<table>
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<tr>
<th>Document Type</th>
<th>Guideline</th>
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<tr>
<td>Date Approved</td>
<td>13/11/2017</td>
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<tr>
<td>Ratifying Body</td>
<td>Drugs &amp; Therapeutics Committee</td>
</tr>
<tr>
<td>Related Documents</td>
<td>Physiotherapy rehabilitation guidelines – Lateral ligament reconstruction of the ankle</td>
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<tr>
<td>Author</td>
<td>Joanna Benfield, Foot &amp; Ankle Specialist Physiotherapist, RNOH</td>
</tr>
<tr>
<td>Owner (Executive Director)</td>
<td>Lucy Davies</td>
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<tr>
<td>Directorate</td>
<td>Operations</td>
</tr>
<tr>
<td>Superseded Documents</td>
<td>Rehab Guidelines for Tib Post Reconstruction (2014)</td>
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<td>Subject</td>
<td>Clinical, Clinical Units, Communication, Inpatient &amp; Outpatient Services</td>
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<td>Rehabilitation, foot and ankle surgery, tib post, tibialis posterior, tibialis posterior dysfunction, tibialis posterior reconstruction, adult acquired flatfoot, flexor digitorum longus transfer, cobb procedure, physiotherapy, complications, outcomes, milestones, function, treatment, exercise, pain relief, restrictions, limitations, sport, fitness, postural awareness, pain education, mobility, goals, precautions, compliance, ankle pain, leg pain, foot pain.</td>
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<tr>
<td>Consultation Group/Approving Bodies/Subject Matter Expert</td>
<td>Members of Foot and Ankle Unit Team (4 consultants, &amp; Clinical Nurse Specialist)Members of Outpatient Musculoskeletal Physiotherapy Team (Band 5, 6, 7 and 8a staff members at Stanmore and Bolsover Street)Members of Inpatient Orthopaedic Physiotherapy Team (Band 7 and 8a staff members)</td>
</tr>
<tr>
<td>Readership</td>
<td>All staff (inc. Clinical)</td>
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1. Equality Impact Assessment (EIA) Disclosure Statement

<table>
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<tr>
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<tr>
<td>This policy was assessed on the 9th day of March 2017 for its impact on equality. The assessment determined that the policy will not have a significant negative impact on equality in relation to each of the protected staff/patient groups below:</td>
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<tr>
<td>i.) Age; ii.) Sex (Male and Female); iii.) Disability (Learning Difficulties/Physical or Sensory Disability); iv.) Race or Ethnicity; v.) Religion and Belief; vi) Sexual Orientation (gay, lesbian or heterosexual); vii) Pregnancy and Maternity; vii) Gender Reassignment (The process of transitioning from one gender to another); viii) Marriage and Civil Partnership.</td>
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2. Privacy Impact Assessment (PIA) Disclosure Statement

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<tr>
<td>This policy was assessed on the 9th day of March 2017 for its impact on privacy. The assessment determined that the policy will not have a significant negative impact on privacy of members of staff/patients.</td>
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</table>
3. **Introduction and aims**

Please note that this is advisory information only. Individual / your experiences may differ from those described. All exercises must be demonstrated to a patient by a fully qualified physiotherapist. We cannot be held liable for the outcome of you undertaking any of the exercises / interventions shown here independently of direct supervision from the RNOH.

As a specialist orthopaedic hospital we recognise that our broad and often complex patient group needs an individualised rehabilitation approach. Our emphasis is on patient-specific rehabilitation, which encourages recognition of those patients who may progress slower than others. These rehabilitation guidelines are therefore ‘milestone driven’ and designed to provide an equitable rehabilitation service to all our patients. They will also limit unnecessary visits to the outpatient clinic at RNOHT by helping the patient and therapist to identify when specialist review is required.

4. **Definitions**

See section 6.

5. **Duties and Responsibilities**

Not applicable for this guideline.
6. Body of Policy

**Team Contact Details:**
Foot & Ankle Unit Consultants: Mr Singh, Mr Cullen, Mr Goldberg & Mr Welck

**Foot and Ankle Unit:**
- Tel: 0208 909 5125
- E-mail: footandankle@rnoh.nhs.uk
(Please note that if e-mailing from an e-mail address external to RNOH that this e-mail address is not secure so please do not include patient identifiable data)

**Physiotherapy Department:**
- Tel: 0208 909 5820
Indications for surgery:

- Generally for Stage II Tibialis Posterior Tendon Dysfunction (Occasionally for Type I or Type III)

Possible complications:

- Infection
- Bleeding
- Nerve damage
- Deep Vein Thrombosis
- Pulmonary Embolism
- Scarring
- Non-union
- Transfer failure
- Flat foot remains / recurs
- Persistent / Recurrent pain
- Subsequent fusion if failure

Surgical techniques

The technique(s) used will depend on the stage of the tibialis posterior tendon dysfunction, and the clinical presentation of the patient.

Surgery tends to include one or more of the following:

- Tendon reconstruction with Flexor Digitorum Longus (FDL) transfer, Flexor Hallucis Longus (FHL) transfer or Tibialis Anterior transfer (Cobb procedure)
- Calcaneal osteotomy
- Tendo-Achilles lengthening
- Spring ligament (Plantar calcaneonavicular ligament) repair
- Lateral column lengthening (eg, calcaneocuboid distraction)

Expected outcome:

- Improved function / mobility
- Improved pain relief, with decreased analgesic requirements
- Improved arch height and alignment
- Stop the progression of the deformity
- To be able to do single heel raise
- Muscle strength: inversion grade 4 or 5 on Oxford scale
- Return to low impact sports may be possible but strenuous sport unlikely
- Full recovery may take up to twelve months
**Pre-operatively**

The patient will be seen pre-operatively where able and with consent, the following will be assessed or discussed:

- Current functional levels
- General Health
- Social history and home set up
- Ability to mobilise, plus the provision of appropriate walking aids to be used post operatively
- Post-operative expectations
- Post-operative management explained, including the provision of bed exercises.

**Post-operatively**

Always check the operation notes, and the post-operative instructions. Discuss any deviation from routine guidelines with the team concerned. This is very important as the patient may have had a combination of techniques which may affect weight-bearing status and progressions.
INITIAL REHABILITATION PHASE: 0-6 Weeks

Goals:
- To be safely and independently mobile with appropriate walking aid, adhering to weight bearing status
- To be independent with home exercise programme as appropriate
- To understand self-management / monitoring, e.g. skin sensation, colour, swelling, temperature, circulation, elevation

Restrictions:
- Ensure that weight bearing restrictions are adhered to:
  - Non-Weight Bearing (NWB) in Plaster Of Paris (POP) for 6 weeks, initially with ankle in neutral and maximal inversion. Change of cast every 2 weeks to bring foot towards neutral
  - Out of POP and into Aircast boot at 6 weeks Full Weight Bearing (FWB)
  - If is a patient of Mr Goldberg, will also have insole / arch support
- Elevation
- If sedentary employment, may be able to return to work from 4 weeks post-operatively, as long as provisions to elevate leg, and no complications

Treatment:
- Likely to be in POP
- Pain-relief: Ensure adequate analgesia
- Elevation
- Exercises: teach circulatory exercises
- Education: teach how to monitor sensation, colour, circulation, temperature, swelling, and advise what to do if concerned
- Mobility: ensure patient independent with transfers and mobility, including stairs if necessary

On discharge from ward:
- Independent and safe mobilising, including stairs if appropriate
- Independent and safe with transfers
- Independent and safe with home exercise programme / monitoring

Milestones to progress to next phase:
- Out of POP. Team to refer to physiotherapy when appropriate (normally at 6 weeks post-operatively)
- Progression from NWB to FWB phase. Team to refer to physiotherapy if required to review safety of mobility / use of walking aids
- Adequate analgesia
RECOVERY REHABILITATION PHASE: 6weeks- 12 weeks

Goals:
- To be independently mobile out of Aircast boot
- To achieve full range of movement
- Tendon transfer to be activating
- To optimise normal movement

Restrictions:
- Ensure adherence to weight bearing status as appropriate
- Ensure adherence to use of Aircast Boot as advised by team and do not wean from this until advised to do so
- No strengthening of transfer against resistance until at least 3 months post-operatively
- Do not stretch transfer. It will naturally lengthen over a 6 month period

Treatment:
- Pain relief
- Advice / Education
- Posture advice / education
- Mobility: ensure safely and independently mobile adhering to appropriate weight bearing restrictions. Progress off walking aids as able once reaches FWB stage.
- Gait Re-education
- Wean out of Aircast boot once advised to do so and into normal footwear.
- Exercises:
  - Passive range of movement (PROM)
  - Active assisted range of movement (AAROM)
  - Active range of movement (AROM)
  - Encourage isolation of transfer activation without overuse of other muscles. Biofeedback likely to be useful.
  - Strengthening exercises of other muscle groups as appropriate
  - Core stability work
  - Balance / proprioception work once appropriate
  - Stretches of tight structures as appropriate (e.g. Achilles Tendon), not of transfer.
  - Review lower limb biomechanics and kinetic chain. Address issues as appropriate.
- Swelling Management
- Manual Therapy:
  - Soft tissue techniques as appropriate
  - Joint mobilisations as appropriate ensuring awareness of those which may be fused and therefore not appropriate to mobilise
- Monitor sensation, swelling, colour, temperature, etc
- Orthotics if required via surgical team
- Hydrotherapy if appropriate
- Pacing advice as appropriate
Milestones to progress to next phase:
- Tendon transfer activating
- Full range of movement
- Mobilising out of Aircast boot
- Neutral foot position when weight bearing / mobilising

Failure to meet milestones:
- Refer back to team / Discuss with team
- Continue with outpatient physiotherapy if still progressing
INTERMEDIATE REHABILITATION PHASE: 12 weeks – 6 months

**Goals:**
- Independently mobile unaided
- Optimise normal movement

**Treatment:**
Further progression of the above treatment:
- **Pain relief**
- **Advice / Education**
- **Posture advice / education**
- **Mobility:** Progression of mobility and function
- **Gait Re-education**
- **Exercises:**
  - Range of movement
  - Progress isolation of transfer activation without overuse of other muscles. **Biofeedback** likely to be useful.
  - Strengthening exercises as appropriate
  - Core stability work
  - Balance / proprioception work
  - Stretches of tight structures as appropriate (e.g. Achilles Tendon), **not of transfer**.
  - Review lower limb biomechanics and kinetic chain. Address issues as appropriate.
- **Swelling Management**
- **Manual Therapy:**
  - Soft tissue techniques as appropriate
  - Joint mobilisations as appropriate ensuring awareness of those which may be fused and therefore not appropriate to mobilise
- **Monitor** sensation, swelling, colour, temperature, etc
- **Orthotics** if required via surgical team
- **Hydrotherapy** if appropriate
- **Pacing advice** as appropriate

**Milestones to progress to next phase:**
- Independently mobile unaided
- Transfer to be activating
- Adequate analgesia

**Failure to meet milestones:**
- Refer back to team / Discuss with team
- Continue with outpatient physiotherapy if still progressing
FINAL REHABILITATION PHASE: 6 months – 1 year

Goals:
- Return to gentle low impact sports
- Good transfer activation with grade 4 or 5 inversion strength
- To be able to do single heel raise
- Establish long term maintenance programme

Treatment:
- **Mobility / function**: Progression of mobility and function, increasing dynamic control with specific training to functional goals
- **Gait Re-education**
- **Exercises**:
  - Progression of exercises including range of movement, strengthening, transfer activation, balance and proprioception, core stability
- **Swelling Management**
- **Manual Therapy**:
  - Soft tissue techniques as appropriate
  - Joint mobilisations as appropriate ensuring awareness of those which may be fused and therefore not appropriate to mobilise
- **Pacing advice**

Milestones for discharge:
- Independently mobile unaided
- Transfer to be activating with grade 4 or 5 inversion strength
- Able to do single heel raise
# FAILURE TO PROGRESS

If a patient is failing to progress, then consider the following:

<table>
<thead>
<tr>
<th>POSSIBLE PROBLEM</th>
<th>ACTION</th>
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<tbody>
<tr>
<td>Swelling</td>
<td>Ensure elevating leg regularly</td>
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<td></td>
<td>Use ice as appropriate if normal skin sensation and no contraindications</td>
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<td>Decrease amount of time on feet</td>
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<td>Pacing</td>
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<td></td>
<td>Use walking aids</td>
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<td>Circulatory exercises</td>
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<td>If decreases overnight, monitor closely</td>
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<td></td>
<td>If does not decrease overnight, refer back to surgical team or to GP</td>
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<tr>
<td>Pain</td>
<td>Decrease activity</td>
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<tr>
<td></td>
<td>Ensure adequate analgesia</td>
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<td></td>
<td>Elevate regularly</td>
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<td></td>
<td>Decrease weight bearing and use walking aids as appropriate</td>
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<td></td>
<td>Pacing</td>
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<td>Modify exercise programme as appropriate</td>
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<td>If persists, refer back to surgical team or to GP</td>
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<td>Breakdown of wound e.g. inflammation, bleeding, infection</td>
<td>Refer to surgical team or to GP</td>
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<tr>
<td>Transfer not activating</td>
<td>Start working in NWB gravity eliminated position with AAROM and then</td>
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<td></td>
<td>build up as able</td>
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<td></td>
<td>Biofeedback</td>
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<td></td>
<td>Ensure adequate analgesia as appropriate</td>
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<td></td>
<td>Ensure swelling under control as appropriate</td>
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<td></td>
<td>Ensure foot neutral when mobilising to avoid excessive shear. Consider</td>
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<td></td>
<td>orthotics referral via surgical team if unable to keep neutral</td>
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<td></td>
<td>Refer back to surgical team if no improvement</td>
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<tr>
<td>Numbness/ altered sensation</td>
<td>Review immediate post-operative status if possible</td>
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<td></td>
<td>Ensure swelling under control</td>
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<td>If new onset or increasing refer back to surgical team or GP</td>
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<td></td>
<td>If static, monitor closely, but inform surgical team and refer back if</td>
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<td></td>
<td>deteriorates or if concerned</td>
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</tbody>
</table>
7. Monitoring and the effectiveness of this policy

This guideline will be reviewed 5 yearly.
Appendix 1:  Glossary of Terms

Not applicable.
Appendix 2: Other linked trust policies and guidelines

Physiotherapy rehabilitation guidelines – Lateral ligament reconstruction of the ankle
Physiotherapy rehabilitation guidelines – Anterior ankle arthroscopy
Physiotherapy rehabilitation guidelines – Total Ankle Replacement
Physiotherapy rehabilitation guidelines – Subtalar and hindfoot fusion
Physiotherapy rehabilitation guidelines – Hallux valgus deformity - Scarf Osteotomy
Physiotherapy rehabilitation guidelines – Pes Cavus correction
Physiotherapy rehabilitation guidelines – ACI of the ankle

All other RNOH Physiotherapy Rehabilitation Orthopaedic Post-operative Guidelines (Knee, Sarcoma Unit, Peripheral Nerve Injuries, Shoulder & Upper Limb, Spinal Surgery Unit)
Appendix 3: Extra sources of information and support

Summary of evidence for physiotherapy guidelines

A comprehensive literature search was carried out to identify research relating to surgery for tibialis posterior tendon dysfunction and subsequent rehabilitation. After reviewing the articles and information, the physiotherapy guidelines were produced on the best available evidence.


This policy is available on request in large print and alternative languages. It is a manager’s responsibility to ensure employees are aware of these options.

* The following policies must be sent for review to the Local Counter Fraud Specialist:

- Fraud and Bribery
- Standard Financial Instructions
- Declaration of Interests
- Gifts and Hospitality
- Whistleblowing
- Disciplinary
- IT
- Anti-Money Laundering
- Managing Sickness Absence
- Secondary Employment
- Expenses
- Overpayment
- Financial Redress
- TOIL (Time off in Lieu)
- Code of Conduct/Standards of Business Conduct
- Data Protection
- Lone Worker
- Patient Transport
- Commercial Sponsorship
- Overseas Visitors
- Disclosure