with rest although if becomes more chronic then may have pain at rest - May develop erythema and swelling over the medial tibia - ROM at foot and ankle is unaffected 	<ul style="list-style-type: none"> - X-ray to rule out stress fracture / tumour. - Bone scan if conservative measures fail - Rest, NSAIDS and ice - 2-3 week period of rest or a decrease in training but can do low impact activity during this period such as static bike or swimming to maintain CV fitness - Address biomechanics with orthotics as required - Physiotherapy modalities as required - Gradual return to training as pain has subsided, if remain painful after 2-3 weeks rest then progress more slowly and if pain increases to stop training again - Posteromedial fasciotomy with intractable symptoms
Stress fracture	Overuse injury caused by bony microtrauma produced by repetitive loading. The site of the stress fracture may vary but is typically above the distal 1/3 rd . Common in athletes also those at higher risk are those with eating disorders, females with menstrual abnormalities, those with a history of stress fractures and	<ul style="list-style-type: none"> - Insidious onset of pain with a concurrent reported change in activity - Pain and tenderness is usually localised to the fracture site - Pain initially a mild ache dependent on activity - Pain more persistent as condition progresses - Redness and erythema may be evident - ROM usually normal 	<ul style="list-style-type: none"> - X-ray but normally don't see any changes until 2-3 weeks post onset of symptoms - Rest , may need a period of NWB - Analgesics, NSAIDS , ice - Maintain CV fitness see above - May need to be immobilised if pain does not settle - PSWD - Look at training regime and other factors such as footwear - Gradual return to sport once symptoms have eased may take 2-6 months - Surgery is rare

Disorder	Definition	Findings	Management
Chronic exertional compartment syndrome	Unilateral or bilateral leg pain following exercise. The anterior compartment is more frequently affected	<ul style="list-style-type: none"> - Pain , tenderness and possibly parasthesia with exercise - Symptoms ease with the cessation of activity but will generally reoccur with the same level of activity, with progression may be more constant - Pain often described as cramping , burning and may have the sensation of increased limb girth, tension post exercise - Pre exercise examination is normal 	<ul style="list-style-type: none"> - Compartmental pressure testing other investigations such as x-ray / bone scan and MRI are to rule out other differential diagnosis - Identify risk factors and address - Fasciotomy for more resistant cases
Nerve entrapment	Most common nerves which can be involved are common and superficial peroneal and the saphenous. Trauma is the most common cause of entrapment however CPN can be affected by activities that involve inversion and eversion	<ul style="list-style-type: none"> - Pain brought about by activity and made worse with continued activity - Pain in the distribution of the nerve - Patients describe parasthesia / burning - +ve tinels 	<ul style="list-style-type: none"> - EMG / nerve conduction studies - Xrays normal - Nerve block - Modification of activity - Address precipitating factors - Release of the nerve in more persistent cases
Popliteal artery entrapment syndrome	Due to anatomical variation most commonly the migration of the medial head of gastrocnemius and its attachments in relation to the popliteal artery	<ul style="list-style-type: none"> - Pain and claudication in the calf with exercise - Cramp - Pain usually posterior and occurs after strenuous or vigorous exercise - Tenderness in the muscle belly post exercise - Pulses should be tested with the artery under tension otherwise they will be normal 	<ul style="list-style-type: none"> - Arteriography to confirm diagnosis - Surgery to decompress the artery

Appendix 3 - Treatment plan

Treatment may be on a one-to-one basis or as part of a group. The programme will be individually devised for each patient, taking into account the assessment findings, but need to include the following

1. Period of rest or modified exercise to maintain cardiovascular function.
2. Discussions around training.
3. Ice and NSAIDS.
4. Electrotherapy as appropriate.
5. Biomechanical abnormalities associated with medial loading to be corrected.
6. Taping to be used as appropriate.
7. Gradual return to training.