

# Guidelines for Physiotherapy Rehabilitation



## Proximal Tibial Replacement

### Proximal Tibial Replacement

During a Proximal Tibial Replacement the proximal third of the tibia is removed and replaced by a rotating hinged knee replacement. The patella tendon is attached to the original level of the tibial tuberosity to the prosthesis and or soft tissue. Some may well have a medial gastrocnemius flap to cover the prosthesis. Please check operation notes or with surgeon. The surgery is performed for bone tumours of the proximal tibia and muscles affected are quadriceps, gastrocnemius and hamstrings.

### Complications Early

- Infection
- Wound healing
- Nerve damage/Neuropathy
- Patella dislocation, poor patella tracking or patella tendon detachment
- DVT/PE
- If extensive soft tissue excision, there may be severely reduced muscle control and power

### Late

- Recurrence of tumour
- Aseptic loosening

### Patient education/Expected Outcome

- Should be able to achieve good function, but it may take up to 12 months before optimal function has been achieved.
- ROM at the knee can reach 0-120, but with a 5-10 quadriceps lag.
- Aim to achieve independent mobility with no aids Restrictions
- No active knee flexion for 6 weeks post op
- No active knee extension for 6 weeks post op
- The wound needs to be completely healed before any active exercises
- No contact sports or high impact activity
- A knee splint needs to be worn when the patient is up and out of bed, for approximately 6-8 weeks

### Phase of Rehabilitation

#### Phase 1 / 0-6 weeks / Goals

- Adequate analgesia
- Maximise tissue healing
- Transfer and mobilise independently with walking aids
- If appropriate, be able to negotiate stairs safely

### Physiotherapy rehabilitation programme

- Circulatory exercises
  - Isometric exercises
  - Ankle ROM exercises, especially if a medial gastrocnemius flap has been used
  - Gait re-education with appropriate walking aids and knee splint.
- Check operation notes for weight bearing status



### Physiotherapy rehabilitation programme

- Stairs practice as appropriate
- Encourage independence with ADL and exercises
- Patient education
- After 2 weeks the patient will be reviewed in Tumour Units clinic
- If appropriate, after 6 weeks the patient may be admitted for inpatient physiotherapy. However, if the patient is receiving cytotoxic chemotherapy, this may then have to be postponed. Please see separate physiotherapy inpatient rehabilitation guidelines.

### Phase 2 / 6-12 weeks / Goals

- If the wound has healed, start knee ROM
- Prevent joint stiffness
- Improve muscular strength/endurance and control
- Encourage terminal extension when weight bearing, and wean off walking aids and knee splint as appropriate. Can start driving if good quadriceps control, but patients need also to check with their insurance company, and need to be able to do an emergency break if right leg.

### Physiotherapy rehabilitation programme

- Knee range of Motion exercises: Initially set brace to allow for 50 degrees flexion and then increase as comfort and muscle control allows. Start with CKC exercises and progress to OKC as comfort allows.
- Active muscle strengthening exercises
- Gait re-education: Continue to use knee brace until able to control terminal extension when weight bearing. Wean off walking aids as appropriate.
- Proprioception exercises, wobble boards, sit fit etc
- Muscle balance exercises as appropriate
- Home exercise programme
- Inpatient physiotherapy rehabilitation, as discussed with surgeon. This will involve exercises in the hydrotherapy pool and in the physiotherapy department gym.

### Phase 3 / 12 / Goal

Prepare physical and psychological ability to return to optimal function  
Physiotherapy rehabilitation programme

- Optimise patients' functional independence
- Continue with same physiotherapy programme as phase 2 as appropriate
- Home exercise programme
- Admit for inpatient physiotherapy rehabilitation if appropriate.

*This is a guideline only. Each case should be assessed individually and the guideline may be altered where necessary.*

### Bibliography

METS Modular Proximal Tibia Implant system. [www.stanmoreimplants.com](http://www.stanmoreimplants.com)  
McGinty et al. Clinical Biomechanics 15 (2000) 160-166.  
Biomechanical considerations for rehabilitations of the knee.  
Martin Malawer and Paul Sugarbaker. Musculoskeletal Cancer Surgery.  
Treatment of Sarcoma and Allied Diseases.

## If you require a special edition of this leaflet

This leaflet is available in large print. Arrangements can also be made on request for it to be explained in your preferred language. Please contact the Patient Advice and Liaison Service (PALS) email: [pals@rjah.nhs.uk](mailto:pals@rjah.nhs.uk)

Date of publication: May 2013

Date of review: May 2015

© RJAH Trust 2013



### Hospital Stop Smoking Service

For advice and information on quitting smoking, or for an informal chat, please contact the Hospital Stop Smoking Sister on:

**01691 404114**

### Further Information

Please contact the tumour unit with any questions or if you are concerned on **01691 404107**.

If there is no one to take your call please leave your name and number on the answer machine.

The Robert Jones and Agnes Hunt  
Orthopaedic Hospital NHS Foundation Trust,  
Oswestry, Shropshire SY10 7AG  
Tel: 01691 404000  
[www.rjah.nhs.uk](http://www.rjah.nhs.uk)