

Addressing work-relatedness of 'Forearm pain' in evidence based guidelines for primary care providers in New Zealand

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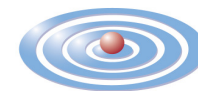


NES 2008

Centre for Ergonomics and
Occupational Safety and Health



Centre for Allied Health Evidence



Background

The Accident Compensation Corporation in New Zealand commissioned the development of the guidelines because:

- 2705 claims under the umbrella Occupational Overuse Syndrome (OOS)
- No clear pathways for management and treatment
- Varied treatment
- Unsatisfactory outcomes

Outcome

- Develop evidence based clinical practice guidelines (& algorithms where practicable) for the diagnosis & management of adults with forearm pain* in the primary care setting.

H1

- The guidelines will provide clinical practice recommendations

* 'Distal upper limb musculoskeletal conditions'

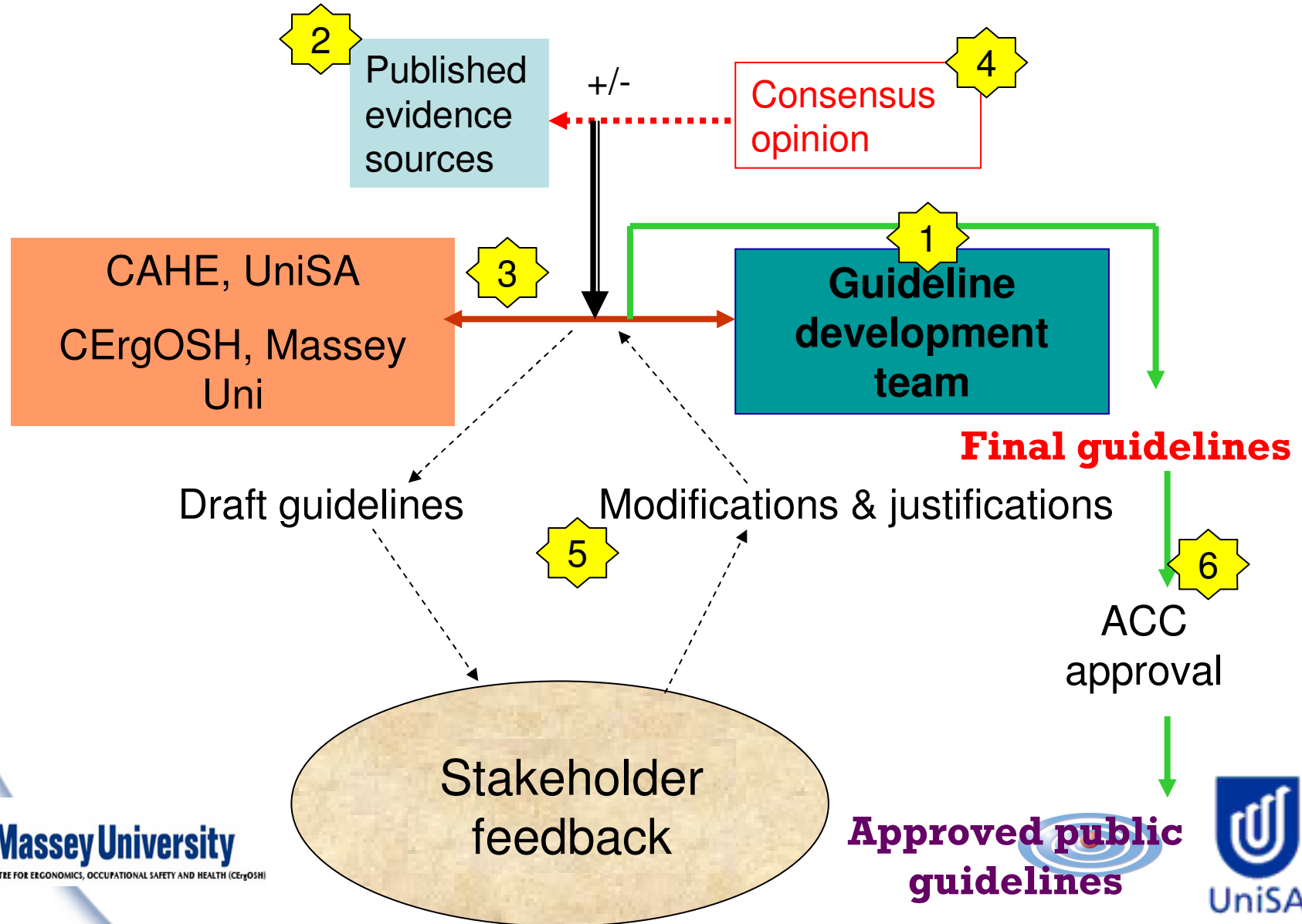
Slide 3

H1

Conditions encompassed by the phrase 'forearm pain' delineated next slide.

HLS-UniSA; 2.2.2006

Guideline development process



Grading of recommendation

Grade	Description
A	Body of evidence can be trusted to guide practice - both the volume and the consistency component are graded A
B	Body of evidence can be trusted to guide practice in most situations - both the volume and the consistency component are graded at least B
C	Body of evidence provides some support for recommendation(s) but care should be taken in its application
D	Body of evidence is weak and recommendation must be applied with caution
Practice point	The recommendation is perceived to argument the clinical management of the condition but the strength of the recommendation is based only on expert opinion/recommended practice due to an absence of (valid) empirical research

Assessing work-relatedness

- Understanding the causes
- Conservative management
- Early return to work
- Preventing occurrence in the future

Development of tool to assess the probability of work-relatedness

- Tool based on expert consensus and epidemiological studies (Sluiter et al. 2001)

But

- No evidence for the efficacy of the tool.
- Sluiter's tool not user friendly (GDT)
- Development of a more user friendly tool

Modified tool for assessing work-relatedness

- Traffic light
 - likelihood of work-relatedness
 - Action to take
- Screening for physical risk factors
 - Posture
 - Force
 - Repetition
- Screening for psychosocial factors
 - Demands
 - Social support
 - Recovery time

Traffic light

Red	Physical (\pm non-physical) risk factors have been identified as present at the workplace that could contribute to the patient's condition
Yellow	Only non-physical risk factors have been identified as present at the workplace that could contribute to the patient's condition
Green	Neither physical nor non-physical work factors have been identified as risk factors that could contribute to the patient's condition

Physical factors: Elbow conditions (A yes responses indicates that the work factor is a risk factor)

Elbow flexion

Do you work holding the hand close to your upper body for more than 2 hours a day?

Elbow extension

Do you work with your elbow fully extended for more than 2 hours a day?

Pronation/supination forearm

Do you work with the forearm in an extreme twisted position for more than 2 hours a day?

High Force Elbow

Do you perform tasks that are forceful for the forearm muscles for more than 2 hours a working day? (squeezing or pinching/ holding high loads in the hands/ using hand tools (force \geq 4 kg))

High repetitiveness Elbow

Do you perform actions where you repeat elbow or wrist movement more than 2-4 times a minute for more than 4 hours a working day?

Screening -tool for assessing non-physical risk factors

To assess if work-place demands are a risk factor; How often:	Always	Often	Some-times	Seldom	Never	Score
Do you have to work very fast?	4	3	2	1	0	
Is it extremely important to do the work with out mistake?	4	3	2	1	0	
Do you have enough time to do everything?	0	1	2	3	4	
Do different groups at work demand things from you that you think are difficult to combine?	4	3	2	1	0	
<i>Total ≥ 12 High psychosocial demands is a risk factor^A</i>						

The GDT's assessment of the tool

Question	Average score On a 1 – 9 scale
What do you think of the colour-coded action indicator – do you dislike or like it?	6.1
Do you disagree or agree with the actions that are recommended for each of the colour-coded action indicators?	7.3
Do you disagree or agree that it is important for a primary care practitioner to screen for physical factors that may be associated with the work-place tasks of a patient presenting with a musculoskeletal condition?	7.7
Do you disagree or agree with the risk factors to be screened for Elbow conditions?	7.2
Do you disagree or agree with the risk factors to be screened for Wrist & Hand conditions?	7.4
Do you disagree or agree that it is important for primary care practitioner to screen for non-physical factors that may either be associated with the work-place tasks or might be present in the work environment of a patient with a musculoskeletal condition?	7.5
Do you disagree or agree with the list of non-physical work-place 'demands' to be screened for?	7.0
Do you disagree or agree with the list of non-physical work-place 'social support' issues to be screened for?	6.9
Do you disagree or agree with the time interval suggested for allowed recovery time in the work-place?	6.4
Do you disagree or agree that the assessment tool should be included in the Guidelines as an appendix (rather than being part of the main text)?	6.0

Critical comments from the GDT

- No evidence for this simplified tool,
- The tool could be used in a way that would give the patient a perception that they would be eligible for compensation
- The tool would not be used (screening tools for assessing psychosocial risk factors for low back pain were not used by general practitioners in NZ (Crawford, Ryan, & Shimoton 2007)).

Inclusion of work-relatedness

Not to include the simplified tool in the guidelines.

It was however agreed that contributory factors occurring in work situations as well as outside work should be included in the guiding principles of the guidelines

Where evidence was found, work related risk factors; like specific task, environmental factors or prevalence in industry, were included in the condition specific guideline in the section on 'Epidemiology'

Securing effective return to work

“(...) clinicians should consider activity limitation and social participation restriction that are of relevance to patients inclusive of work, recreational pursuits and sport. An important consideration is the role of contextual factors (social, environmental, and psychosocial influences) that may both mediate a patient’s presentation, and influence recovery.”

Level of evidence: C/D

Epidemiology and risk factors CTS

“Direct evidence concerning the causal association between psychosocial factors (individual, work oriented) and CTS is limited; however, psychosocial factors should be considered when determining a patients’ prognosis.

Highly repetitive (short cycle) activities involving the wrist/hand complex in gripping and/or manipulation tasks; frequent and/or forceful activities using the hand; hand-arm vibration; awkward working posture (more than 30° beyond a neutral wrist position) or a combination of these factors may be associated with CTS. In addition, the influence of physical factors may be augmented in the presence of other risk factors known to be associated with CTS (for example high BMI, older age, female gender).

High-risk task identification, high-risk person-task fit and job scheduling may reduce the incidence of CTS, as well as optimise the chance of remission in established cases and minimise the risk of recurrence. To facilitate this standardised work exposure guidelines should be developed and adopted to assist primary health care providers in the clinical management of CTS presentations associated with occupational exposures.”

Conclusion

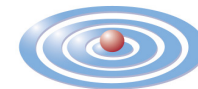
- Political resistance to include the work-relatedness tool
- Less likely that work-relatedness will be addressed in primary care
- Continue to treating the patient without treating the workplace

A way forward

- Present the tool to specific primary care practitioner groups for them to trial
- The Occupational Health Nurses Association is interested in trialing it.

NH&MRC hierarchy of evidence for treatment (2005-6)

- I Evidence obtained from a systematic review of all relevant randomised controlled trials.
- II Evidence obtained from at least one properly-designed randomised controlled trial
- III – 1 Evidence obtained from well-designed pseudo-randomised controlled trials (alternate allocation or some other method).
- III – 2 Evidence obtained from comparative studies with concurrent controls and allocation not randomised (cohort studies), case-control analytic studies, or interrupted time series with a control group.
- III – 3 Evidence obtained from comparative studies with historical control, two or more single-arm studies, or interrupted time series without a parallel control group
- IV Evidence obtained from case series, either post-test or pre-test and post-test.



NH&MRC body of evidence assessment matrix

Component	A	B	C	D
	Excellent	Good	Satisfactory	Poor
Volume of evidence	several level I or II studies with low risk of bias	one or two level II studies with low risk of bias or a SR/multiple level III studies with low risk of bias	level III studies with low risk of bias, or level I or II studies with moderate risk of bias	level IV studies, or level I to III studies with high risk of bias
Consistency	all studies consistent	most studies consistent and inconsistency may be explained	some inconsistency reflecting genuine uncertainty around clinical question	evidence is inconsistent
Clinical impact	very large	substantial	moderate	slight or restricted
Generalisability	population/s studied in body of evidence are the same as the target population for the guideline	population/s studied in the body of evidence are similar to the target population for the guideline	population/s studied in body of evidence different to target population for guideline but it is clinically sensible to apply this evidence to target population*	population/s studied in body of evidence different to target population and hard to judge whether it is sensible to generalise to target population
Applicability	directly applicable to NZ healthcare context	applicable to NZ healthcare context with few caveats	probably applicable to NZ healthcare context with some caveats	not applicable to NZ healthcare context

For intervention studies	For diagnostic studies
<p>1. Method of treatment assignment</p> <ul style="list-style-type: none"> a. Correct, blinded randomisation method described, OR randomised, double-blind method stated, AND group similarity documented b. Blinding and randomisation stated but method not described, OR suspect technique (eg allocation by drawing from an envelope) c. Randomisation claimed but not described and investigator not blinded d. Randomisation not mentioned <p>2. Control of selection bias after treatment assignment</p> <ul style="list-style-type: none"> a. Intention to treat analysis AND full follow-up b. Intention to treat analysis AND <15% loss to follow-up c. Analysis by treatment received only OR no mention of withdrawals d. Analysis by treatment received, AND no mention of withdrawals, OR more than 15% withdrawals/loss-to-follow-up/post-randomisation exclusions <p>3. Blinding</p> <ul style="list-style-type: none"> a. Blinding of outcome assessor, AND patient and care giver b. Blinding of outcome assessor, OR patient and care giver c. Blinding not done <p>4. Outcome assessment (if blinding was not possible)</p> <ul style="list-style-type: none"> a. All patients had standardised assessment b. No standardised assessment OR not mentioned 	<p>1. Descriptive information about the study:</p> <ul style="list-style-type: none"> a. Study identification b. What is the study type? c. What tests are being evaluated? d. What are the characteristics of the population and study setting? e. Is the incremental value of the test being compared to other routine tests? <p>2. Has selection bias been minimised?</p> <ul style="list-style-type: none"> a. Were patients selected consecutively? <p>3. Was follow-up for final outcomes adequate?</p> <ul style="list-style-type: none"> a. Is the decision to perform the reference standard independent of the test results (ie avoidance of verification bias)? b. If not, what per cent were not verified? <p>4. Has measurement bias been minimised?</p> <ul style="list-style-type: none"> a. Was there a valid reference standard? b. Are the test and reference standards measured independently (ie blind to each other)? c. Are tests measured independently of other clinical and test information? d. If tests are being compared, have they been assessed independently (blind to each other) in the same patients or done in randomly allocated patients? <p>5. Has confounding been avoided?</p> <ul style="list-style-type: none"> a. If the reference standard is a later event that the test aims to predict, is any intervention decision blind to the test result?

Outline of guideline development matrix

	Early warning symptoms	Clinical Tests (+ clinical special tests)	Referral criteria for: Special Diagnostic Tests: (electro-diagnostic/ imaging)	Prognostic factors for good/poor outcome (including yellow flags)	Conservative Clinical & Medical Management (+ pharmacotherapy)	Referral criteria for Specialist Management (*Ergonomic Mx)
Epicondylitis	1	2	3	4	5	6
Flexor/extensor Peritendonitis/tenosynovitis of forearm & wrist	7	8	9	10	11	12
De Quervain's disease	13	14	15	16	17	18
Carpal tunnel syndrome	19	20	21	22	23	24
Raynaud's phenomenon	25	26	27	28	29	30
Bursitis	31	32	33	34	35	36
OOS non-specific conditions	37	38	39	40	41	42

Scope

- The guideline to be developed is for use by primary healthcare providers with a particular focus on GPs, Ptys, OTs & nurse practitioners.
- Conditions encompassed by the phrase 'forearm pain' are exclusively delineated as:
 - *Epicondylitis*
 - *Flexor-extensor peritendondontitis/tenosynovitis of the forearm & wrist,*
 - *De Quervain's Tenovaginitis*
 - *Carpal tunnel syndrome*
 - *Raynaud's phenomenon*
 - *Bursitis*
 - *Conditions included under the umbrella term of 'non-specific occupational overuse syndrome (OOS) forearm pain'*

Objectives

- Identify & assess the main tools &/or investigations used in the assessment & diagnosis of forearm pain, including a typical presentation:
 - Criteria for referral to specialists for diagnosis & **interventions**
 - Details of differential diagnosis
- Identify & assess the different **treatment options** available for the management of forearm pain, including physical & medical management
- Identify & assess the different tools &/or criteria for assessing response to treatment.