



Medical Update – Neck, Shoulder & Knee

DBC Network Meeting, Dubai, November 26, 2010 - Simo Taimela

Agenda

1. Cochrane Library
2. Treatment guidelines in the Netherlands and Finland
3. Conclusions

Evidence: Cochrane Library

NECK

Neck pain

Exercises for mechanical neck disorders

Manipulation or Mobilisation for Neck Pain

Patient education for neck pain with or without radiculopathy

Masssage for mechanical neck disorders

Multidisciplinary biopsychosocial rehabilitation for neck and shoulder pain among working age adults

Electrotherapy for Neck Pain

Mechanical traction for neck pain with or without radiculopathy

+ 6 others

Reviews as presented in the *Cochrane Database of Systematic Reviews* 2010, 31.8.2010

Exercise

Authors' conclusions

The evidence summarised in this systematic review indicates that there is a role for exercises in the treatment of acute and chronic mechanical neck disorder and neck disorder plus headache. Exercise for neck disorders with radicular findings is not assessed. The relative benefit of each type of exercise needs extensive research. Phase II trials would help identify the most effective treatment characteristics and dosages.

Manipulation and mobilisation

Authors' conclusions

Cervical manipulation and mobilisation produced similar changes. Either may provide immediate- or short-term change; no long-term data are available. Thoracic manipulation may improve pain and function. Optimal techniques and dose are unresolved. Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.

Electrotherapy

Authors' conclusions

We cannot make any definite statements on the efficacy and clinical usefulness of electrotherapy modalities for neck pain. Since the quality of evidence is low or very low, we are uncertain about the estimate of the effect. Further research is very likely to change both the estimate of effect and our confidence in the results. Current evidence for PEMF, rMS, and TENS shows that these modalities might be more effective than placebo but not other interventions. Funding bias should be considered, especially in PEMF studies. Galvanic current, iontophoresis, electric muscle stimulation(EMS), and static magnetic field did not reduce pain or disability. Future trials on these interventions should have larger patient samples and include more precise standardization and description of all treatment characteristics.

Massage

Authors' conclusions

No recommendations for practice can be made at this time because the effectiveness of massage for neck pain remains uncertain.

Summary (Cochrane Library; non-pharmacological, non-invasive options): Neck Pain

Evidence for:

- Exercise
- Mobilisation (short-term effect)

Summary (Cochrane Library; non-pharmacological, non-invasive options): Neck Pain

Insufficient or no evidence:

- Patient education
- Multidisciplinary rehabilitation
- Massage
- Electrotherapy
- Mechanical traction
- Conservative treatment for whiplash

SHOULDER

Shoulder

Physiotherapy interventions for shoulder pain

Acupuncture for shoulder pain

Corticosteroid injections for shoulder pain

Oral steroids for adhesive capsulitis

Surgical versus non-surgical treatment for acute anterior shoulder dislocation

Surgery for rotator cuff disease

Surgical versus conservative interventions for treating acromioclavicular dislocation of the shoulder in adults

Interventions for treating proximal humeral fractures in adults

Reviews as presented in the *Cochrane Database of Systematic Reviews* 2010, Latest Issue 31.8.2010

Physiotherapy interventions (shoulder)

Authors' conclusions

The small sample sizes, variable methodological quality and heterogeneity in terms of population studied, physiotherapy intervention employed and length of follow up of randomised controlled trials of physiotherapy interventions results in little overall evidence to guide treatment. There is evidence to support the use of some interventions in specific and circumscribed cases. There is a need for trials

Corticosteroid injections (shoulder)

Authors' conclusions

Despite many RCTs of corticosteroid injections for shoulder pain, their small sample sizes, variable methodological quality and heterogeneity means that there is little overall evidence to guide treatment. Subacromial corticosteroid injection for rotator cuff disease and intra-articular injection for adhesive capsulitis may be beneficial although their effect may be small and not well-maintained.

Surgery vs. non-surgical treatment for acute shoulder dislocation

Authors' conclusions

Limited evidence supports primary surgery for young adults, usually male, engaged in highly demanding physical activities who have sustained their first acute traumatic shoulder dislocation. There is no evidence available to determine which treatment is better for other patient groups.

Surgery for Rotator Cuff Disease

Authors' conclusions

Based upon our review of 14 trials examining heterogeneous interventions and all susceptible to bias, we cannot draw firm conclusions about the effectiveness or safety of surgery for rotator cuff disease. There is “Silver” (www.cochranemsk.org) level evidence from three trials that there are no significant differences in outcome between open or arthroscopic subacromial decompression and active non-operative treatment for impingement. There is also “Silver” level evidence from six trials that there are no significant differences in outcome between arthroscopic and open subacromial decompression although four trials reported earlier recovery with arthroscopic decompression.

Summary (Cochrane Library; non-pharmacological, non-invasive options): Shoulder

Some evidence for:

- Exercise for rotator cuff disease
- Combining mobilisation with exercise provides additional benefit for rotator cuff disease
- Active treatment as effective as surgery for impingement
- Corticosteroid injections for rotator cuff disease in short term
- Oral steroids for adhesive capsulitis
- Surgical treatment of acute anterior shoulder dislocation in active young men
- Early physiotherapy, without immobilisation, may be sufficient for undisplaced proximal humeral fractures.

Summary (Cochrane Library; non-pharmacological, non-invasive options): Shoulder

Insufficient or no evidence:

- No evidence of the effect of ultrasound in shoulder pain, adhesive capsulitis or rotator cuff tendinitis.
- No evidence that physiotherapy alone is of benefit for adhesive capsulitis.
- How to treat anterior dislocation conservatively.
- Acupuncture.
- Surgery for rotator cuff tears.

KNEE

Knee Ligament and Soft Tissue Injuries

Exercise therapy for patellofemoral pain syndrome

Therapeutic ultrasound for treating patellofemoral pain syndrome

Exercise for treating isolated anterior cruciate ligament injuries in adults

Surgical versus conservative interventions for anterior cruciate ligament ruptures in adults

Exercise for treating anterior cruciate ligament injuries in combination with collateral ligament and meniscal damage of the knee in adults

Interventions for treating posterior cruciate ligament injuries of the knee in adults

Reviews as presented in the *Cochrane Database of Systematic Reviews* 2010, 31.8.2010

Exercise for patellofemoral pain syndrome

Authors' conclusions

The evidence that exercise therapy is more effective in treating PFPS than no exercise was limited with respect to pain reduction, and conflicting with respect to functional improvement. There is strong evidence that open and closed kinetic chain exercise are equally effective. Further research to substantiate the efficacy of exercise treatment compared to a non-exercising control group is needed, and thorough consideration should be given to methodological aspects of study design and reporting.

Exercise for isolated ACL

Authors' conclusions

This review has demonstrated an absence of evidence to support one form of exercise intervention against another and the use of supplementary exercises in the management of isolated ACL injuries. Further research in the form of large scale well designed randomised controlled trials with suitable outcome measures and surveillance periods, using standardised reporting should be considered.

Surgery vs. conservative treatment for ACL rupture

Authors' conclusions

There is insufficient evidence from randomised trials to determine whether surgery or conservative management was best for ACL injury in the 1980s, and no evidence to inform current practice. Good quality randomised trials are required to remedy this situation.

Exercise for combined ACL, MCL and meniscus injuries

Authors' conclusions

This review has demonstrated an absence of evidence to support one form of exercise intervention over another. Further research should be considered in the form of large scale well-designed and well-reported randomised controlled trials with suitable outcome measures and surveillance periods. Suitable outcome measures should include a measure of functional outcome relevant to the individual.

PCL

Main results

No randomized or quasi-randomized controlled studies meeting the selection criteria were identified.

Ultrasound for patellofemoral pain

Authors' conclusions

Ultrasound therapy was not shown to have a clinically important effect on pain relief for people with patellofemoral pain syndrome. These conclusions are limited by the poor reporting of the therapeutic application of the ultrasound and low methodological quality of the one trial included. No conclusions can be drawn concerning the use, or non-use, of ultrasound for treating patellofemoral pain syndrome. More well-designed studies are needed.

Knee Osteoarthritis

25 reviews, including

Exercise for osteoarthritis of the knee

Intensity of exercise for the treatment of osteoarthritis

Braces and orthoses for treating osteoarthritis of the knee

Thermotherapy for treatment of osteoarthritis

Reviews as presented in the *Cochrane Database of Systematic Reviews* 2010,
31.8.2010

Exercise for Osteoarthritis

Authors' conclusions

There is platinum level evidence that land-based therapeutic exercise has at least short term benefit in terms of reduced knee pain and improved physical function for people with knee OA. The magnitude of the treatment effect would be considered small, but comparable to estimates reported for non-steroidal anti-inflammatory drugs.

Intensity of Exercise for Osteoarthritis ?????

Authors' conclusions

Both high intensity and low intensity aerobic exercise appear to be equally effective in improving a patient's functional status, gait, pain and aerobic capacity for people with OA of the knee. Further research involving a greater number of subjects, and a larger number of studies involving a control group is needed to further substantiate these results.

Braces and Insoles

Authors' conclusions

Based on two brace and three insole studies, we conclude that there is 'silver' level evidence (www.cochranemsk.org) that a brace and a lateral wedge insole have small beneficial effect.

There is 'silver' level evidence that strapped insoles correct leg alignment. However, long-term adherence to brace and insole treatment is low. There is no evidence whether a brace is more effective than an insole.

Summary (Cochrane Library): Knee

Very little evidence based on randomised trials to rely on as regards:

- Ligament injuries
- Meniscal injuries
- Anterior knee pain

In knee osteoarthritis, the following components are beneficial:

- Exercise (but optimal application or dosage is not known)
- Thermotherapy
- Braces and orthoses

PRACTICE GUIDELINES

Dutch Guidelines: NP

NVAB= Nederlandse Vereniging voor Arbeids- en Bedrijfsgeneeskunde

CBO= Het Kwaliteitsinstituut voor de Gezondheidszorg

NHG= Nederlands Huisartsen Genootschap

GGD Nederland

Trimbos Institute

KNGF= Koninklijk Nederlands Genootschap voor Fysiotherapie

Condition	Guide -line	Intervention	Effect		C-effect
Arm & Neck complains (non-specific)	NVAB 2003	Graded Activity	+	3	?
		Multidisciplinary therapy	+	2	?
		Physical Activity	+	2	?
		Physiotherapy	+	2	?
		Behavioural therapy	-	2	?
		Workplace advice	+	2	?
		In Neck complaints: manual therapy	+	1	?

Dutch Guidelines: Knee / Hip Arthrosis

NVAB= Nederlandse Vereniging voor Arbeids- en Bedrijfsgeneeskunde

CBO= Het Kwaliteitsinstituut voor de Gezondheidszorg

NHG= Nederlands Huisartsen Genootschap

GGD Nederland

Trimbos Institute

KNGF= Koninklijk Nederlands Genootschap voor Fysiotherapie

Condition	Guide -line	Intervention	Effect.		C-effect
Knee/hip arthrosis	CBO 2007	Exercise Therapy	+	1	?
		(Pain) Medication	+	1	?
		Psych. Behavioral. Education	+	1	?
		Braces and insoles	-	2	?
		Weight loss	+	1	?
		Surgical interventions			?
		Home based exercise program	+	2	?

Synthesis and comparison with the Finnish Guidelines

<i>Topic</i>	<i>Recommendation based on the synthesis of guidelines in the Netherlands</i>	<i>Name of the Finnish Guideline (Käypä hoito suositus)</i>	<i>Difference</i>
Domains predicting sickness absence and disability			
Pain and physical impairment			
Neck complaints	The current evidence is somewhat confusing. Exercise and mobilisation as multimodal treatment seem recommendable.	Niskakipu	The Finnish guideline recommends ergonomics intervention also.
Knee and hip arthrosis	Exercise combined with cognitive-behavioural modification. Weight loss program when indicated.	Polvi- ja lonkkanivelriikon hoito	No relevant difference

