

# Effects of progressive aquatic exercise on mobility ability and neuromuscular performance

<b>Submission date</b> 31/10/2008	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered
<b>Registration date</b> 23/01/2009	<b>Overall study status</b> Completed	<input type="checkbox"/> Protocol
<b>Last Edited</b> 16/07/2010	<b>Condition category</b> Musculoskeletal Diseases	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
		<input type="checkbox"/> Individual participant data

**Plain English summary of protocol**  
Not provided at time of registration

## Contact information

**Type(s)**  
Scientific

**Contact name**  
Dr Tapani Pöyhönen

**Contact details**  
Kymenlaakso Central Hospital  
Kotkantie 41  
Kotka  
Finland  
48210

## Additional identifiers

## Study information

**Scientific Title**  
Effects of progressive aquatic resistance training on mobility limitation and lower leg impairments after unilateral knee replacement

**Study objectives**  
Progressive aquatic resistance training improves mobility ability, muscle power and mass after knee replacement.

**Ethics approval required**

Old ethics approval format

### **Ethics approval(s)**

The Ethical Committee of the Kymenlaakso Central Hospital gave approval on the 16th February 2004

### **Study design**

Interventional randomised controlled trial

### **Primary study design**

Interventional

### **Study type(s)**

Treatment

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

Knee joint osteoarthritis

### **Interventions**

The 12 week aquatic exercise was specifically directed to improve quadriceps and hamstring muscle strength, power and muscle mass, and thus mobility. The control group did not receive any intervention. Participants were encouraged to continue their lives as usual and maintain their level of physical activity during the trial. Sessions were conducted twice a week in small classes including 4 - 5 people. Measurements were performed before and after the 12 week training period for both study groups.

### **Intervention Type**

Other

### **Phase**

Not Applicable

### **Primary outcome(s)**

Physical functional and mobility difficulties were assessed by Western Ontario and McMaster Universities osteoarthritis index (WOMAC) questionnaire, and mobility limitation by 10-metre habitual walking speed and stair ascending time. Measured 2 - 3 days before and after the 12 weeks training period both in exercise and control groups.

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

Knee extensor (KEP) and flexor power (KFP) were assessed isokinetically, and thigh muscle cross-sectional area (LCSA) by computed tomography (CT). Measured 2 - 3 days before and after the 12 weeks training period both in exercise and control groups.

### **Completion date**

31/12/2007

## **Eligibility**

### **Key inclusion criteria**

All 201 patients (women and men, aged 55 - 75 years) who, according to the physical therapy records of Kymenlaakso Central Hospital, had undergone unilateral knee replacement 4 - 18 months prior to the study were informed about the study.

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Sex**

All

**Key exclusion criteria**

1. Bilateral knee arthroplasty
2. Revision arthroplasty
3. Severe cardiovascular diseases
4. Dementia
5. Rheumatoid arthritis
6. Any major operation in either of the knees

**Date of first enrolment**

01/01/2005

**Date of final enrolment**

31/12/2007

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

Finland

**Study participating centre**

Kymenlaakso Central Hospital

Kotka

Finland

48210

**Sponsor information**

## Organisation

Kymenlaakso Central Hospital (Finland)

## ROR

<https://ror.org/05mmga691>

## Funder(s)

### Funder type

Research organisation

### Funder Name

Kymenlaakso Central Hospital (Finland) - research funding

## Results and Publications

### Individual participant data (IPD) sharing plan

### IPD sharing plan summary

Not provided at time of registration

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	results	01/06/2010		Yes	No