



Outcome Measurement... ICF and Content Validity

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2 word summary

CONTENT

MATTERS



How do select outcome measures?

- ▶ Conceptual basis
 - ▶ Content validity- assesses intended construct
 - ▶ Measurement Purpose
- ▶ Statistical Performance- ability to achieve measurement purpose
 - ▶ Clinimetric
 - ▶ Modern Techniques
- ▶ Consensus – on what is needed
 - ▶ Within a clinic- informal
 - ▶ International – formal

Content
Validity

Measurement
Purpose

Measurement
Properties

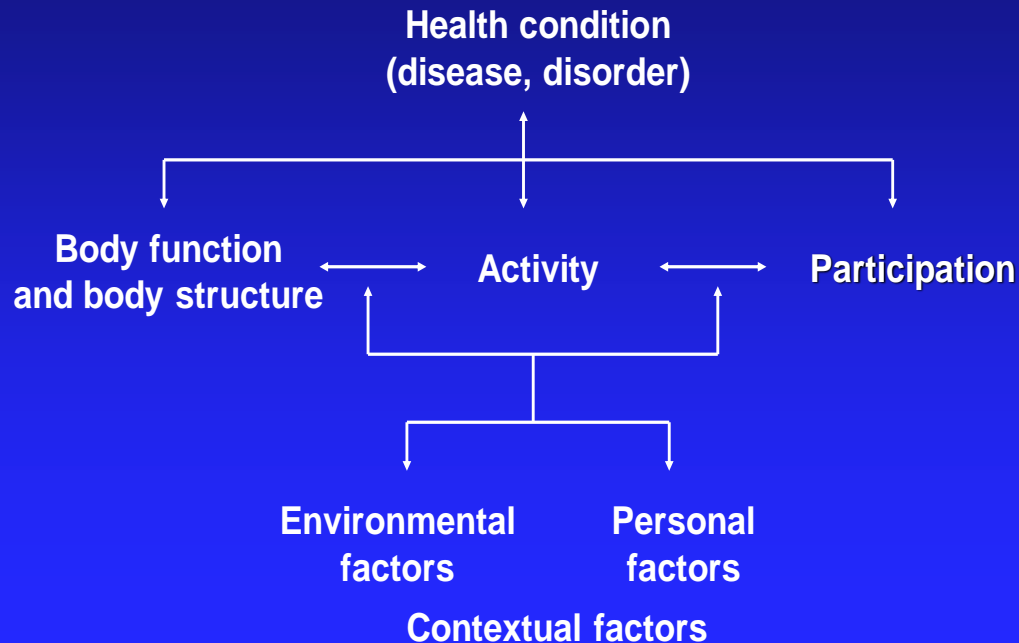
Content Validity

- ▶ The construct is clearly defined
- ▶ Evaluates the range of the construct
- ▶ Evaluates relevant features of the construct
- ▶ Items are equitably representative of the key features
- ▶ The items are interpreted by respondents as intended
- ▶ The responses are not confounded by other factors
 - ▶ Age, literacy, sex/gender, education, culture, health status

What is ICF

1. A conceptual model
 1. A bio(psycho)social view of health that focuses on human function and disability
 2. A hierarchical coding system that DESCRIBES function and disability

The biopsychosocial model of functioning and disability



ICF

International
Classification of
Functioning,
Disability
and
Health



World Health Organization
Geneva

provides an international
common language for describing
functioning, disability and health

ICF Components

Body Functions & Structures



Functions

Structures

Activities & Participation



Capacity

Performance

Environmental Factors



Barriers

Facilitators

Interaction of ICF Components (cont.)

- ICF components can be expressed in both positive and negative terms.

	Positive Term	Negative Term
Overall Health Condition	Function	Disability
Body Functions and Structures	Functional and Structural integrity	Impairment
Activities	Activities participation	Activity limitation, Participation restriction
Environmental Factors	Facilitators (fixed or modifiable)	Barriers (fixed or modifiable)
Personal Factors	Not applicable	Not applicable

Body Functions

CHAPTER 1 - Mental functions



CHAPTER 2 - Sensory functions and pain



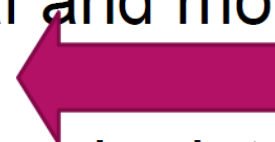
CHAPTER 3 - Voice and speech functions

CHAPTER 4 - Functions of the cardiovascular,
hematological, immunological and
respiratory systems

CHAPTER 5 - Functions of the digestive, metabolic and
endocrine systems

CHAPTER 6 - Genitourinary and reproductive functions

CHAPTER 7 - Neuromusculoskeletal and movement
related functions



CHAPTER 8 - Functions of the skin and related structures



Activities and Participation

CHAPTER 1 - Learning and applying knowledge

CHAPTER 2 - General tasks and demands

CHAPTER 3 - Communication

CHAPTER 4 - Mobility

CHAPTER 5 - Self-care

CHAPTER 6 - Domestic Life

CHAPTER 7 - Interpersonal interactions and relationships

CHAPTER 8 - Major life areas

CHAPTER 9 - Community, social and civic life



Environmental Factors

CHAPTER 1 - Products and technology

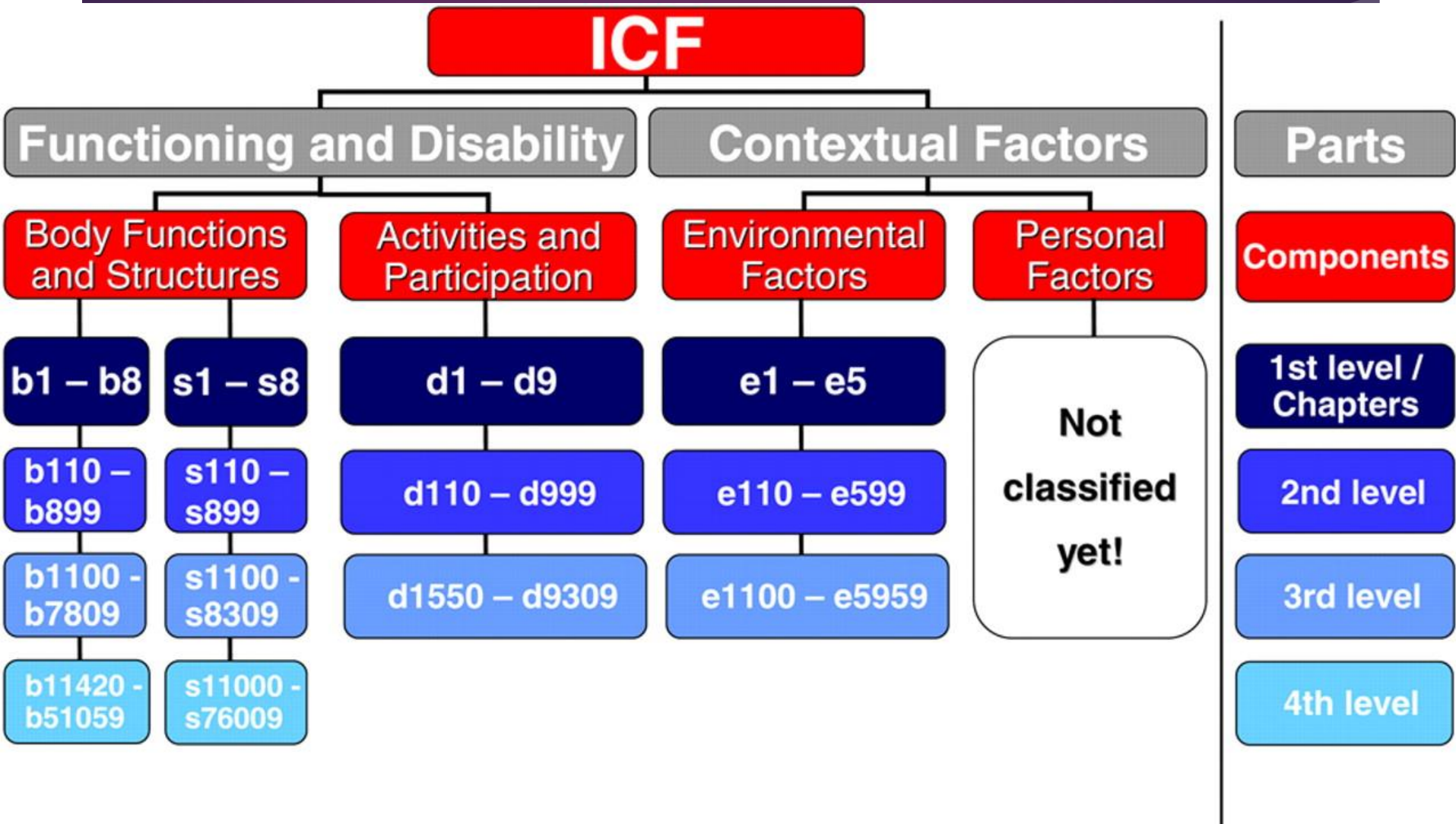
CHAPTER 2 - Natural environment and human-made
changes to environment

CHAPTER 3 - Support and relationships

CHAPTER 4 - Attitudes

CHAPTER 5 - Services, systems and policies

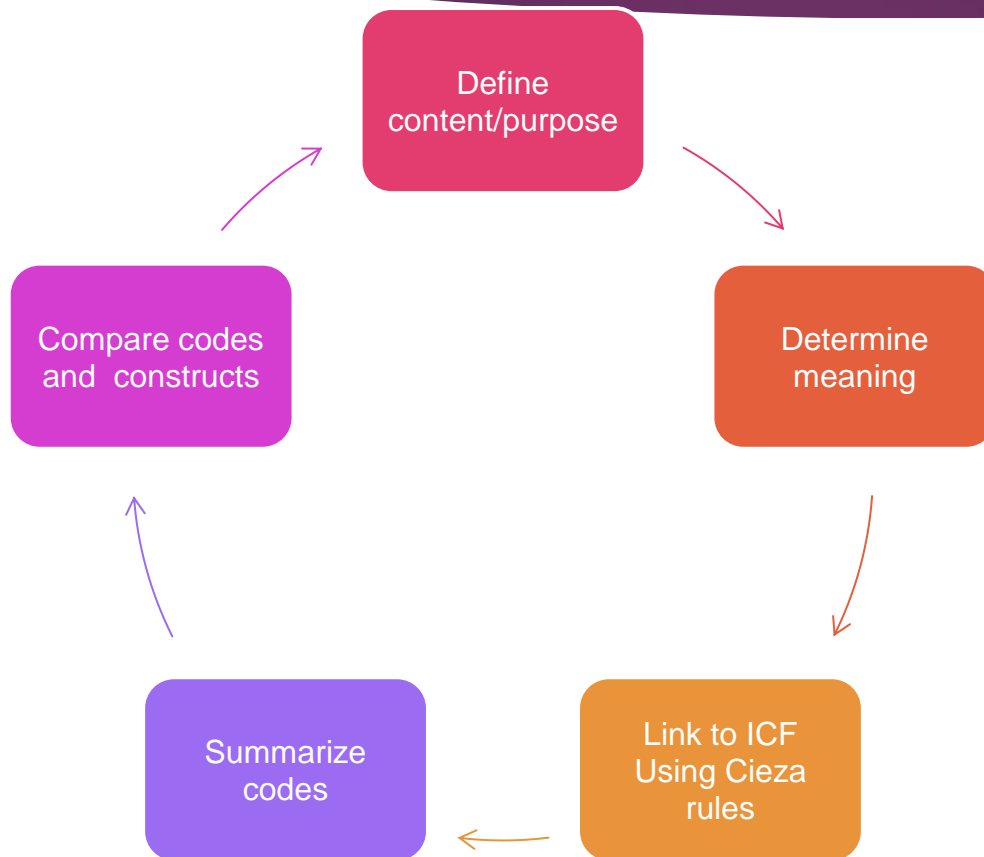
ICF Hierarchical Classification



How do I code

- ▶ Use latest LINKING rules
 - ▶ Cieza et al
 - ▶ Code most specific meaning (not examples) of all content
- ▶ Brouser and codebook

Linking Concepts/Items to ICF using Cieza's et al Rules



- ▶ Can code items, open responses)
- ▶ Each meaningful concept is linked to the most precise ICF category.
- ▶ Not to use *other specified or unspecified*
- ▶ Not definable - nd
- ▶ be used any content

Consider functional “meaning”



- ▶ Farming - d850 remunerative employment
- ▶ Gardening- d6505 Taking care of plants, indoors and outdoors
- ▶ Pruning trees- d6505 Taking care of plants, indoors and outdoors
- ▶ Watering plants in home- d6505 Taking care of plants, indoors and outdoors
- ▶ Flower arranging
 - ▶ Florist- d850 remunerative employment
 - ▶ Hobby artist- d9202 arts and culture



Dealing with imprecision: Rule 3



Example

- ▶ Rule 3. Do not use the so-called “other specified” ICF categories, which are uniquely identified by the final code 8. If the content of a meaningful concept is not explicitly named in the corresponding ICF category, the additional information not explicitly named in the ICF is documented.
- ▶ Concept “Pain in left shoulder”
- ▶ is linked to b28016 “Pain in the joints”
- ▶ and the additional information “left shoulder” is documented.

b2 CHAPTER 2 SENSORY FUNCTIONS AND PAIN

  b210-b229 Seeing and related functions (b210-b229)

  b230-b249 Hearing and vestibular functions (b230-b249)



  b250-b279 Additional sensory functions (b250-b279)

 b250 Taste function

 b255 Smell function

 b260 Proprioceptive function

 b265 Touch function

  b270 Sensory functions related to temperature and other stimuli

 b270 Additional sensory functions related to

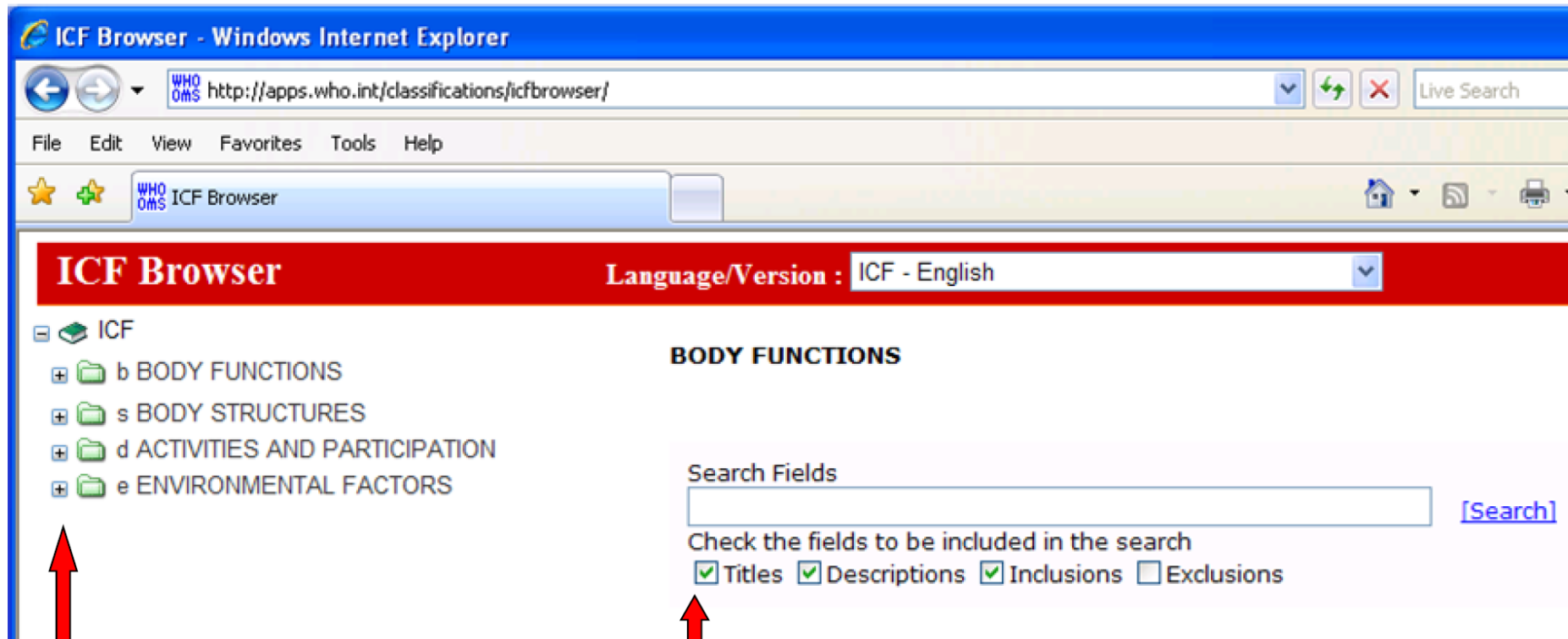
as numbness,

// (b270)

 ICF
  b BODY F
  s BODY S
  d ACTIVI
  e ENVIRC

 ICF
  b BODY
  s BODY
  d ACTIVI
  e ENVIR

ICF Browser Tool



Click on '+' symbol to filter stem/branch/leaf within each component.

or

Enter keyword in search box and check desired fields for domains containing keyword.

ICF

- + b BODY FUNCTIONS
- + s BODY STRUCTURES
- + d ACTIVITIES AND PARTICIPATION
- + e ENVIRONMENTAL FACTORS

BODY FUNCTIONS

Search Fields

pain

Check the fields to be included in the search

☒ Titles ☒ Descriptions ☒ Inclusions ☐ Exclusions

+ e ENVIRONMENTAL FACTORS

b280

Sensation of pain



apps.who.int/classifications/icfbrowser/

110%

ICF

- + b BODY FUNCTIONS
- + s BODY STRUCTURES
- + d ACTIVITIES AND PARTICIPATION
- + e ENVIRONMENTAL FACTORS

Search Results

b28010 Pain in head and neck

b2803

Radiating pain in a dermatome

Limitations with ICF – re outcome assessment

- ▶ Designed to describe impairments in body structure and function, activity limitations and participations restrictions- **NOT other phenomena**
 - ▶ Does not consider abstract or global phenomena –
 - ▶ Safety, expectations, Satisfaction, recovery
 - ▶ QoL considered “not codable”
- ▶ May need many codes and qualifiers to fully describe
 - ▶ How to summarize????

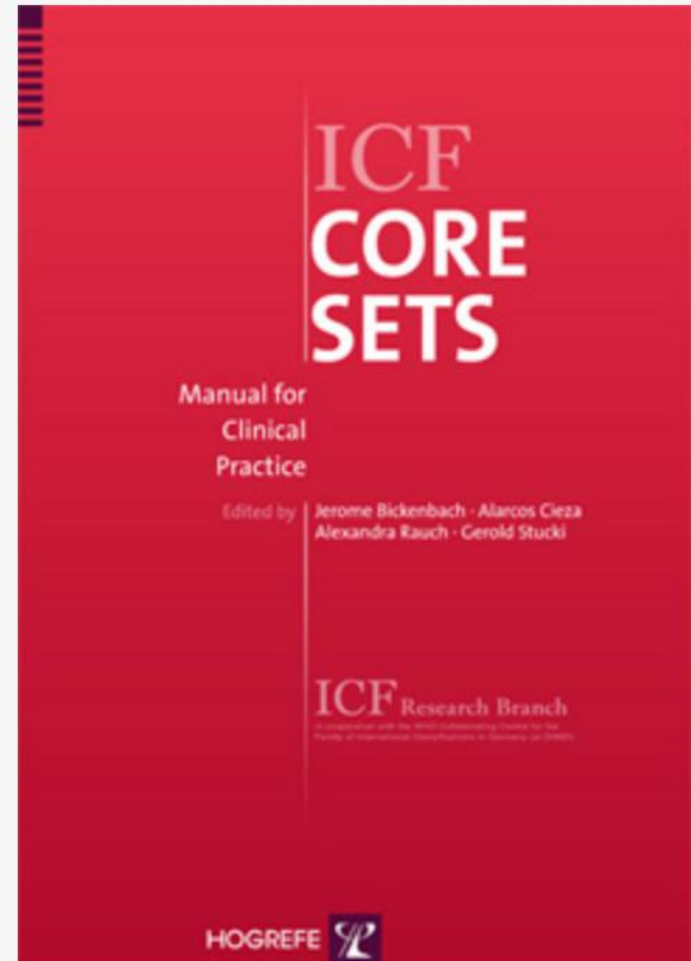
ICF CORE SETS

Manual for Clinical Practice

Bickenbach J, Cieza A, Rauch A, Stucki G (eds)
Hogrefe, Göttingen 2012

This manual includes:

- An introduction to the concepts of functioning and disability.
- A description of the development process of the ICF Core Sets and their purpose.
- An introduction to the application of the ICF Core Sets in clinical practice based on a documentation form and use cases that illustrate the application of the documentation form.
- A CD-ROM including all available ICF Core Sets and the corresponding documentation forms. The documentation forms can be printed and directly applied in practice.



To describe health in patients with XX disorders...

- 📄 Neurological Conditions
- 📄 Cardiovascular and Respiratory Conditions
- 📄 Cancer
- 📄 Mental Health
- 📄 **Musculoskeletal Conditions**
 - 📄 Development of the ICF Core Sets for Ankylosing Spondylitis
 - 📄 ICF Core Set for Chronic Widespread Pain
 - 📄 ICF Core Set for Osteoporosis
 - 📄 ICF Core Set for Osteoarthritis
 - 📄 ICF Core Set for Low Back Pain
 - 📄 ICF Core Set for Rheumatoid Arthritis

Comprehensive Core Set

“Everything that is needed and nothing that is not”

Brief Core Set

“The minimum that is needed”

BRIEF ICF CORE SET for CHRONIC WIDESPREAD PAIN

BODY FUNCTIONS

= physiological functions of body systems (including psychological functions)

b130	Energy and drive functions
	<p>General mental functions of physiological and psychological mechanisms that cause the individual to move towards satisfying specific needs and general goals in a persistent manner.</p> <p><i>Inclusions: functions of energy level, motivation, appetite, craving (including craving for substances that can be abused) and impulse control</i></p> <p><i>Exclusions: consciousness functions (b110); temperament and personality functions (b126); sleep functions (b134); psychomotor functions (b147); emotional functions (b152)</i></p>
b134	Sleep functions
	<p>General mental functions of periodic, reversible and selective physical and mental disengagement from one's immediate environment accompanied by characteristic physiological changes.</p> <p><i>Inclusions: functions of amount of sleeping, and onset, maintenance and quality of sleep; functions involving the sleep cycle, such as in insomnia, hypersomnia and narcolepsy</i></p> <p><i>Exclusions: consciousness functions (b110); energy and drive functions (b130); attention functions (b140); psychomotor functions (b147)</i></p>
b147	Psychomotor functions
	<p>Specific mental functions of control over both motor and psychological events at the body level.</p> <p><i>Inclusions: functions of psychomotor control, such as psychomotor retardation, excitement and agitation, posturing, catatonia, negativism, ambivalence, echopraxia and echolalia; quality of psychomotor function</i></p> <p><i>Exclusions: consciousness functions (b110); orientation functions (b114); intellectual functions (b117); energy and drive functions (b130); attention functions (b140); mental functions of language (b167); mental functions of sequencing complex movements (b176)</i></p>
b152	Emotional functions
	<p>Specific mental functions related to the feeling and affective components of the processes of the mind.</p> <p><i>Inclusions: functions of appropriateness of emotion, regulation and range of emotion; affect; sadness, happiness, love, fear, anger, hate, tension, anxiety, joy, sorrow; lability of emotion; flattening of affect</i></p> <p><i>Exclusions: temperament and personality functions (b126); energy and drive functions (b130)</i></p>
b1602	Content of thought
	<p>Mental functions consisting of the ideas that are present in the thinking process and what is being conceptualized.</p> <p><i>Inclusions: impairments of delusions, overvalued ideas and somatization</i></p>
b280	Sensation of pain
	<p>Sensation of unpleasant feeling indicating potential or actual damage to some body structure.</p> <p><i>Inclusions: sensations of generalized or localized pain in one or more body part, pain in a dermatome, stabbing pain, burning pain, dull pain, aching pain; impairments such as myalgia, analgesia and hyperalgesia</i></p>
b455	Exercise tolerance functions
	<p>Functions related to respiratory and cardiovascular capacity as required for enduring physical exertion.</p> <p><i>Inclusions: functions of physical endurance, aerobic capacity, stamina and fatigability</i></p> <p><i>Exclusions: functions of the cardiovascular system (b410-b429); haematological system functions (b430); respiration functions (b440); respiratory muscle functions (b445); additional respiratory functions (b450)</i></p>
b730	Muscle power functions
	<p>Functions related to the force generated by the contraction of a muscle or muscle groups.</p> <p><i>Inclusions: functions associated with the power of specific muscles and muscle groups, muscles of one limb, one side of the body, the lower half of the body, all limbs, the trunk and the body as a whole; impairments such as weakness of small muscles in feet and hands, muscle paresis, muscle paralysis, monoplegia, hemiplegia, paraplegia, quadriplegia and akinetic mutism</i></p> <p><i>Exclusions: functions of structures adjoining the eye (b215); muscle tone functions (b735); muscle endurance functions (b740)</i></p>
b760	Control of voluntary movement functions
	<p>Functions associated with control over and coordination of voluntary movements.</p> <p><i>Inclusions: functions of control of simple voluntary movements and of complex voluntary movements, coordination of voluntary movements, supportive functions of arm or leg, right left motor coordination, eye hand coordination, eye foot</i></p>

ACTIVITIES AND PARTICIPATION

= execution of a task or action by an individual and involvement in a life situation

d175	Solving problems
	Finding solutions to questions or situations by identifying and analysing issues, developing options and solutions, evaluating potential effects of solutions, and executing a chosen solution, such as in resolving a dispute between two people. <i>Inclusions: solving simple and complex problems</i> <i>Exclusions: thinking (d163); making decisions (d177)</i>
d230	Carrying out daily routine
	Carrying out simple or complex and coordinated actions in order to plan, manage and complete the requirements of day-to-day procedures or duties, such as budgeting time and making plans for separate activities throughout the day. <i>Inclusions: managing and completing the daily routine; managing one's own activity level</i> <i>Exclusion: undertaking multiple tasks (d220)</i>
d240	Handling stress and other psychological demands
	Carrying out simple or complex and coordinated actions to manage and control the psychological demands required to carry out tasks demanding significant responsibilities and involving stress, distraction or crises, such as driving a vehicle during heavy traffic or taking care of many children. <i>Inclusions: handling responsibilities; handling stress and crisis</i>
d430	Lifting and carrying objects
	Raising up an object or taking something from one place to another, such as when lifting a cup or carrying a child from one room to another. <i>Inclusions: lifting, carrying in the hands or arms, or on shoulders, hip, back or head; putting down</i>
d450	Walking
	Moving along a surface on foot, step by step, so that one foot is always on the ground, such as when strolling, sauntering, walking forwards, backwards or sideways. <i>Inclusions: walking short or long distances; walking on different surfaces; walking around obstacles</i> <i>Exclusions: transferring oneself (d420); moving around (d455)</i>
d640	Doing housework
	Managing a household by cleaning the house, washing clothes, using household appliances, storing food and disposing of garbage, such as by sweeping, mopping, washing counters, walls and other surfaces; collecting and disposing of household garbage; tidying rooms, closets and drawers; collecting, washing, drying, folding and ironing clothes; cleaning footwear; using brooms, brushes and vacuum cleaners; using washing machines, driers and irons. <i>Inclusions: washing and drying clothes and garments; cleaning cooking area and utensils; cleaning living area; using household appliances, storing daily necessities and disposing of garbage</i> <i>Exclusions: acquiring a place to live (d610); acquisition of goods and services (d620); preparing meals (d630); caring for household objects (d650); caring for others (d660)</i>
d760	Family relationships
	Creating and maintaining kinship relationships, such as with members of the nuclear family, extended family, foster and adopted family and step-relationships, more distant relationships such as second cousins or legal guardians. <i>Inclusions: parent-child and child-parent relationships, sibling and extended family relationships</i>
d770	Intimate relationships
	Creating and maintaining close or romantic relationships between individuals, such as husband and wife, lovers or sexual partners. <i>Inclusions: romantic, spousal and sexual relationships</i>
d850	Remunerative employment
	Engaging in all aspects of work, as an occupation, trade, profession or other form of employment, for payment, as an employee, full or part time, or self-employed, such as seeking employment and getting a job, doing the required tasks of the job, attending work on time as required, supervising other workers or being supervised, and performing required tasks alone or in groups. <i>Inclusions: self-employment, part-time and full-time employment</i>
d920	Recreation and leisure
	Engaging in any form of play, recreational or leisure activity, such as informal or organized play and sports, programmes of physical fitness, relaxation, amusement or diversion, going to art galleries, museums, cinemas or

Ways ICF used in OM - examples

- ▶ To define construct for item generation
 - ▶ Qualitative data
 - ▶ Quantitative data
- ▶ To define content of current measures
- ▶ To structure link outcomes to Rx plans or CPG recommendations
- ▶ To evaluate CPG recommendations

JHT READ FOR CREDIT ARTICLE #340.

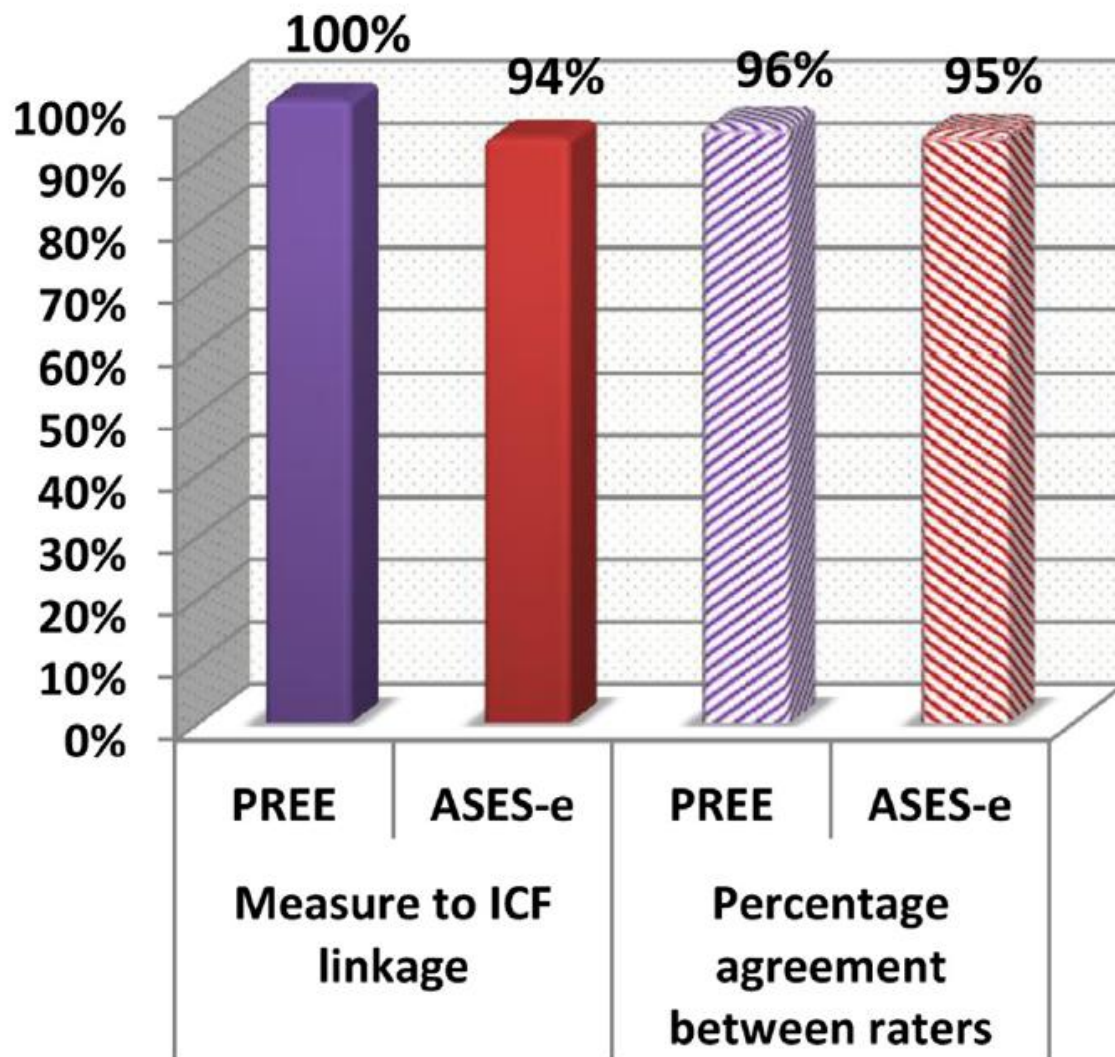
Scientific/Clinical Article

Linking of the Patient Rated Elbow Evaluation (PREE) and the American Shoulder and Elbow Surgeons – Elbow questionnaire (pASES-e) to the International Classification of Functioning Disability and Health (ICF) and Hand Core Sets



Joshua I. Vincent PT, MPT, PhD^{a,b,*}, [Joy C. MacDermid](#) PT, PhD^{b,c}, Graham J.W. King MD, MSc, FRCSC^{b,d}, [Ruby Grewal](#) MD, FRCSC^{b,d}

- ▶ Measure items to ICF Linkage
- ▶ Measure items to Core Set Linkage
- ▶ Measure items to Core Set Unique linkage
- ▶ Core Set Representation
- ▶ Core Set Unique Disability Representation



- Measure to ICF linkage PREE
- Measure to ICF linkage ASES-e
- ▨ Percentage agreement between raters PREE
- ▨ Percentage agreement between raters ASES-e

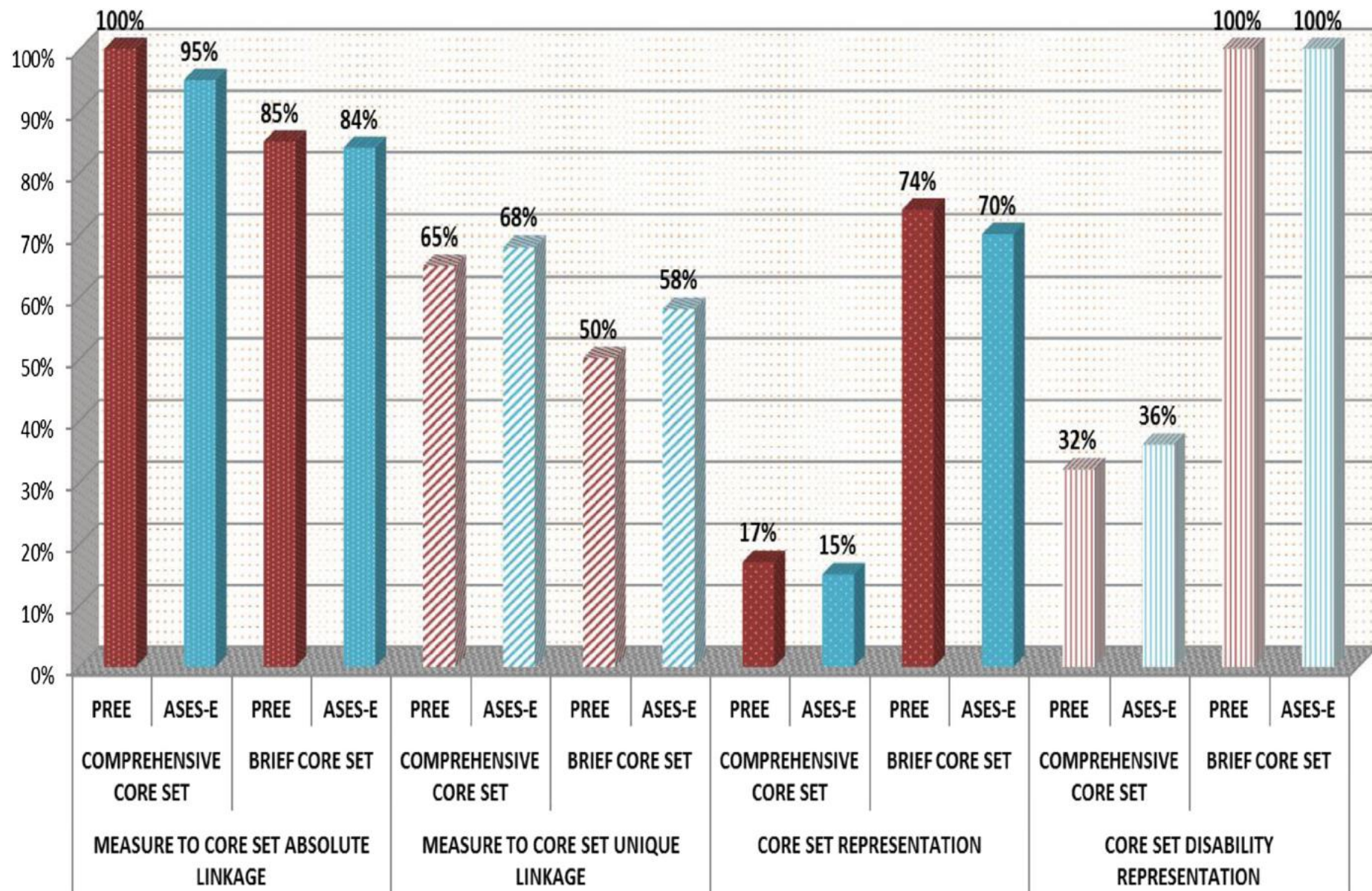


Fig. 2. ICF linkage indicators to define the depth and breadth of linkage between items of the PREE and ASES-e and the ICF core sets.



macdermid icf linkage

All

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About 2,600 results (0.49 seconds)

[\[PDF\] ICF linkage indicators](#)

srs-mcmaster.ca/wp-content/uploads/2015/.../ICF-linkage-indicators_Final-to-Post.pdf ▼

by JC MacDermid - [Related articles](#)

ICF LINKAGE INDICATOR DEFINITIONS. Author: JC **MacDermid**. Most recent update: June 20

Raters can establish the content of an outcome measure ...

What do patients say about participation after DRF?

- ▶ 250 patients
- ▶ PSFS
- ▶ Coded in ICF
- ▶ Submitted



PATIENT SPECIFIC PARTICIPATION SCALE (PS²)

Read by evaluator and completed *at baseline visit*.

Note: Complete prior to the physical examination.

Read at Baseline Assessment

I'm going to ask you to identify the 5 aspects of your life that are most important to you. These aspects may or may not be affected by your current injury. We are interested to know the roles you have in your life and the way you participate in your community. Pick the specific aspects of your life that mean the most to you (not necessarily that you do the most).

Examples: My job as a (list); babysitting my grandchildren, working for the church, vacations, volunteer as a (list), parenting, caring for relative, student, participating in a sport (list), participating in a specific social group, spending time with my family, a hobby (list)

The most important things I participate in are:

1. _____
2. _____
3. _____
4. _____
5. _____

PSPS

- ▶ Patient lists life roles
- ▶ Rates 0-10

Most frequent codes cited

ICF	Participation	Number who listed (%)
d850	Remunerative employment	180 (45)
d760	Family relationships	121 (30)
d920	Recreation and leisure	99 (25)
d9201	Sports	97 (24)
d5701	Maintaining diet and fitness	86 (21)
d660	Assisting others	80 (20)
d9202	Arts and culture	70 (17)
d6505	Taking care of plants, indoors and outdoors	67 (17)
d640	Doing housework	65 (16)


Other methods for content validation

- ▶ ICF linking
- ▶ Expert reviews- relevance and clarity ranking
- ▶ Patient reviews
- ▶ Cognitive interviews
- ▶ Other content coding systems



Neck Pain:

*Clinical Practice Guidelines Linked to
the International Classification of
Functioning, Disability, and Health From
the Orthopaedic Section of the American
Physical Therapy Association*



INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY, AND HEALTH

PRIMARY ICF CODES

Neck Pain With Mobility Deficits

Body functions	b7101	Mobility of several joints
Body structure	s76000	Cervical vertebral column
Activities and participation	d4108	Changing a basic body position, specified as moving the head and neck while looking to the left or to the right

Neck Pain With Headaches

Body functions	b28010	Pain in head and neck
Body structure	s7103 s7104	Joints of head and neck region Muscles of head and neck region
Activities and participation	d4158	Maintaining a body position, specified as maintaining the head in a flexed position, such as when reading a book; or, maintaining the head in an extended position, such as when looking up at a video monitor

Neck Pain With Movement Coordination Impairments

Body functions	b7601	Control of complex voluntary movements
Body structure	s7105	Ligaments and fasciae of head and neck region
Activities and participation	d4158	Maintaining a body position, specified as maintaining alignment of the head, neck, and thorax such that the cervical vertebral segments function in a neutral, or mid-range, position

Neck Pain With Radiating Pain

Body functions	b2804	Radiating pain in a segment or region
Body structure	s1201	Spinal nerves
Activities and participation	d4452	Reaching

Neck Pain With Radiating Pain

Body functions

b28013
b28014
b2803
b7101
b7151
b7305
b7350
b7400
b7601

Pain in back
Pain in upper limb
Radiating pain in a dermatome
Mobility of several joints
Stability of several joints
Power of muscles of the trunk
Tone of isolated muscles and muscle groups
Endurance of isolated muscles
Control of complex voluntary movements

Body structure

s12000
s12001
s1201
s130
s7105
s76000
s76001
s7601
s7602

Cervical spinal cord
Thoracic spinal cord
Spinal nerves
Structure of meninges
Ligaments and fasciae of head and neck region
Cervical vertebral column
Thoracic vertebral column
Muscles of trunk
Ligaments and fasciae of trunk

Activities and participation

d2302
d2400
d4150
d4153
d4154
d4300
d4301
d4302
d4303
d4304
d4305
d4750
d4751
d4752
d6409
d9109
d9209

Completing the daily routine
Handling responsibilities
Maintaining a lying position
Maintaining a sitting position
Maintaining a standing position
Lifting
Carrying in the hands
Carrying in the arms
Carrying on shoulders, hip, and back
Carrying on the head
Putting down objects
Driving human-powered transportation
Driving motorized vehicles
Driving animal-powered transportation
Doing housework, unspecified
Community life, unspecified
Recreation and leisure, unspecified

Descriptive profile, set goals,

IC

When should I question
validity of the tool in
individuals?

validity

?

- ▶ Content mismatch
- ▶ Literacy
- ▶ Translation/cultural issues
- ▶ Gender Issues
- Low or high scores (ceiling/floor effects)

CAUTION
WATCH YOUR
STEP

Neck Disability Index

THIS QUESTIONNAIRE IS DESIGNED TO HELP US BETTER UNDERSTAND HOW YOUR **NECK PAIN** AFFECTS YOUR ABILITY TO MANAGE EVERYDAY -LIFE ACTIVITIES. PLEASE MARK IN EACH SECTION THE **ONE BOX** THAT APPLIES TO YOU.

ALTHOUGH YOU MAY CONSIDER THAT TWO OF THE STATEMENTS IN ANY ONE SECTION RELATE TO YOU, PLEASE MARK THE BOX THAT **MOST CLOSELY** DESCRIBES YOUR PRESENT -DAY SITUATION.

SECTION 1 - PAIN INTENSITY

- ☐ I have no neck pain at the moment.
- ☐ The pain is very mild at the moment.
- ☐ The pain is moderate at the moment.
- ☐ The pain is fairly severe at the moment.
- ☐ The pain is very severe at the moment.
- ☐ The pain is the worst imaginable at the moment.

SECTION 2 - PERSONAL CARE

- ☐ I can look after myself normally without causing extra neck pain.
- ☐ I can look after myself normally, but it causes extra neck pain.
- ☐ It is painful to look after myself, and I am slow and careful
- ☐ I need some help but manage most of my personal care.
- ☐ I need help every day in most aspects of self -care.
- ☐ I do not get dressed. I wash with difficulty and stay in bed.

SECTION 3 – LIFTING

- ☐ I can lift heavy weights without causing extra neck pain.
- ☐ I can lift heavy weights, but it gives me extra neck pain.
- ☐ Neck pain prevents me from lifting heavy weights off the floor but I can manage if items are conveniently positioned, ie. on a table.
- ☐ Neck pain prevents me from lifting heavy weights, but I can manage light weights if they are conveniently positioned
- ☐ I can lift only very light weights.
- ☐ I cannot lift or carry anything at all.

SECTION 4 – READING

- ☐ I can read as much as I want with no neck pain.
- ☐ I can read as much as I want with slight neck pain.
- ☐ I can read as much as I want with moderate neck pain.
- ☐ I can't read as much as I want because of moderate neck pain.
- ☐ I can't read as much as I want because of severe neck pain.
- ☐ I can't read at all.

SECTION 5 – HEADACHES

SECTION 6 – CONCENTRATION

- ☐ I can concentrate fully without difficulty.
- ☐ I can concentrate fully with slight difficulty.
- ☐ I have a fair degree of difficulty concentrating.
- ☐ I have a lot of difficulty concentrating.
- ☐ I have a great deal of difficulty concentrating.
- ☐ I can't concentrate at all.

SECTION 7 – WORK

- ☐ I can do as much work as I want.
- ☐ I can only do my usual work, but no more.
- ☐ I can do most of my usual work, but no more.
- ☐ I can't do my usual work.
- ☐ I can hardly do any work at all.
- ☐ I can't do any work at all.

SECTION 8 – DRIVING

- ☐ I can drive my car without neck pain.
- ☐ I can drive my car with only slight neck pain.
- ☐ I can drive as long as I want with moderate neck pain.
- ☐ I can't drive as long as I want because of moderate neck pain.
- ☐ I can hardly drive at all because of severe neck pain.
- ☐ I can't drive my car at all because of neck pain.

SECTION 9 – SLEEPING

- ☐ I have no trouble sleeping.
- ☐ My sleep is slightly disturbed for less than 1 hour.
- ☐ My sleep is mildly disturbed for up to 1-2 hours.
- ☐ My sleep is moderately disturbed for up to 2-3 hours.
- ☐ My sleep is greatly disturbed for up to 3-5 hours.
- ☐ My sleep is completely disturbed for up to 5-7 hours.

SECTION 10 – RECREATION

- ☐ I am able to engage in all my recreational activities with no neck pain at all.
- ☐ I am able to engage in all my recreational activities with some neck pain.
- ☐ I am able to engage in most, but not all of my recreational

Content Validity Concerns

- ▶ What does it measure?
 - ▶ Pain-related disability
- ▶ Are pain and disability 1 construct?
- ▶ Items generation did not include patients.
 - ▶ Does it capture key patient concerns?



DISABILITIES OF THE ARM, SHOULDER AND HAND

Please rate your ability to do the following activities in the last week by circling the number below the appropriate response.

	NO DIFFICULTY	MILD DIFFICULTY	MODERATE DIFFICULTY	SEVERE DIFFICULTY	UNABLE
1. Open a tight or new jar.	1	2	3	4	5
2. Write.	1	2	3	4	5
3. Turn a key.	1	2	3	4	5
4. Prepare a meal.	1	2	3	4	5
5. Push open a heavy door.	1	2	3	4	5
6. Place an object on a shelf above your head.	1	2	3	4	5
7. Do heavy household chores (e.g., wash walls, wash floors).	1	2	3	4	5
8. Garden or do yard work.	1	2	3	4	5
9. Make a bed.	1	2	3	4	5

Symptom Questions

Please rate the severity of the following symptoms in the last week. *(circle number)*

	NONE	MILD	MODERATE	SEVERE	EXTREME
24. Arm, shoulder or hand pain.	1	2	3	4	5
25. Arm, shoulder or hand pain when you performed any specific activity.	1	2	3	4	5
26. Tingling (pins and needles) in your arm, shoulder or hand.	1	2	3	4	5
27. Weakness in your arm, shoulder or hand.	1	2	3	4	5
28. Stiffness in your arm, shoulder or hand.	1	2	3	4	5



If you don't want
a sarcastic
answer.
then
don't ask
a stupid
question

"The answer depends
on the question"



Reasons for poor item performance or validity

- ▶ May be confusing wording or terms
- ▶ May ask about more than one thing
- ▶ May not apply to a substantial number of people

Item confusion; conflation of
pain and disability

Wordy- difficult to
calibrate

SECTION 2 - PERSONAL CARE

Section

☐

I ca

☐

I ca

☐

Pain

can

☐

Pain

ligh

☐

I ca

☐

I cannot lift or carry anything

- ☐ I can look after myself normally without causing extra neck pain.
- ☐ I can look after myself normally, but it causes extra neck pain.
- ☐ It is painful to look after myself, and I am slow and careful
- ☐ I need some help but manage most of my personal care.
- ☐ I need help every day in most aspects of self -care.
- ☐ I do not get dressed. I wash with difficulty and stay in bed.

Section 8: Driving

- ☐ I can drive my car without any neck pain
- ☐ I can drive my car as long as I want with slight pain in my neck
- ☐ I can drive my car as long as I want with moderate pain in my neck
- ☐ I can't drive my car as long as I want because of moderate pain in my neck
- ☐ I can hardly drive at all because of severe pain in my neck
- ☐ I can't drive my car at all

- ▶ Does not apply to everyone;
- ▶ What if you don't have a car?
- ▶ What if concentration, dizziness or ROM limit driving ?

e: /50 Transform to percentage score $\times 100 =$ %points

ing: For each section the total possible score is 5: if the first statement is marked the section score = 0, if the last statement is marked it = 5. If all t
ons are completed the score is calculated as follows: Example: 16 (total scored)

50 (total possible score) $\times 100 = 32\%$

e section is missed or not applicable the score is calculated: 16 (total scored)

45 (total possible score) $\times 100 = 35.5\%$

imum Detectable Change (90% confidence): 5 points or 10 %points

nted from Journal of Manipulative and Physiological Therapeutics, 14, Vernon, H., & Mior, S., The Neck Disability Index: a study of reliability and validity, 409-415, 1991, wi
ssion from *Elsevier*.

SCORE [50]

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HVERNON@CMCC.CA



I just Want

IT to Work



[LITERATURE REVIEW]

JOY C. MACDERMID, PhD¹ • DAVID M. WALTON, MSc² • SARAH AVERY, MScPT³ • ALANNA BLANCHARD, MScPT³
EVELYN ETRUW, MScPT³ • CHERYL MCALPINE, MScPT³ • CHARLIE H. GOLDSMITH, PhD⁴

Measurement Properties of the Neck Disability Index: A Systematic Review

- ▶ Used in more than 300 studies
- ▶ Substantial number of clinimetric studies usually indicate high reliability, construct validity and acceptable responsiveness
- ▶ Exploratory factors analyses disagree; 1 confirmatory factor analysis says 1 factor
- ▶ Rasch studies indicate not interval level scaling, substantial item mis-fit
- ▶ 2 Rasch studies disagree on how to fix it
- ▶ MOST USED and TESTED - NO SUPERIOR MEASURE ESTABLISHED

Whiplash Disability Questionnaire

WDQ Pinfold et al. (2004)	<ul style="list-style-type: none">– Body functions 6 items– Activity & participation 7 items– Single attribute– Evaluative– Client perspective– Age not specified– WAD popn– Health care setting	BF-Pain, Sleep, energy, attention; A&P – Focusing attention, perform ADL, handle stress handle objects transportation; moving around self care, work, education, sports, socializing
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Concurrent Validation of the DASH and the QuickDASH in Comparison to Neck-Specific Scales in Patients With Neck Pain

Saurabh Mehta, PT, MSc (Rehab),* Joy C. MacDermid, PhD,*†

Lisa C. Carlesso, PT, MSc, FCAMPT,‡ and Colleen McPhee, PT, FCAMPT, MSc (Rehab)*§

Table 3. Ranked-Item Difficulty Analysis for the DASH, QuickDASH, and the NDI

NDI	Mean \pm SD	DASH	Mean \pm SD
Pain intensity	2.33 \pm 1.39	Recreational activities in which you take some force or impact through your arm, shoulder or hand (<i>e.g.</i> , golf, hammering, tennis, etc.)*†	2.96 \pm 1.42
Headaches	2.19 \pm 1.44	Recreational activities in which you move your arm freely*	2.69 \pm 1.47
Sleeping	2.09 \pm 1.45	Garden or do yard work	2.63 \pm 1.47
Reading	2.02 \pm 1.18	Do heavy household chores (<i>e.g.</i> , wash walls, wash floors)†	2.59 \pm 1.56
Recreation	2 \pm 1.36	I feel less capable, less confident or less useful because of my arm, shoulder or hand problem	2.46 \pm 1.63
Lifting	1.86 \pm 1.51	Arm, shoulder or hand pain when you performed any specific activity	2.25 \pm 1.10
Driving	1.68 \pm 0.96	Carry a heavy object (over 10 lbs)	2.21 \pm 1.56
Work	1.40 \pm 1.17	Change a lightbulb overhead	2.06 \pm 1.63
Concentration	1.05 \pm 1.06	Arm, shoulder or hand pain*†	2 \pm 1.18
Personal care (washing,	0.71 \pm 0.99	Weakness in your arm, shoulder or hand	2 \pm 1.22
		Opening a tight jar or container	1.88 \pm 1.54

Use of Outcome Measures in Managing Neck Pain: An International Multidisciplinary Survey

Joy C. MacDermid^{*,1}, David M. Walton², Pierre Côté³, P. Lina Santaguida⁴, Anita Gross⁵ and Lisa Carlesso⁴ and ICON⁶

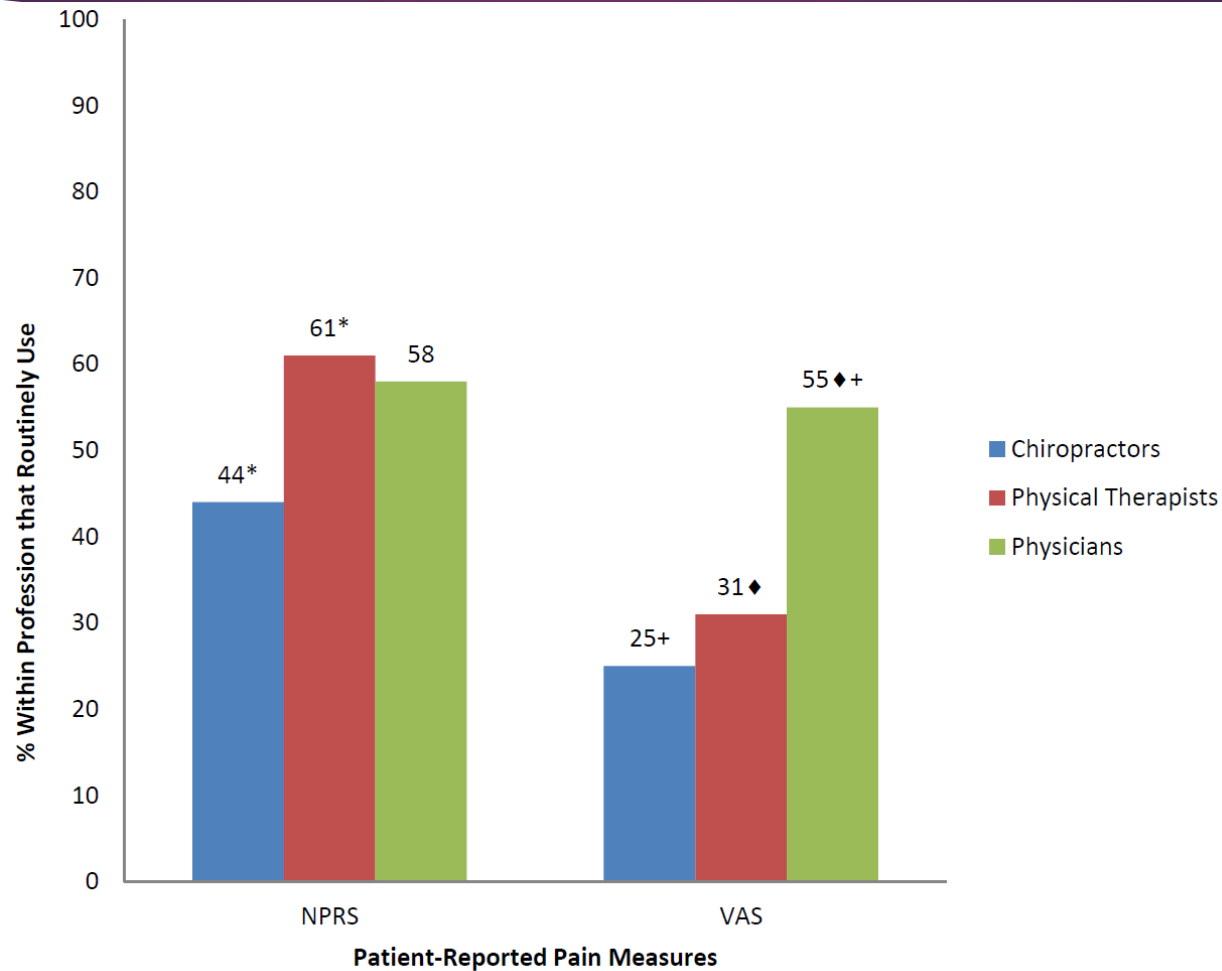
Profession

Chiropractor	44%
Physical Therapist (Manual Therapist)	32% (9%)
Massage Therapist	7%
Physician	8%
Other Profession	6%

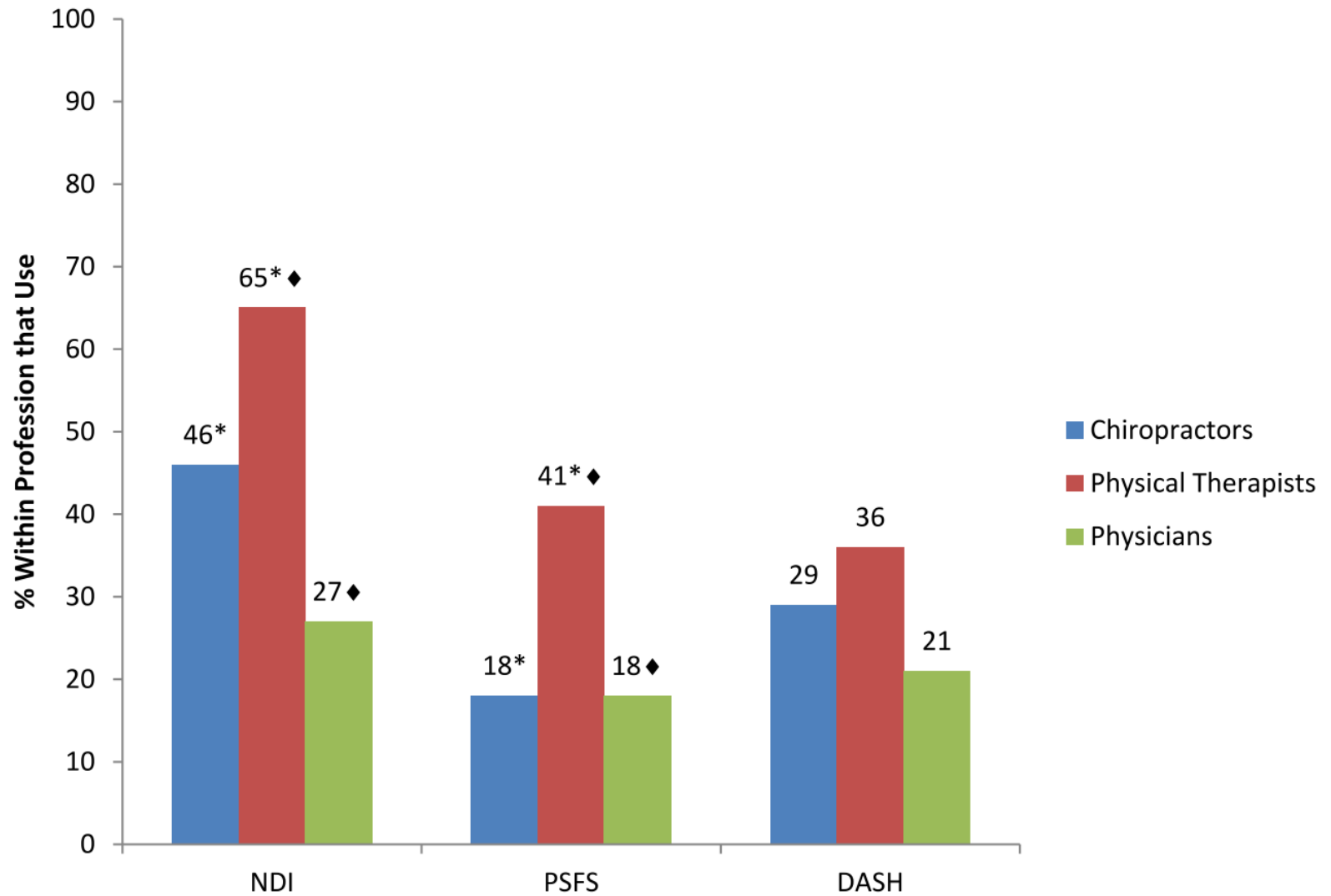
Country

Canada	44%
USA	13%
Denmark	13%
New Zealand	4%
Australia	3%
Germany	3%

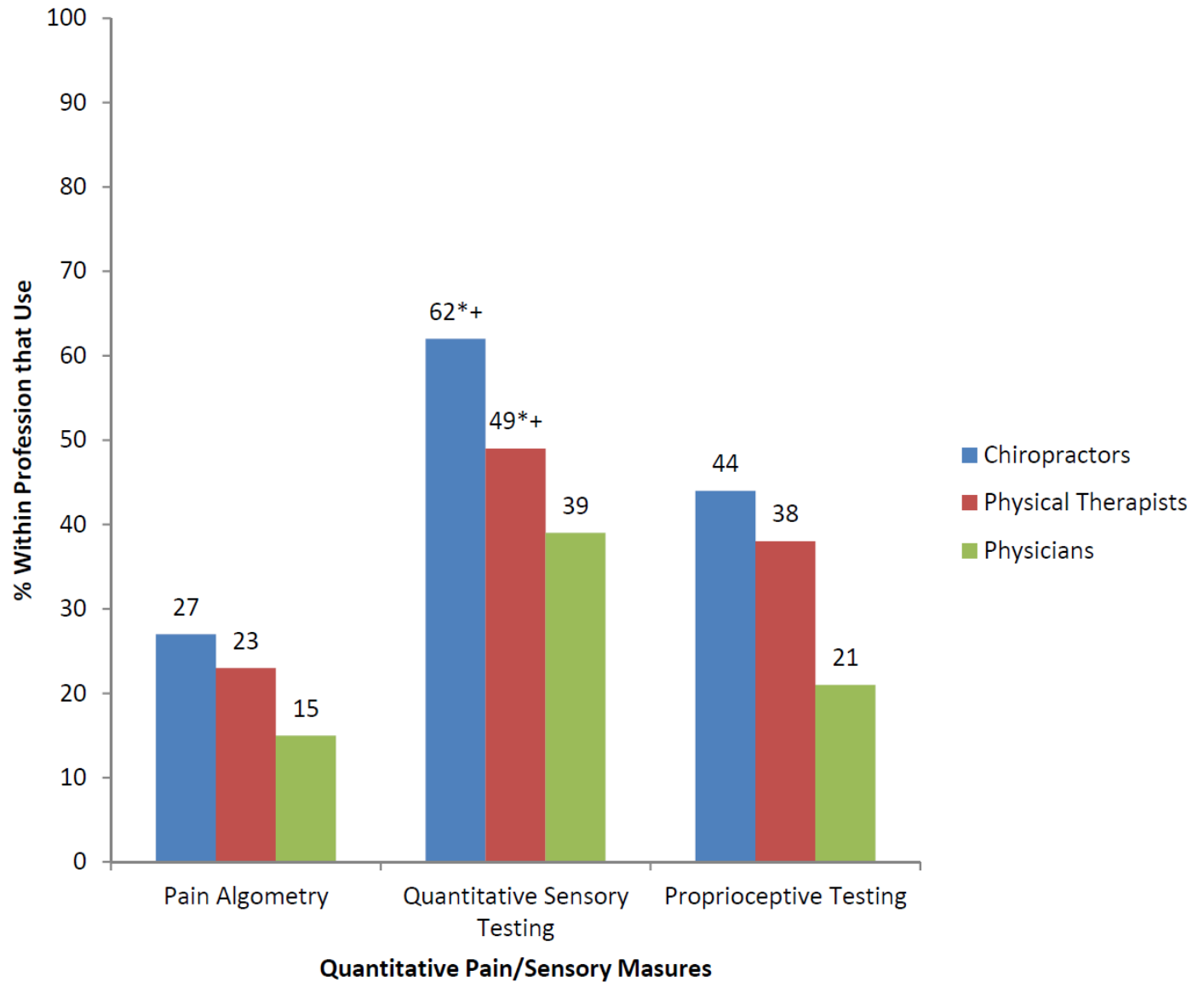
Single item pain intensity



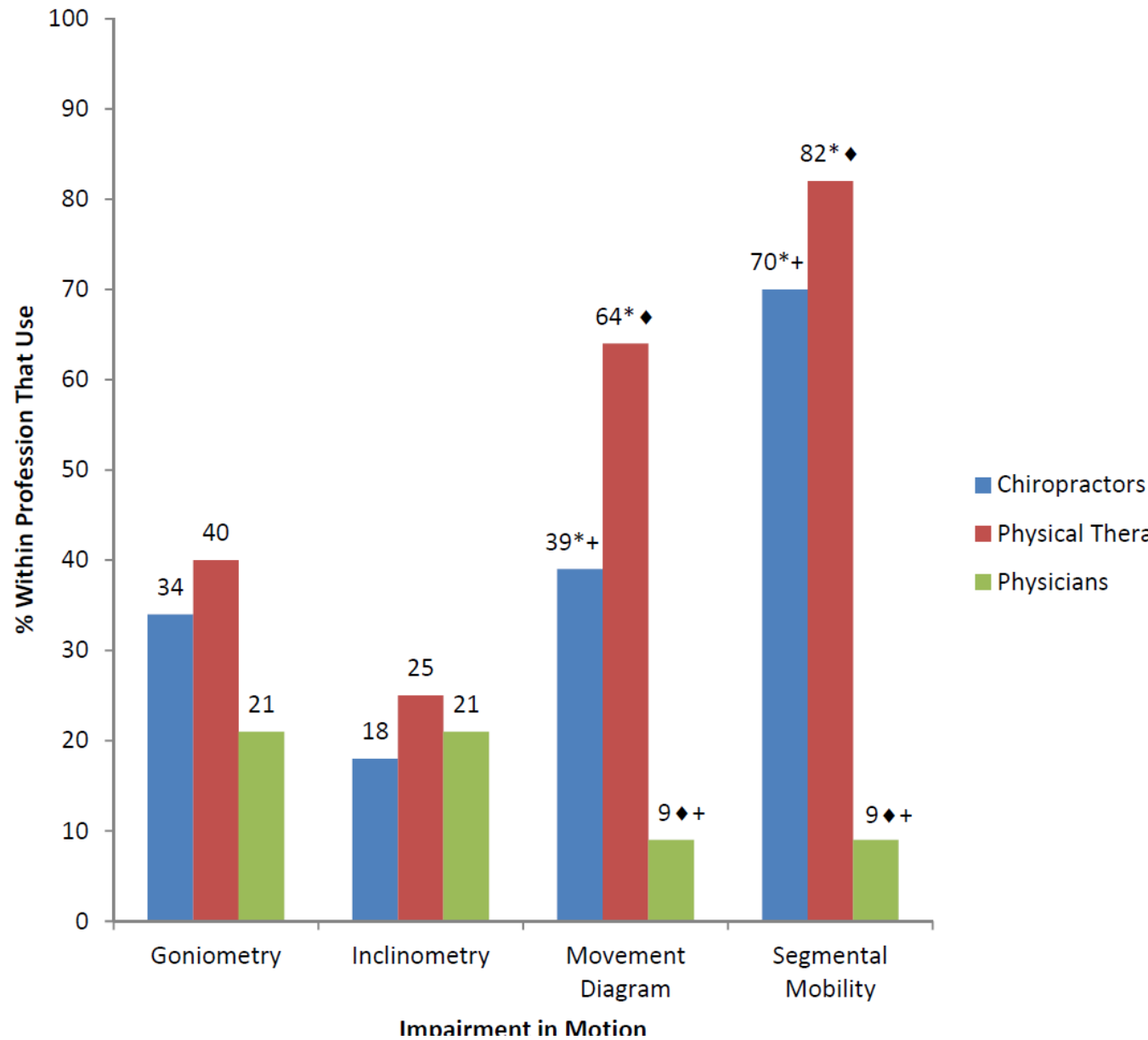
PRO

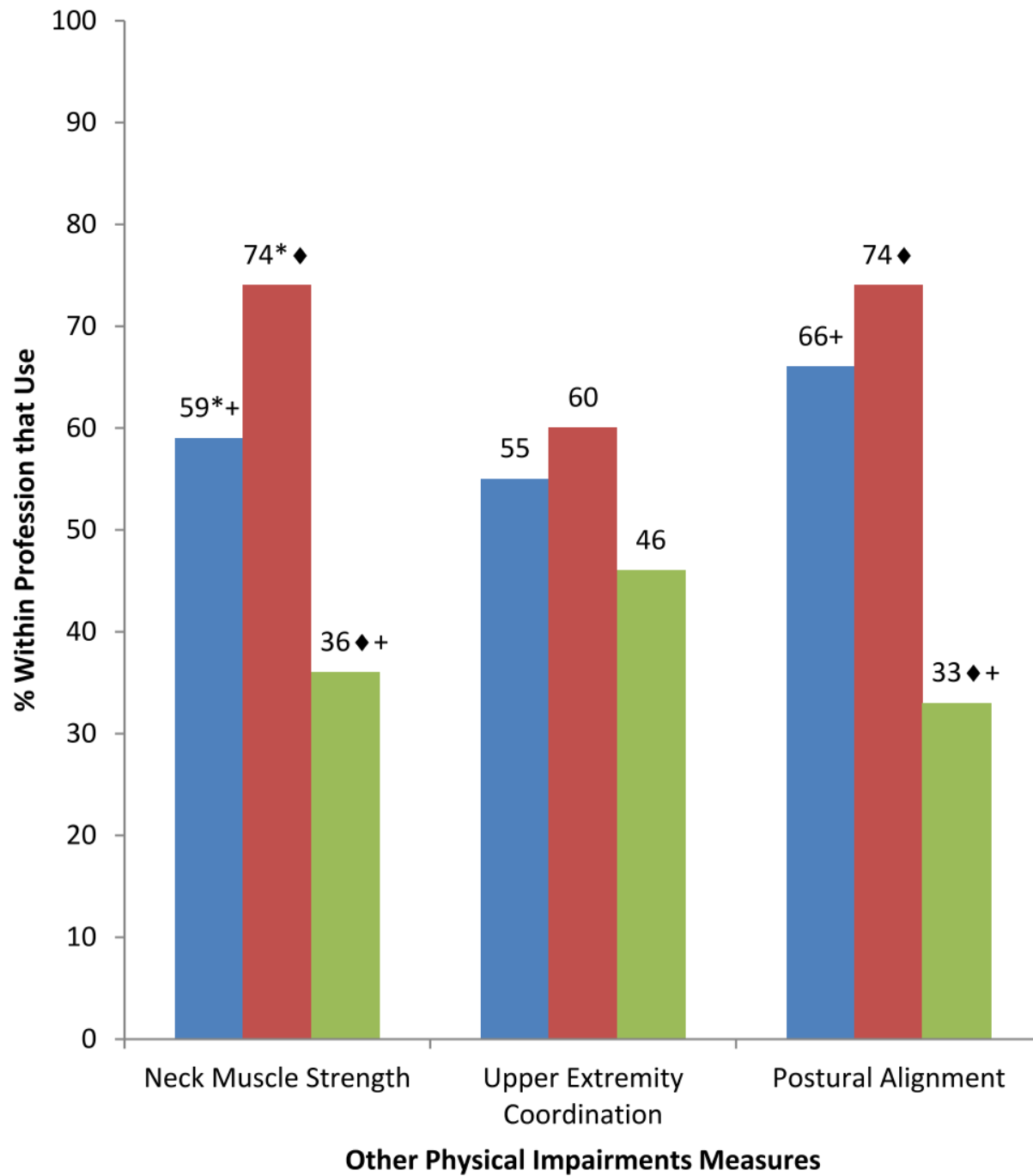


QST



Motion





2 words for developers of OM

**CONTENT
MATTERS.**

Don't crank it out like pasta.

Disability and Rehabilitation, 2009; Early Online, 1–11

CLINICAL COMMENTARY

Recovery from acute injury: Clinical, methodological and philosophical considerations

DAVID MARK WALTON¹, JOY C. MACDERMID^{2,3} & WARREN NIELSON⁴



think
then
do!

What is the Experience of Receiving Health Care for Neck Pain?

Joy C. MacDermid^{*,1}, David M. Walton², Jordan Miller³ and ICON[§]

What Does ‘Recovery’ Mean to People with Neck Pain? Results of a Descriptive Thematic Analysis

David M. Walton^{*,1}, Joy C. MacDermid², Todd Taylor³ and ICON[§]

RESEARCH ARTICLE

A Qualitative Description of Chronic Neck Pain has Implications for Outcome Assessment and Classification

Joy C. MacDermid^{1,2,*}, David M. Walton¹, Pavlos Bobos¹, Margaret Lomotan¹ and Lisa Carlesso⁴

What do whiplash patient say...

- ▶ They like OM
 - ▶ Helps with adherence, motivation
 - ▶ They want some space to add their perspective
 - ▶ Recovery evaluation is complex and some aspects are abstract (not ICF codable)
- ▶ Upper extremity symptoms and function important
 - ▶ Reaching and carrying
 - ▶ Overhead activities
- ▶ Unique symptoms important: dizziness, concentration, parasthesia

Satisfaction and Recovery Index

Below are 10 areas of life that other people in pain have identified as influencing recovery and satisfaction. For each row, please indicate 1: how *important* that area is to you personally, and 2: how *satisfied* you currently feel in that area considering any interference from your injury or symptoms. Note that it is possible to feel satisfied in an area that is not important to you, or to feel dissatisfied in an area that is important to you. Use the following scale:

Importance:

0 1 2 3 4 5 6 7 8 9 10

Not important Moderately Extremely

to me at all important to me important to me

Satisfaction:

0 1 2 3 4 5 6 7 8 9 10



Not satisfied at all Completely satisfied

(complete interference) (no interference)

	Importance (0-10)	Satisfaction (0-10)
1. Meeting your most basic needs (e.g., eating well, good sleep, good personal hygiene, etc...)		
2. Being mentally sharp (i.e., your ability to concentrate, remember or think quickly)		
3. Being physically fit (eg., strong, energetic or flexible) compared to other people of your age and sex		
4. Fulfilling your 'life roles' (e.g., being a spouse, friend, parent, coworker and/or volunteer)		
5. Intimate relationships, whether they be physical relationships or close personal relationships above the level of normal friendship		
6. For validation purposes, place a '4' in the Importance column, and a '6' in the Satisfaction column in this row		
7. Being independent (e.g., making your own decisions and being in control of your own life)		
8. Being spontaneous (doing things without having to plan)		

Name: _____ **Date:** _____

Please place a **mark (X)** in the box that describes how much **difficulty** you had **over the past week** for each of the activities listed below **because of your neck**.

	No difficulty 	A little difficulty	Moderate difficulty	A lot of difficulty	Extreme difficulty	Unable to do at all 
Get washed and dressed						
Lift and carry heavy things						
<u>Read</u> (a book or electronic device)						
Do my usual work						
Go for long drives (in a car, bus, train or other transportation)						



Do my usual recreation or sports						
Concentrate on tasks						
Sleep in my usual position						
Place something on a high shelf						
Do overhead work (like change light bulbs, wash walls)						

Are there other things you want to share about difficulties you have because of your neck pain?

World Health Organization (WHO)

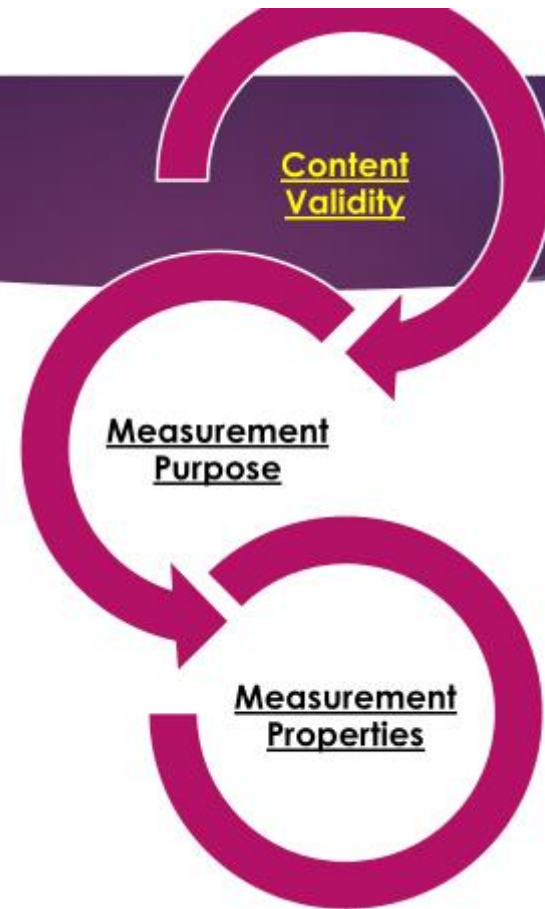
ICF Resources

- ICF home page: www.who.int/classifications/icf/
- ICF Training Beginner's Guide (18 pages)
 - At ICF home page, click on 'Application and Training Tools link in the MORE INFORMATION section. The full text link is in the TRAINING MATERIALS section.
- International Classification of Functioning, Disability and Health: ICF (299 pages):
http://www.handicapincifre.it/documenti/ICF_18.pdf
 - Comprehensive ICF manual.
- ICF Research Branch: www.icf-research-branch.org
 - Information about ongoing ICF research and publications including the development of ICF Core Sets.
- ICF Online: Contains interactive ICF Browser tool:
<http://apps.who.int/classifications/icfbrowser/>
 - Can search all ICF categories by the stem/branch/leaf scheme within each component or by keyword (next slide).

<https://www.google.com.au/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0ahUKEwiFtdeJ3dbTAhUOh7wKHe0YATEQFgg0MAM&url=http%3A%2F%2Fwww.aihw.gov.au%2FWorkArea%2FDownloadAsset.aspx%3Fid%3D6442455729&usq=AFQjCNHoQ6rlgksZSR4CoREbc-6cOnA2Kg&cad=rja>

ICF Australian User Guide

Version 1.0



Think Thrice, Measure
Twice, Cut Once.