**Keywords and Phrases**

Rehabilitation, foot and ankle surgery, 1st MTPJ, hallux valgus, hallux valgus deformity, scarf osteotomy, chevron osteotomy, bunion, 1st metatarsal, 1st metatarsophalangeal joint, physiotherapy, complications, outcomes, milestones, function, treatment, exercise, pain relief, restrictions, sport, fitness, postural awareness, pain education, mobility, goals, precautions, compliance, ankle pain, leg pain, foot pain.

**Consultation Group/Approving Bodies/Subject Matter Expert**

Members of Foot and Ankle Unit Team (4 consultants, & 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)

**Readership**

All staff (inc. Clinical)
1. Equality Impact Assessment (EIA) Disclosure Statement

Equality Impact Assessment (EIA) Disclosure Statement

This policy was assessed on the 1st day of June 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:

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.
1. Privacy Impact Assessment (PIA) Disclosure Statement

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<thead>
<tr>
<th>Privacy Impact Assessment (PIA) Disclosure Statement</th>
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<tr>
<td>This policy was assessed on the 1st day of June 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>
2. 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.

3. Definitions

See section 6.

4. Duties and Responsibilities

Not applicable for this guideline.
5. 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:**
Moderate to severe hallux valgus deformity impacting on function.

**Possible complications:**
- Infection
- Persistent Swelling
- Bleeding
- Deep Vein Thrombosis
- Pulmonary Embolism
- Stiffness 1st Metatarsophalangeal Joint (MTPJ)
- Scarring
- Persistent / Recurrent pain
- Non-union and / or avascular necrosis
- Nerve damage (includes pins and needles / numbness / traumatic neuroma)

**Surgical techniques**
**Scarf Osteotomy:**
A medial incision over the 1st MTPJ is the most common. The 1st metatarsal is divided up into a Z-shape fashion. The 1st metatarsal head is shifted laterally back onto the sesamoids which also corrects the deformity. The bones are then held with screws. A Chevron osteotomy is used for milder deformities.

**Expected outcome:**
- Deformity correction
- Improved function of the Hallux
- Improved pain relief, with decreased analgesic requirements

**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 and footwear – i.e. Heel wedge shoe.
- 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:
  - Full Weight Bearing (FWB) in Heel Wedge shoe for 6 weeks until progressed following an x-ray in clinic
- 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:
Please note: The patient will be seen in clinic at 2 weeks post-operatively, and will be progressed to the exercises / ice / massage as appropriate as specified below.
- **Mobility**: ensure patient independent with transfers and mobility with appropriate walking aid wearing heel wedge shoe, including stairs if necessary.
- **Education**: teach how to monitor sensation, colour, circulation, temperature, swelling, and advise what to do if concerned
- **Elevation**
- **Pain relief**:
  - Weeks 0-2:
    - Ensure adequate analgesia.
  - Weeks 2-6:
    - Ensure adequate analgesia.
    - Ice as required and as appropriate from week 2 as long as normal sensation and no contraindications and only if no wire used in surgery
- **Exercises**:
  - Weeks 0-2:
    - Circulatory exercises
  - Weeks 2-6:
    - Circulatory exercises
    - Passive range of movement exercises 1st MTPJ (suggest 4x5minutes a day) Ensure patient understands the difference between motion at MTPJ and Interphalangeal Joint (IPJ)
    - Ruck up towel with toes (suggest start with once a day)
    - Roll foot on cool can or plastic bottle of soft drink as appropriate
- **Soft Tissue Techniques**
- Weeks 2-6: massage with E45 cream as appropriate and as long as no contraindications

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

Milestones to progress to next phase:
- Independently mobile with appropriate aid as required
- Managing swelling
- Wound healing well
- Adequate analgesia
- Team to refer to outpatient physiotherapy if MTPJ range severely restricted.
RECOVERY REHABILITATION PHASE: 6 weeks - 12 weeks

Goals:
- To be returning to normal footwear – wearing trainers comfortably, 1 size bigger if necessary
- To aim for full range of movement 1st MTPJ
- Optmise normal movement
- Independently mobilising comfortably with walking aid as appropriate

Restrictions:
Progression from heel wedge shoe is dependent upon the bone healing of the individual patient. The surgical team will advise when to progress this. As a guide, an x-ray will be taken in clinic at 6 weeks and once the team are happy with this they will advise to progress from heel wedge shoe.

- Out of heel wedge shoe from 6 weeks once team have advised this is ok, and wean into trainers
- Darco toe alignment splint if necessary from 6 weeks
- No sport until 3-4 months post-operatively
- In some cases, in close liaison with the consultant, the 1st MTPJ can now be loaded in dorsiflexion

Treatment:
- Pain relief
- Advice / Education
- Posture advice / education
- Wean into normal footwear
- Mobility: progress mobility and wean from walking aids as able and appropriate
- Gait Re-education
- Exercises:
  - Range of movement (ROM) exercises of the hallux (Passive / Active Assisted / Active (PROM / AAROM / AROM) as appropriate)
  - Range of movement exercises as appropriate of rest of foot, ankle and kinetic chain
  - Strengthening exercises of the foot and ankle as appropriate, and throughout lower limb as necessary
  - Exercises to teach patient to find and encourage appropriate foot and ankle positioning in weight bearing
  - Review lower limb and kinetic chain. Address issues as appropriate
  - Core stability exercises as appropriate
  - Balance / proprioception work once appropriate
  - Stretches of tight structures as appropriate (e.g. Achilles tendon)
- Swelling Management
• **Manual Therapy:**
  - Soft tissue techniques as appropriate
  - Joint mobilisations as appropriate, particularly 1st MTPJ and midfoot.

• **Monitor** sensation, colour, circulation, temperature, swelling

• **Orthotics** if required via surgical team

• **Hydrotherapy** if appropriate

• **Pacing advice** as appropriate

**Milestones to progress to next phase:**

- Full range of movement 1st MTPJ
- Independently mobilising comfortably in normal footwear +/- walking aid as appropriate
- Tolerating weight bearing through hallux in standing and in gait
- Improving toe-off

**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 in normal footwear
- Optimise normal movement
- Return to normal activities
- Return to low impact / no impact sports if set as specific patient functional goal

Restrictions:
- No sport until 3-4 months post-operatively

Treatment:
Further progression of the above treatment:
- Pain relief
- Advice / Education
- Posture advice / education
- Mobility progression
- Gait Re-education
- Exercises:
  - Active and passive range of movement toes, foot, ankle and lower limb as appropriate
  - Strengthening exercises of toes, foot, ankle and lower limb as appropriate
  - Promoting independence with self-mobilisations 1st MTPJ
  - Balance / proprioception work i.e.; use of wobble boards, trampoline, gym ball, Dyna-cushion.
  - Stretches of tight structures as appropriate (e.g. Achilles Tendon)
  - Review kinetic chain and lower limb. Address issues as appropriate.
  - Core stability exercises as appropriate
  - Sports specific rehabilitation
- Manual Therapy:
  - Soft tissue techniques as appropriate
  - Joint mobilisations as appropriate
- Orthotics if required via surgical team
- Hydrotherapy if appropriate
- Pacing advice as appropriate

Milestones for discharge:
- Independently mobile unaided in normal footwear
- Returned to full function and appropriate patient-specific functional goals achieved
- Returned to low / no impact sport if set as patient specific functional goal
Failure to meet milestones:

- Refer back to team / Discuss with team
- Continue with outpatient physiotherapy if still progressing
**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>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>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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<td></td>
<td>Ensure adequate analgesia</td>
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<td>Elevate regularly</td>
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<td>Decrease weight bearing and use walking aids as appropriate</td>
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<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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<td>Numbness/ altered sensation</td>
<td>Review immediate post-operative status if possible</td>
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<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>If static, monitor closely, but inform surgical team and refer back if deterioration or if concerned</td>
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6. 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 – Pes cavus correction
Physiotherapy rehabilitation guidelines – Anterior ankle arthroscopy
Physiotherapy rehabilitation guidelines – Total Ankle Replacement
Physiotherapy rehabilitation guidelines – Lateral Ligament Reconstruction of the Ankle
Physiotherapy rehabilitation guidelines – Subtalar and hindfoot fusion
Physiotherapy rehabilitation guidelines – Tibialis Posterior Reconstruction
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 scarf osteotomy 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