

# Short-term effect on pain and function of neurophysiological education and sensorimotor retraining compared to usual physiotherapy in patients with chronic or recurrent non-specific low back pain (NSLBP)

<b>Submission date</b> 29/12/2013	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered
		<input type="checkbox"/> Protocol
<b>Registration date</b> 08/01/2014	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
<b>Last Edited</b> 15/02/2016	<b>Condition category</b> Musculoskeletal Diseases	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

The effect of treatment in patients with long-term low back pain is usually minimal and it is not clear which treatment is better. In this study, we will find out about the short-term effect of a multimodal program applied in patients suffering from long-term or recurrent low back pain to decrease pain and disability.

### Who can participate?

People suffering from low back pain for at least three months can participate in this study.

### What does the study involve?

Patients are randomly allocated to receive either a multimodal treatment or the usual physiotherapy. Treatment duration is eight to twelve weeks and includes individual physiotherapy once or twice a week and 10 to 30 minutes of home training five times a week.

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

Participation in this study poses no additional risk compared with usual treatment.

### Where is the study run from?

Medbase Centre for Health Care at Saint Gallen, Switzerland.

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

Participant enrolment started in November 2012 and ended in May 2013.

### Who is funding the study?

The study is funded by the Zurich University of Applied Sciences, Switzerland.

Who is the main contact?

Mr Philipp Waelti  
phil.waelti@gmail.com

## Contact information

### Type(s)

Scientific

### Contact name

Mr Philipp Waelti

### Contact details

Haldenstrasse 15  
St.Gallen  
Switzerland  
9000

## Additional identifiers

### Protocol serial number

N/A

## Study information

### Scientific Title

Short-term effect on pain and function of neurophysiological education and sensorimotor retraining compared to usual physiotherapy in patients with chronic or recurrent non-specific low back pain (NSLBP): a randomized controlled trial

### Study objectives

This study was designed to investigate the short-term effect of a multimodal program applied on a specific subgroup of chronic NSLBP patients to decrease pain and disability.

### Ethics approval required

Old ethics approval format

### Ethics approval(s)

Ethics Committee of the Canton of St.Gallen, 31/10/2012, EKSG 12/140/1B

### Study design

Single-center randomised controlled trial

### Primary study design

Interventional

### Study type(s)

Treatment

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

Chronic non-specific low back pain

## **Interventions**

Patients will be randomly allocated to either a multimodal treatment (interventional group, n=14) or usual physiotherapy (control group, n=14). Treatment period will be 8 to 12 weeks with a frequency of once to twice a week with a maximum of 16 sessions. Subjects in both groups will have to execute a home training five times per week lasting 10 to 30 minutes. Assignments for home training will be displayed and protocolled on a web-based personalized home-training interface, for subjects to administer self-consistent.

The treatment aims at reducing pain and disability, potentially addressing abnormal cortical processing in chronic low back pain (cLBP).

Multimodal treatment includes:

1. Education about the neurophysiology of pain according to the book Explain Pain from D. Butler
2. Sensory retraining using two point discrimination and graphaesthesia training
3. Motor retraining using movement control exercises, videos of small, respectively full range lumbar movement to watch and either simultaneously perform or to visualize to do so and laterality recognition training (patients will be shown photographs of a human trunk rotated or side-bended to right or left on the computer and will have to determine the perspective of the picture as quickly as possible using the computer program Recognise®).

The home training for this group will contain all three aspects mentioned above.

Control group:

Basic patient education about adequate behaviour when having LBP including short period of protection, return to normal movement, work and leisure activities as soon as possible. Sessions will contain treatment addressing signs and symptoms. Two thirds (i.e., 20 minutes) of each session will consist of active treatment, like exercises for muscle strengthening, neuro-meningeal mobilisation and muscle stretching. A maximum of ten minutes of passive applications per session will be allowed (such as massage, manual therapy, electro therapy, mud packs). The home training for this group will contain classical exercises for strengthening, stretching and neuro-meningeal mobilisation.

## **Intervention Type**

Other

## **Phase**

Not Applicable

## **Primary outcome(s)**

Mean pain intensity of LBP on average during the last 7 days measured on a numeric rating scale (NRS) from zero to ten.

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

1. General disability, measured with the Roland and Morris Disability Questionnaire (RMDQ)
2. Patient specific disability, measured with the Patient Specific Functional Scale (PSFS)
3. Cognitive aspects concerning pain and function, measured with the Fear Avoidance Beliefs Questionnaire (FABQ) and the Pain Catastrophizing Scale (PCS)
4. Sensory acuity of the lower back, parameterized by measuring two-point discrimination across

focal point of LBP

5. Motor control impairment (MCI), measured with the six tests developed by Luomajoki et al.
6. Sick leave recording the number of days absent from work during last seven days
7. Mean analgesic intake during the last seven days
8. A benchmark of 80 percent completion is a priori set for minimum adherence to the home training protocols

All outcomes were taken at baseline and three months later.

### **Completion date**

31/05/2013

## **Eligibility**

### **Key inclusion criteria**

1. Men and women 18 to 60 years of age
2. A history of low back pain (LBP) of at least three months
3. Moderate disability, i.e. five points or more on the Roland and Morris Disability Questionnaire (RMDQ)
4. Medium or high risk for poor outcome, evaluated with the Keele Start Back Tool (KSBT)
5. Ability to speak and read German
6. Having someone available for assistance to execute home training
7. Having home access to the internet
8. Participants have to consent to an expenditure of time of 30 minutes five times per week over eight weeks to execute a home program and one to two 30-minute physiotherapy sessions per week

### **Participant type(s)**

Patient

### **Healthy volunteers allowed**

No

### **Age group**

Adult

### **Lower age limit**

18 years

### **Sex**

All

### **Key exclusion criteria**

1. Nerve root pain
2. Diagnosed specific spinal pathology (such as malignancy, fracture, infection or inflammatory joint or bone disease)
3. Pregnancy or less than 6 months postpartum
4. Coexisting major medical disease causing a relative or absolute contraindication to general exercise
5. Undergone spinal surgery within the preceding two years

6. Intra-articular or perineural steroid injection on the lumbar spine during the previous five months

**Date of first enrolment**

01/11/2012

**Date of final enrolment**

31/05/2013

## **Locations**

**Countries of recruitment**

Switzerland

**Study participating centre**

**Haldenstrasse 15**

St.Gallen

Switzerland

9000

## **Sponsor information**

**Organisation**

Zurich University of Applied Sciences (Switzerland)

**ROR**

<https://ror.org/05pmsvm27>

## **Funder(s)**

**Funder type**

University/education

**Funder Name**

Zurich University of Applied Sciences (Switzerland)

## **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	10/04/2015		Yes	No