

# Comparison of clinical results of anteromedial and transtibial femoral tunnel drilling techniques in knee reconstruction surgery

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|----------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Submission date</b><br>31/12/2019   | <b>Recruitment status</b><br>No longer recruiting     | <input type="checkbox"/> Prospectively registered<br><input type="checkbox"/> Protocol            |
| <b>Registration date</b><br>09/01/2020 | <b>Overall study status</b><br>Completed              | <input type="checkbox"/> Statistical analysis plan<br><input checked="" type="checkbox"/> Results |
| <b>Last Edited</b><br>05/06/2020       | <b>Condition category</b><br>Musculoskeletal Diseases | <input type="checkbox"/> Individual participant data                                              |

## Plain English summary of protocol

### Background and study aims

Anterior cruciate ligament (ACL) reconstruction is a type of knee surgery to replace the ACL – one of the main ligaments in the knee. The ACL connects the thigh bone to the shin bone, and along with other ligaments in the knee, keeps the knee stable. A number of methods can be used to reconstruct an anterior cruciate ligament (ACL). The most common method is to use a tendon from elsewhere in the body to replace the ACL. The surgeon needs to drill a tunnel in the bone to pass the new tissue through.

The aim of this study is to compare two different drilling techniques in terms of the long term outcome on knee function.

### Who can participate?

Patients who underwent knee reconstructive surgery at Orton Hospital in Helsinki Finland between May 1990 and December 2011

### What does the study involve?

Retrospective data is gathered from patient records regarding the clinical outcomes of two different surgical techniques for knee reconstruction (anteromedial drilling and transtibial drilling).

### What are the possible benefits and risks of participating?

None

### Where is the study run from?

Hospital Orton, Invalid Foundation, Helsinki, Finland.

### When is the study starting and how long is it expected to run for?

January 2006 to December 2013

### Who is funding the study?

Orton research-grants by the Ministry of Social Affairs and Health, Finland.

Who is the main contact?

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## Contact information

### Type(s)

Scientific

### Contact name

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## Additional identifiers

### Protocol serial number

9750/44

## Study information

### Scientific Title

A retrospective comparison of clinical results of anteromedial and transtibial femoral tunnel drilling in ACL reconstruction

### Study objectives

Is there a clinical difference in results between anteromedial and transtibial femoral drilling in the reconstruction of anterior cruciate ligament?

### Ethics approval required

Old ethics approval format

### Ethics approval(s)

Approved 11/11/2015, The Hospital District of Helsinki and Uusimaa Operative Ethics Committee (Tynnyrintekijänpäätös 1 C, Helsinki, Finland; +358 (0)50 428 7838; keskuskirjaamo@hus.fi), ref: 364/13/03/02/2015. TMK02 §219

### Primary study design

Observational

## **Study design**

Retrospective case control study

## **Study type(s)**

Treatment

## **Health condition(s) or problem(s) studied**

Anterior cruciate ligament rupture

## **Interventions**

Is there a clinical difference between anteromedial and transtibial tunnel drilling results in anterior cruciate ligament reconstruction at two year follow up. For this study we chose retrospectively 300 consecutive patients admitted to Orton Hospital, Helsinki Finland. They had been divided into two groups of 150 patients. The evaluation methods were clinical examination, knee scores (Lysholm, Tegner, IKDC) and instrumented laxity measurements (KT-2000™).

ACL ruptures were treated with an operation. 150 patients with anteromedial (AM) drilling and 150 with transtibial (TT) drilling. In the AM group the reconstructions were performed using semitendinosus graft with Tape Locking Screw (TLS™) technique or Retrobutton™ femoral and BioScrew™ tibial fixation with a semitendinosus-gracilis graft. In the TT group the fixation method used was Rigidfix™ femoral and Intrafix tibial fixation.

Patients were allocated consecutively in a single-centre hospital Orton in Helsinki Finland between May 1990 and December 2011. Clinical controls were at 1 and 2 years postoperatively. This is a retrospective study.

## **Intervention Type**

Procedure/Surgery

## **Primary outcome(s)**

Recovery of knee function measured at one and two years post-operatively using:

1. Clinical examination
2. Knee scores (Lysholm, Tegner, IKDC)
3. Instrumented laxity measurements (KT-2000™)

## **Key secondary outcome(s)**

Patient satisfaction measured using interview at one and two years post-operatively

## **Completion date**

31/12/2013

# **Eligibility**

## **Key inclusion criteria**

1. Male and female gender, no data of the percentage is collected
2. No limitations, mean age of the patients was 34 years (12-64 years)
3. ACL reconstruction performed with meniscal and collateral surgery done if needed

## **Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Mixed

**Sex**

All

**Total final enrolment**

265

**Key exclusion criteria**

1. PCL reconstruction done at the same time or previously
2. Revision ACL surgery (exclusion from the final data analysis)

**Date of first enrolment**

15/05/1990

**Date of final enrolment**

31/12/2011

**Locations****Countries of recruitment**

Finland

**Study participating centre**

Hospital Orton, Invalid Foundation

Tenholantie 10

Helsinki

Finland

00280

**Sponsor information****Organisation**

Invalidisäätiö

**ROR**

<https://ror.org/020vv3w23>

**Funder(s)**

**Funder type**

Government

**Funder Name**

This work was supported by Orton research-grants by the Ministry of Social Affairs and Health, Finland.

## Results and Publications

**Individual participant data (IPD) sharing plan**

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request. Data is available from Arsi Harilainen, arsi.harilainen@orton.fi, type of data: BMDP statistics, data available at any time for 10 years. Access considered upon request. Raw data can be provided. Sharing the data with the third party has not been discussed with participants. Data is anonymised and there are no legal restrictions.

**IPD sharing plan summary**

Available on request

**Study outputs**

| Output type                     | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|---------------------------------|---------|--------------|------------|----------------|-----------------|
| <a href="#">Results article</a> | results | 03/06/2020   | 05/06/2020 | Yes            | No              |