

# Impact of neck rehabilitation on temporomandibular joints and muscle functioning in patients with chronic neck pain

<b>Submission date</b> 27/08/2020	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered
<b>Registration date</b> 23/09/2020	<b>Overall study status</b> Completed	<input type="checkbox"/> Protocol
<b>Last Edited</b> 19/10/2021	<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

### Background and study aims

Cervical spine dysfunction is a cause of neck pain. Cervical spine dysfunction occurs in about 70% of the population. Both diagnosis and treatment of these problems are difficult, and in many cases, the effects of therapy are not satisfactory. Existence of jaw (temporomandibular joint) discomfort along with cervical spine disorders is quite common and is associated with many limitations and adverse symptoms for the patient. The exact relationship between neck ailments and temporomandibular dysfunction (TMD) is still unclear. This study aims to verify the functional relationship between the cervical spine and TMJ as well as check whether the therapy focusing only on the cervical region has a real impact on the structures located in the facial area. These tests have practical applications because they can indicate new directions in the diagnosis and therapy of neck and TMD

### Who can participate?

Adults aged over 18 years, with chronic neck pain, and also healthy subjects.

### What does the study involve?

Participants undergo a three-week rehabilitation program involving manual therapy, massages, exercise and education.

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

The benefits to those taking part are the chance to receive 3 weeks of rehabilitation, which may improve health and reduce chronic neck pain. The intervention is provided by qualified physiotherapists, so there is no risk for participants.

### Where is the study run from?

1. Rzeszow University in Poland
2. University of Physical Education in Kraków (Poland)

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

April 2011 to December 2014

Who is funding the study?  
Investigator initiated and funded

Who is the main contact?  
Prof. Anna Mika, [anna.mika@awf.krakow.pl](mailto:anna.mika@awf.krakow.pl)

## Contact information

**Type(s)**  
Scientific

**Contact name**  
Prof Anna Mika

**ORCID ID**  
<https://orcid.org/0000-0002-4366-5091>

**Contact details**  
University of Physical Education in Krakow  
al. Jana Pawla II 78  
Kraków  
Poland  
31-571  
+48 126831134  
[anna.mika@awf.krakow.pl](mailto:anna.mika@awf.krakow.pl)

## Additional identifiers

**Clinical Trials Information System (CTIS)**  
Nil known

**Protocol serial number**  
Nil known

## Study information

**Scientific Title**  
Impact of cervical spine rehabilitation on temporomandibular joints functioning, and bioelectrical activity of cervical and masticatory system muscles in patients with idiopathic neck pain

**Acronym**  
CRTMD

**Study objectives**  
The aim of this study is to assess the impact of a 3-week neck-only rehabilitation programme without direct intervention in the craniofacial area on the bioelectric activity of both the cervical spine and muscles in the craniofacial area among patients with idiopathic neck pain. Experimental group undergo three-weeks rehabilitation program, which is individual for each

patient and comprise the following standard treatments for chronic pain of the musculoskeletal system.

### **Ethics approval required**

Old ethics approval format

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

Approved 05/03/2012, Ethical Committee of Rzeszow University in Poland (al. Tadeusza Rejtana 16C, 35-310 Rzeszów, Poland; +48 17 872 19 20; komisjabioetur@gmail.com), ref: No 3/05/2012

### **Study design**

Interventional non-randomized

### **Primary study design**

Interventional

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

Treatment

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

Idiopathic neck pain

### **Interventions**

The experimental group undergo a 3-week rehabilitation program, which is individual for each patient and comprises the following standard treatments for chronic pain of the musculoskeletal system: manual therapy (soft tissue therapy of the neck and the shoulder girdle, trigger point therapy, manual cervical traction, classical massage, myofascial release); individual exercises with a therapist (weight free, respiratory, fit ball and body posture correction exercises); physical therapy (sollux lamp); education on the character of the dysfunction, body posture correction techniques, ergonomics and everyday mouth hygiene.

The rehabilitation was provided five times a week lasting each time for about 2 h.

Age-matched subjects (control group) who were cervical pain-free, had no cervical spine and TMJ dysfunctions or were not in the process of current orthodontic treatment did not undergo any therapy.

### **Intervention Type**

Mixed

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

Measured at baseline and 3 weeks:

1. Pain intensity measured using 10-point visual analogue scale (VAS)
2. Temporomandibular joints functioning measured using the Helkimo clinical dysfunction index (Di)
3. Head posture and range of motion in the cervical spine - measured with measuring tape
4. Cervical Spine and craniofacial muscles bioelectrical activity (sEMG) assessed by surface electromyography

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

There are no secondary outcome measures

**Completion date**

22/12/2014

## Eligibility

**Key inclusion criteria**

Patient:

1. Chronic idiopathic neck pain

Patient and control:

2. Aged 18 years or above

**Participant type(s)**

Mixed

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Sex**

All

**Total final enrolment**

60

**Key exclusion criteria**

Patient:

1. Cervical spine injury 3 months prior to the therapy

2. Regular use of painkillers or steroids, without possibility to withdraw it for the whole duration of the therapy

3. Radiographically diagnosed developmental and degenerative abnormalities of the cervical spine as; spinal stenosis, spondylolisthesis, spondylolysis, spinal disc herniation

4. Orthodontic treatment (braces, aligners); removable dentures

Control:

5. Cervical pain

6. Cervical spine and TMJ dysfunction

7. In the process of current orthodontic treatment

**Date of first enrolment**

02/04/2012

**Date of final enrolment**

22/12/2014

# Locations

## Countries of recruitment

Poland

## Study participating centre

### Rzeszow University in Poland

al. Tadeusza Rejtana 16C

Rzeszów

Poland

35-310

## Study participating centre

### University of Physical Education in Kraków

al. Jana Pawła II 78

Kraków

Poland

31-571

# Sponsor information

## Organisation

Rzeszów University

## ROR

<https://ror.org/03pfsnq21>

# Funder(s)

## Funder type

Other

## Funder Name

Investigator initiated and funded

# Results and Publications

Individual participant data (IPD) sharing plan

All data generated or analysed during this study will be included in the subsequent results publication.

## 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>		26/04/2021	27/04/2021	Yes	No
<a href="#">Results article</a>		07/10/2021	19/10/2021	Yes	No