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Can the Alexander Technique improve pain processing and reduce joint loading in patient with knee osteoarthritis?

Submission date
22/12/2015

Recruitment status
No longer recruiting

Registration date
04/01/2016

Overall study status
Completed

Last Edited
14/02/2018

Condition category
Musculoskeletal Diseases

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[X] Results
[ ] Individual participant data

Plain English summary of protocol

Background and study aims
Osteoarthritis (OA) is the most common type of arthritis, which most often affects the knee. It occurs when the protective cartilage on the end of bones wears away. The bones then rub against one another, which can cause stiffness, pain and a reduction in a person's range of movement. A number of recent studies have shown that there is no link between perceived pain and the degree of joint wear, when measured with an x-ray. It has been suggested that this may happen because some OA patients are "over-reactive" to pain, because their brains amplify the pain signals coming from the affected joints. This over-reactivity to pain may trigger high levels of inappropriate muscle tension, which in-turn will increase joint loading (the force put on a weight-bearing joint during activity). The Alexander Technique (AT) teaches people how to avoid movements that cause unnecessary tension in their daily lives by increasing self-awareness and "unlearning" bad habits (such as patterns of muscle tension). It is taught by a qualified teacher who uses gentle hand contact and verbal instruction to guide movement, helping patients to become aware of, and to avoid, harmful muscle movements which can be applied to daily actions such as sitting or standing. The aim of this study is to find out whether the AT could help to lower pain and improve joint function in people suffering from knee OA.

Who can participate?
Adults over 40 years of age with knee osteoarthritis, and healthy adults of the same age.

What does the study involve?
All participants take part in 20 sessions over 14 weeks. During each 40 minute session, participants are taught the Alexander Technique by an experienced AT practitioner on a one-to-one basis. During the sessions, patients are encouraged to develop an awareness of patterns of muscle tension which can be triggered when they move which can interfere with practical tasks, such as standing up out of a chair. At the start of the study and at 15 weeks (after the 14 week AT course), participants are assessed in order to measure their pain and joint stiffness and function.

What are the possible benefits and risks of participating?
Participants could benefit from taking part as the AT is considered to be a beneficial form of health education which can affect other areas of health, such as improving breathing technique and reducing back pain. There are no risks for participants taking part in the study.

Where is the study run from?
Centre for Health Sciences Research, University of Salford (UK)

When is the study starting and how long is it expected to run for?
March 2011 to December 2015

Who is funding the study?
The BUPA Foundation (UK)

Who is the main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
Protocol v5

Study information

Scientific Title
Can neuromuscular re-education with the Alexander Technique improve pain processing and reduce joint loading in patient with knee osteoarthritis?

Acronym
KOAT (Knee Osteoarthritis and and Alexander Technique)

Study objectives
The primary hypotheses of the study are:
1. The Alexander Technique (AT) would improve clinical measures of pain and function in patients with knee osteoarthritis.
2. The AT would reduce muscle co-contraction in patients with knee osteoarthritis
3. The AT would improve pain processing in patients with knee osteoarthritis
4. Improvements in pain would be related to improvements in muscle co-contraction and improvements in pain processing

Ethics approval required
Old ethics approval format

Ethics approval(s)
1. Ethics Committee of the University of Salford, 10/06/2011, ref: REP11/024
2. NHS North West 10 Research Ethics Committee - Greater Manchester North, 28/03/2011, ref: 11/NW/0057

Study design
Non randomised study

Primary study design
Interventional

Secondary study design
Non randomised study

Study setting(s)
Other

Study type(s)
Treatment

Participant information sheet
Not available in web format. Please use the contact details below to request a patient information sheet.

Health condition(s) or problem(s) studied
Knee osteoarthritis

Interventions

All participants receive the intervention which consists of 20 sessions over a period of 14 weeks. Each session lasts for 40 minutes and is delivered on a one-to-one basis by an experienced Alexander Technique (AT) practitioner. During the lessons patients were encouraged to develop an awareness of patterns of muscle tension which can be triggered as movement is initiated and also which can interfere with functional tasks, such as standing up out of a chair.

Patients are followed up immediately after the end of the intervention (14 weeks post baseline) and then again at 12 months after the end of the intervention (15 months post baseline).

Intervention Type
Other

Primary outcome measure
1. Pain is measured using the Western Ontario and McMaster Universities Arthritis Index (WOMAC) pain component at baseline, immediately after the intervention and 15 months
2. Pain, joint stiffness & function an is measured using the full Western Ontario and McMaster Universities Arthritis Index (WOMAC) at baseline, immediately after the intervention and 15 months

Secondary outcome measures
Joint movement and activity is determined by measuring muscle co-contraction between the medial quadriceps and medial hamstrings during the stance phase of walking and also during a sit-to-stand activity at baseline and after the intervention.

Overall study start date
01/03/2011

Completion date
01/12/2015

Eligibility

Key inclusion criteria
Knee osteoarthritis (OA) patients:
1. Over the age of 40
2. Identified on GP record as having knee OA
3. Knee pain on walking
4. Able to speak and write fluent English
5. Able to attend at the University of Salford on two occasions for an assessment
6. Willing to attend for 20 AT lessons with a local practitioner
7. Willing to attend for a knee x-ray

Healthy participants
1. Over the age of 40
2. No musculoskeletal pain
3. Able to speak and write fluent English
4. Able to attend at the University of Salford on two occasions for an assessment

Participant type(s)
Mixed

Age group
Adult

Sex
Both

Target number of participants
n=20 patients with knee OA and n=20 healthy participants

Key exclusion criteria
1. Systemic disorders, such as rheumatoid arthritis.
2. Balance or mobility disorders limiting their ability to perform the assessment.
3. Neurological or psychiatric disorder.
4. Malignancy
5. Diabetes
6. BMI greater than 33

Date of first enrolment
01/10/2011

Date of final enrolment
01/10/2014

Locations

Countries of recruitment
England

United Kingdom

Study participating centre
University of Salford
Centre for Health Sciences Research
Blatchford Building
Stratham Street
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Sponsor information

Organisation
University of Salford

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Sponsor type
University/education

Website
www.salford.ac.uk

ROR
https://ror.org/01tmqtf75

Funder(s)

Funder type
Charity

Funder Name
The BUPA Foundation

Results and Publications

Publication and dissemination plan
We plan to publish the results of this work as 2 separate journal papers, reporting clinical, biomechanical and physiological effects of the AT.

Intention to publish date
15/01/2016

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?
Results article	results	27/08/2016		Yes	No