

Optetrack™ Total Knee Arthroplasty clinical and functional results after 6 to 13 years: findings from a retrospective study.

## Appendix 1. Medical and Rehabilitation Protocol in accordance with [10,15,33].

<b>Medical Protocol for TKA surgery</b>											
<b>Autologous Transfusion</b>	<b>Antibiotic prophylaxis</b>										
No	Teicoplanin 400 mg + Ciprofloxacin 200 mg 1 hour before surgery for 48 hours.										
Yes	Cefuroxime: 2g 1 hour before surgery and 1g after; 2nd day 2g x 3.										
<b>DVT Prevention</b>	<b>Surgery</b>										
Low molecular weight heparin (LMWH) from the evening before surgery until the 35th day.	Tourniquet.										
Elastic compression socks for 2 months.	Post-operative blood recovery.										
<b>Rehabilitation Protocol after TKA Surgery</b>											
<b>Week 1 program: Partial ROM recovery and 3-phase gait</b>											
Day 1	Continuous passive movement (CPM) up to 60 ° for 45 minutes for 2 sessions.										
Day 2	CPM up to 90 ° for 45 minutes for 2 sessions. Muscle stretching for extension and flexion improvement.										
Day 3-7	CPM up to 90 ° for 45 minutes for 2 sessions. 3-phase gait with 2 crutches, postural correction, stretching for knee flexion and extension improvement.										
<b>Expected results</b>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"><b>Ok if:</b></td> <td style="width: 50%;"><b>It's bad if:</b></td> </tr> <tr> <td>Maximum lack of extension: 10°</td> <td>Lack of extension: 20°</td> </tr> <tr> <td>Minimum flexion: 70°</td> <td>Flexion &lt;50°</td> </tr> <tr> <td>3-phase gait, no effusion or pain</td> <td>Effusion or pain</td> </tr> <tr> <td><b>Proceed to Week 2 program</b></td> <td><b>Repeat Week 1 program</b></td> </tr> </table>	<b>Ok if:</b>	<b>It's bad if:</b>	Maximum lack of extension: 10°	Lack of extension: 20°	Minimum flexion: 70°	Flexion <50°	3-phase gait, no effusion or pain	Effusion or pain	<b>Proceed to Week 2 program</b>	<b>Repeat Week 1 program</b>
<b>Ok if:</b>	<b>It's bad if:</b>										
Maximum lack of extension: 10°	Lack of extension: 20°										
Minimum flexion: 70°	Flexion <50°										
3-phase gait, no effusion or pain	Effusion or pain										
<b>Proceed to Week 2 program</b>	<b>Repeat Week 1 program</b>										
<b>Week 2 program: ROM improvement, crossed gait, muscle strengthening</b>											
Day 8-15	CPM without angular limits, end-range stretching for knee flexion and extension improvement, exercise bike, low-load muscle strengthening, postural correction, crossed gait training with 2 crutches.										
<b>Expected results</b>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"><b>It's ok if:</b></td> <td style="width: 50%;"><b>It's bad if:</b></td> </tr> <tr> <td>Maximum lack of extension: 5°</td> <td>Lack of extension: 10°</td> </tr> <tr> <td>Minimum flexion: 90°</td> <td>Flexion: &lt;70°</td> </tr> <tr> <td>Correct crossed gait, correct postural alignment.</td> <td>Effusion or pain.</td> </tr> <tr> <td><b>Proceed to home exercise program</b></td> <td><b>Proceed to Week 3 program</b></td> </tr> </table>	<b>It's ok if:</b>	<b>It's bad if:</b>	Maximum lack of extension: 5°	Lack of extension: 10°	Minimum flexion: 90°	Flexion: <70°	Correct crossed gait, correct postural alignment.	Effusion or pain.	<b>Proceed to home exercise program</b>	<b>Proceed to Week 3 program</b>
<b>It's ok if:</b>	<b>It's bad if:</b>										
Maximum lack of extension: 5°	Lack of extension: 10°										
Minimum flexion: 90°	Flexion: <70°										
Correct crossed gait, correct postural alignment.	Effusion or pain.										
<b>Proceed to home exercise program</b>	<b>Proceed to Week 3 program</b>										
<b>Home exercise program</b>	Crossed gait with 2 crutches for 30 days. Crossed gait training with 2 sticks for 15 days. Muscle strengthening. Complete ROM recovery with exercise bike and swim.										
<b>Week 3 program: ROM improvement</b>											
Day 15-21	CPM up to maximum tolerance. Stretching for knee flexion and extension improvement. Mobilization with joint traction.										
<b>Expected results</b>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"><b>It's ok if:</b></td> <td style="width: 50%;"><b>It's bad if:</b></td> </tr> <tr> <td>Maximum lack of extension: 5°</td> <td>Lack of extension: &gt;5°</td> </tr> <tr> <td>Minimum flexion: 90°</td> <td>Flexion: &lt;90°</td> </tr> <tr> <td><b>Proceed to Week 4 program</b></td> <td><b>Repeat Week 3 program</b></td> </tr> </table>	<b>It's ok if:</b>	<b>It's bad if:</b>	Maximum lack of extension: 5°	Lack of extension: >5°	Minimum flexion: 90°	Flexion: <90°	<b>Proceed to Week 4 program</b>	<b>Repeat Week 3 program</b>		
<b>It's ok if:</b>	<b>It's bad if:</b>										
Maximum lack of extension: 5°	Lack of extension: >5°										
Minimum flexion: 90°	Flexion: <90°										
<b>Proceed to Week 4 program</b>	<b>Repeat Week 3 program</b>										

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**Week 4 program: ROM improvement, crossed gait, muscle strengthening**

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Day 21-28 CPM without angular limits, end-range stretching for knee flexion and extension improvement, exercise bike, low-load muscle strengthening, postural correction, crossed gait training with 2 crutches.

**Expected results****It's ok if:**

Maximum lack of extension:  $<5^{\circ}$

Minimum flexion:  $>90^{\circ}$

Correct crossed gait, correct postural alignment.

**Proceed to home exercise program****Home exercise**

Crossed gait training with 2 sticks for 15 days.

**program**

Muscle strengthening.

Complete ROM recovery with exercise bike and swim.

**It's bad if:**

Lack of extension:  $>5^{\circ}$

Flexion:  $<90^{\circ}$

**Referral to orthopaedic surgeon**

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**General procedures****If...****... then:**

Starting from week 1

Moderate pain and effusion

Basic analgesics and cryotherapy

Severe pain

Strong analgesics + electroanalgesia

Starting from week 2

Severe effusion

Lymphatic drainage

Severe muscle hypotrophy

Electrostimulation

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