# Can motor performance of chronic low back pain patients be improved via motivating feedback by means of gaming?

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Determine whether feedback by means of motivational gaming can (partially) restore cognition-related deviations in motor performance as seen in back challenging conditions in CLBP patients.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Other condition
Study type	Interventional

# Summary

### ID

NL-OMON36413

**Source** ToetsingOnline

Brief title Gaming & CLBP

## Condition

• Other condition

**Synonym** chronic low back pain

### **Health condition**

chronische a-specifieke lage rugpijn

### **Research involving**

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Human

### **Sponsors and support**

**Primary sponsor:** Revalidatiecentrum Het Roessingh **Source(s) of monetary or material Support:** subsidie Wetenschappelijk Onderzoek Roessingh (WOR)

### Intervention

Keyword: Chronic low back pain, Gaming, Motor performance, Pain-related cognitions

### **Outcome measures**

#### **Primary outcome**

Motor performance expressed in the amount of time needed to complete a series

of predefined reaching movements

#### Secondary outcome

- Attention to task performance and attention to back sensation both measured

by a numerical rating scale (NRS) ranging from 0 (\*no attention at all\*) to 10

(\*full attention\*).

- Expected and experienced pain rating both measured by a NRS ranging from 0

(\*no pain at all\*) to 10 (\*worst pain imaginable\*)

# **Study description**

#### **Background summary**

Previous studies proved that chronic low back pain (CLBP) patients\* motor performance is deviated compared to healthy subjects. This applies for performance of low back motor task, but also tasks that do not involve the back. In addition, the deteriorating effect increases when tasks have to be performed in a back challenging condition - which has been proven to provoke pain-related cognitions.

Recent research has shown that giving knowledge of performance (KP) feedback on a simple motor task can dissolve the difference between patients\* and healthy subjects\* performance in a neutral sitting condition. Yet in a back challenging condition - that provoked pain-related cognitions - there remained differences between patients and healthy subjects.

Some studies have related pain-related cognitions (especially catastrophizing) to an increased attention towards back sensations, known as hypervigilance. It is plausible that hypervigilance distracts attention from performance in a back challenging condition. Apparently, simple KP feedback is not capable to counterbalance this. Therefore, a more enriched feedback strategy should be applied.

Gaming might be such a feedback strategy. It has proven to have a positive effect on attention towards performance (probably via motivation) and has proven to even be able to distract attention from pain in burn patients. In sum, gaming feedback seems to be a promising manner to compensate for the deviations in motor performance as seen is back challenging conditions. Therefore, the goal in the present study is to determine whether feedback by means of motivating gaming can counterbalance the deteriorations in motor performance cause by provocation of pain-related cognitions in CLBP patients.

### **Study objective**

Determine whether feedback by means of motivational gaming can (partially) restore cognition-related deviations in motor performance as seen in back challenging conditions in CLBP patients.

### Study design

Prospective intervention study

### Intervention

provoking position (i.e. lying prone without trunk support)

### Study burden and risks

The burden associated with participation comprises a once-only visit of approximately 30-45 minutes at Roessingh Research and Development. Both with respect to duration and actual load the burden on participants is relatively low. In essence, the burden does not deviate from (back challenging or otherwise confronting) situations that subject are confronted with in daily life. Besides, results in a previous study showed that the burden/load was considered rather low by the participants themselves. The excpected risks are negligible. The motor task and the conditions in which

it has to be performed are based on clinical tests and have proven to be executed without any problems by patiënts in a previous study. However, it is neither expected that subjects (patients in particular) will experience any benefits as a result of study participation.

# Contacts

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# **Trial sites**

### **Listed location countries**

Netherlands

# **Eligibility criteria**

#### Age

Adults (18-64 years) Elderly (65 years and older)

### **Inclusion criteria**

Between 18 and 70 years of age Able to speak and understand the Dutch language Length between 1m50 and 2m00 (necessary for task feasability) Capable of performing the experiments in the study (according to therapist's judgement for patients) Patients have low back pain without a specific physiopathological origin, for at least 12 weeks

### **Exclusion criteria**

Presence of upper-extremity disorders - or other pathologies compromising manual motor performance

Insufficient mastering of the Dutch language.

Control subjects will be excluded if they have had an episode of (back) pain complaints in the 6 months previous to study participation

# Study design

### Design

Study type:	Interventional
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Other

### Recruitment

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Recruitment status:	Recruitment stopped
Start date (anticipated):	23-03-2011
Enrollment:	45
Туре:	Actual

# **Ethics review**

Approved WMO	
Date:	12-10-2010
Application type:	First submission
Review commission:	METC Twente (Enschede)
Approved WMO	
Date:	29-03-2011
Application type:	Amendment

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# **Study registrations**

### Followed up by the following (possibly more current) registration

No registrations found.

### Other (possibly less up-to-date) registrations in this register

No registrations found.

### In other registers

 Register
 ID

 CCMO
 NL32578.044.10