

Online supplement to: A Systemic Literature Review on the Application of Rasch Analysis in Musculoskeletal Disease — A Special Interest Group Report of OMERACT 11;

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Supplementary Table 1. Diagnosis of patient groups, instruments evaluated and Rasch applications of the included articles.

First authors	Year	Diagnosis	Instrument Name	New/existing Instrument	Methodology
<b>Rheumatologic Diagnosis (N=65)</b>					
Covic T. <sup>[5]</sup>	2012	RA	Hospital Anxiety and Depression Scale (HADS), Depression Anxiety & Stress Scale (DASS)	Existing	2
Woodburn J. <sup>[6]</sup>	2011	RA	Foot Impact Scale for Rheumatoid Arthritis (FIS-RA)	Existing	2
Niedermann K. <sup>[7]</sup>	2011	RA	Joint Protection Self-Efficacy Scale (JPSES)	New	1
Ndosi M. <sup>[8]</sup>	2011	RA	Educational Needs Assessment Tool (ENAT)	Existing	2
Katz PP. <sup>[9]</sup>	2011	RA	Short Form of the Valued Life Activities Disability Questionnaire (S-VLA)	New	1
Tang K. <sup>[10]</sup>	2011	RA	Work Instability Scale for Rheumatoid Arthritis (RA-WIS)	Existing	4
Tang K. <sup>[11]</sup>	2011	RA	Work Instability Scale for Rheumatoid Arthritis (RA-WIS)	Existing	2
McTaggart-Cowan HM. <sup>[12]</sup>	2010	RA	Construct Rheumatoid Arthritis Health States	New	4
Paulsen T. <sup>[13]</sup>	2010	RA	Measure of Activity Performance of the Hand (MAP-hand)	New	1
Gilworth G. <sup>[14]</sup>	2009	RA	Work Instability Scale for Rheumatoid Arthritis (RA-WIS)	Existing	2
Cieza A. <sup>[15]</sup>	2009	RA	International Classification of Functioning, Disability and Health (ICF) category interval scale for energy and drive functions	Existing	4
Covic T. <sup>[16]</sup>	2009	RA	Center for Epidemiological Studies Depression (CES-D) scale, Hospital Anxiety and Depression Scale (HADS)	Existing	2
Ten Klooster PM. <sup>[17]</sup>	2008	RA	Health Assessment Questionnaire (HAQ) disability index (DI), HAQ-II	Existing	2
Chogle AR. <sup>[18]</sup>	2008	RA	Health Assessment Questionnaire (HAQ), Short Form 36 Physical Function (SF-PF)	Existing	2
Uhlig T. <sup>[19]</sup>	2007	RA	ICF core set for RA	Existing	2
Durez P. <sup>[20]</sup>	2007	RA	Manual ability for adults with upper limb impairments (ABILHAND)	New	2
Covic T. <sup>[21]</sup>	2007	RA	Center for Epidemiologic Studies-Depression scale (CES-D)	Existing	2
Niedermann K. <sup>[22]</sup>	2007	RA	German version of the Joint Protection Behavior Assessment (D-JPBA-S)	Existing	2
Martin M. <sup>[23]</sup>	2007	RA	Modified health assessment questionnaire (MHAQ)	New	1
Chiou CF. <sup>[24]</sup>	2006	RA	Multiattribute preference weight functions (MAPWF)	New	1

Chiou CF. [25]	2006	RA	Revised Cedars-Sinai Health-related Quality of Life for Rheumatoid Arthritis Instrument (CSHQ-RA)	New	2
Tanmaru M. [26]	2006	RA	Rheumatoid Arthritis Quality of Life scale (RAQoL)	Existing	2
Helliwell P. [27]	2005	RA	Foot Impact Scale (FIS)	New	1
Kucukdeveci AA. [28]	2004	RA	Health Assessment Questionnaire (HAQ)	Existing	4
Wolfe F. [29]	2004	RA, OA, fibromyalgia	Short Arthritis Assessment Scale (SAS)	New	1
Wolfe F. [30]	2004	RA, OA, fibromyalgia	Revised Health Assessment Questionnaire (HAQ-II)	New	1
Wolfe F. [31]	2003	RA, OA, fibromyalgia	Regional Pain Scale (RPS)	New	1
Gilworth G. [32]	2003	RA	Work Instability Scale (WIS)	New	1
Kutlay S. [33]	2003	RA	Rheumatoid Arthritis Quality of Life scale (RAQoL)	Existing	2
Sheehan TJ. [34]	2001	RA	Health Assessment Questionnaire (HAQ)	Existing	4
Wolfe F. [35]	2001	RA	Health Assessment Questionnaire (HAQ)	Existing	2
Wolfe F. [36]	2000	RA	Short erosion scale (SES)	New	1
Wolfe F. [37]	1999	RA, OA, fibromyalgia	Western Ontario MacMaster Questionnaire (WOMAC)	Existing	2
Penta M. [38]	1998	RA	Manual ability for adults with upper limb impairments (ABILHAND)	New	1
Nordenskiöld U. [39]	1996	RA	Evaluation of Daily Activities Questionnaire (EDAQ)	New	2
Tennant A. [40]	1996	RA, other arthritis (mainly OA)	Health Assessment Questionnaire (HAQ)	Existing	2
Franchignoni F. [41]	2012	OA (knee, hip)	Lequesne's algofunctional index (LAI) - knee, hip	Existing	2
Goetz C. [42]	2011	OA	Osteoarthritis of knee and hip quality of life (OAKHQOL)	Existing	2
Haugen IK. [43]	2011	OA (hand)	Australian/Canadian (AUSCAN) index, Arthritis Impact Measurement Scale 2 (AIMS-2), Functional Index of hand osteoarthritis (FIHOA)	Existing	2
Tang K. [44]	2010	OA	Work Instability Scale for Rheumatoid Arthritis (RA-WIS)	Existing	2
Keenan AM. [45]	2008	OA	Osteoarthritis Quality of Life (OAQOL)	New	1
Davis AM. [46]	2008	OA (hip)	Hip disability and Osteoarthritis Outcome Score-Physical Function Shortform (HOOS-PS)	New	1
Rothenfluh DA. [47]	2008	OA (hip)	12-item Western Ontario MacMaster Questionnaire (WOMAC)	Existing	2
Perruccio AV. [48]	2008	OA (knee)	Knee injury and Osteoarthritis Outcome Score-Physical Function Short-form (KOOS-PS)	New	1
Conaghan PG. [49]	2007	OA (knee)	Oxford knee scale (OKS)	Existing	2
Conaghan PG. [50]	2006	OA (knee)	Whole-organ magnetic resonance imaging scoring system (WORMS)	New	2

Roorda LD. [51]	2004	OA	Western Ontario MacMaster Questionnaire (WOMAC)	Existing	2
O'Malley KJ. [52]	2003	OA (knee)	Joint-Specific Multidimensional Assessment of Pain (J-MAP)	New	1
Ryser L. [53]	1999	OA (hip, knee)	German Western Ontario MacMaster Questionnaire (WOMAC)	Existing	2
El Miedany Y. [54]	2011	AS	Combined ankylosing spondylitis questionnaire-functional impairment (CASQ-FI), Combined ankylosing spondylitis questionnaire-quality of life (CASQ-QOL)	New	1
Haywood KL. [55]	2010	AS	Evaluation of Ankylosing Spondylitis Quality of Life (EASiQoL)	New	1
Gilworth G. [56]	2009	AS	Work instability scale for Ankylosing Spondylitis (AS-WIS)	New	1
Rauch A. [57]	2009	AS, RA	ICF core sets for AS and RA	Existing	2
Doward LC. [58]	2003	AS	Quality of Life instrument specific to Ankylosing Spondylitis (ASQOL)	New	1
Leung YY. [59]	2008	PsA	Short Form 36 (SF-36) physical functioning subscale (PF), Health Assessment Questionnaire (HAQ), Bath Ankylosing Spondylitis Functional Index (BASFI), Dougados Functional Index (DFI)	Existing	2
Taylor WJ. [60]	2007	PsA, RA	Health Assessment Questionnaire (HAQ) disability index (DI) and Short Form 36 (SF-36) physical functioning subscale (PF)	Existing	2
McKenna SP. [61]	2004	PsA	Quality of Life instrument specific to Psoriatic Arthritis (PsAQoL)	New	1
Pouchot J. [62]	2004	Juvenile arthritis	Children Health Assessment Questionnaire (CHAQ)	Existing	2
Tennant A. [63]	2001	Juvenile arthritis	Children Health Assessment Questionnaire (CHAQ)	Existing	2
Taylor WJ. [64]	2008	Gout	Health Assessment Questionnaire disability index (HAQ-DI)	Existing	2
Leong KP. [65]	2005	SLE	Systemic lupus erythematosus-specific quality-of-life instrument (SLEQOL)	New	1
Brunner HI. [66]	2003	SLE	Systemic Lupus International Collaborating Clinics/American College of Rheumatology Disease Damage Index (SLICC/ACR-DI)	Existing	2
Doward LC. [67]	2009	SLE	Quality-of-life instrument specific to systemic lupus erythematosus (L-QoL)	New	1
Vanthuyne M. [68]	2009	Systemic Sclerosis	Systemic sclerosis-adapted manual ability for adults with upper limb impairments (ABILHAND)	New	2
Gothwal VK. [59]	2010	Sjogren's Syndrome	McMonnies Questionnaire	Existing	2

## General Musculoskeletal Diagnosis (N=45)

- Unspecified

Koller B. [70]	2011	MSK disorder, work related	German version of the Worker Role Interview, WRI (WRI-G 10.0)	Existing	2
Hung M. [71]	2011	MSK disorder, unspecified	Patient-reported outcomes measurement information system (PROMIS) physical function item bank v1 (PPFIB)	Existing	2

Medina-Mirapeix F. [72]	2011	MSK disorder, unspecified	Mobility activity measure	New	1
Chen CC. [73]	2010	MSK disorder, unspecified	Manual ability measure 36 (MAM-36)	New	2
Pallant JF. [74]	2007	MSK disorder, unspecified	Hospital Anxiety and Depression Scale (HADS)	Existing	4
Grill E. [75]	2009	MSK disorder, unspecified	International Classification of Functioning, Disability and Health (ICF) Core Set for Musculoskeletal Conditions	Existing	4
Gilworth G. [76]	2007	MSK disorder, unspecified	Nurse-Work Instability Scale (Nurse-WIS)	New	1
Young NL. [77]	2000	MSK disorder, unspecified	Activities Scale for Kids (ASK)	Existing	2
Baker JG. [78]	1997	MSK disorder	Medical Rehabilitation Follow Along (MRFA): musculoskeletal, neurological and multiple sclerosis, cardiac and pulmonary forms	New	2

• **Pain In Body Part**

Farin E. [79]	2012	Pain (low back)	Communication behavior, Kommunikationsverhalten (KOVA)	New	1
Bostan C. [80]	2012	Pain (low back), breast cancer, stroke	International Classification of Functioning, Disability and Health (ICF) Checklist	Existing	4
Hall AM. [81]	2012	Pain (low back)	Working Alliance Inventory Theory of Change Inventory (WATOICI)	Existing	2
Stuge B. [82]	2011	Pain (pelvic girdle, pregnancy related)	Pelvic Girdle Questionnaire (PGQ)	New	1
Searle RD. [83]	2011	Pain (low back pain, OA pain, limb pain)	Leeds Assessment of Neuropathic Symptoms and Signs (LANSS)	Existing	2
Parkitny L. [84]	2011	Pain (low back)	Depression, anxiety and stress scale (DASS-21)	Existing	2
Oztuna D. [85]	2011	Pain (low back)	ICF core set for low back pain	Existing	2
Hilfiker R. [86]	2009	Pain (low back)	ICF core set for low back pain	New	2
Davidson M. [87]	2009	Pain (low back)	Roland Morris Disability Questionnaire	Existing	2
Roe C. [88]	2009	Pain (low back)	ICF core set for low back pain	New	2
Van Der Velde G. [89]	2009	Pain (neck)	Neck disability index (NDI)	Existing	2
Elhan AH. [90]	2008	Pain (low back)	A CAT model for measuring disability in low back pain	New	3
Davidson M. [91]	2008	Pain (low back)	Oswestry Disability Questionnaire (ODQ)	Existing	2
Siqueira FB. [92]	2007	Pain (low back)	Escala Tampa para Cinesiofobia (ETC)	Existing	2
Karp JF. [93]	2008	Pain (knee, low back)	Geriatric depression scale (GDS)	Existing	2
Damsgard E. [94]	2007	Pain (low back & wide spread)	Tampa Scale of Kinesiophobia (TSK)	Existing	2
Veloza CA. [95]	2006	Pain (low back)	Occupational Rehabilitation Data Base (ORDB) functional capacity instrument	New	1
Davidson M. [96]	2004	Pain (low back)	Back specific Short Form-36 Physical Functioning Scale (SF-36 PF)	New	1

Garratt AM. [97]	2003	Pain (low back)	Roland Disability Questionnaire (RDQ)	Existing	2
Page SJ. [98]	2002	Pain (low back)	Revised Oswestry Disability Questionnaire (RODQ)	Existing	2
White LJ. [99]	2002	Pain (low back)	Oswestry Low Back Pain Disability Questionnaire (Oswestry)	Existing	2
Kucukdeveci AA. [100]	2001	Pain (low back)	Roland-Morris Disability Questionnaire (RMDQ)	Existing	2
Tesio L. [101]	1997	Pain (low back)	Back Illness Pain and Disability 9-Item Scale (BACKILL)	New	1
McArthur DL. [102]	1991	Pain (low back)	Functional Assessment Screening Questionnaire	Existing	4
Boeckstyns M.E.H. [103]	1987	Pain (knee)	Knee pain questionnaire	New	1
<ul style="list-style-type: none"> <li>• <b>Arthritis Unspecified</b></li> </ul>					
Davis AM. [104]	2003	Arthritis (hip, knee)	Western Ontario MacMaster Questionnaire (WOMAC)	Existing	2
Hibbard JH. [105]	2005	Arthritis, unspecified	Patient Activation Measure (PAM)	New	1
<ul style="list-style-type: none"> <li>• <b>Impairment Of Body Part</b></li> </ul>					
Chen CC. [106]	2005	Body part impairment (hand)	Manual ability measure (MAM-16)	New	1
Hart DL. [107]	2005	Body part impairment (lower limb)	Lower extremity functional status (LEFS)	Existing	3
Hart DL. [108]	2006	Body part impairment (shoulder)	Flexilevel Scale of Shoulder Function (Flex-SF)	Existing	3
Cook KF. [109]	2003	Body part impairment (shoulder)	Flexilevel Scale of Shoulder Function (Flex-SF)	New	1
Hart DL. [110]	2006	Body part impairment (spine)	Lumbar spine specific computerized adaptive test (CAT)	New	3
Simone A. [111]	2011	Body part impairment (upper limb)	Manual ability for adults with upper limb impairments (ABILHAND)	Existing	2
Franchignoni F. [112]	2011	Body part impairment (upper limb)	Short measure of physical function and symptoms related to upper-limb musculoskeletal disorders (QuickDASH)	Existing	2
Franchignoni F. [113]	2010	Body part impairment (upper limb)	Disability of the Arm, Shoulder and Hand (DASH)	Existing	2
Lehman LA. [114]	2010	Body part impairment (upper limb)	Disability of the Arm, Shoulder and Hand (DASH), UEFI	Existing	2
Beaton DE. [115]	2005	Body part impairment (upper limb)	Short measure of physical function and symptoms related to upper-limb musculoskeletal disorders (QuickDASH)	New	1
<ul style="list-style-type: none"> <li>• <b>Orthopedics Diagnosis</b></li> </ul>					
Veloza CA. [116]	1999	Low back injuries	Worker Role Interview (WRI)	Existing	2
Comins J. [117]	2008	Anterior cruciate ligament (ACL) reconstruction	Knee injury and Osteoarthritis Outcome Score (KOOS)	Existing	2

Ko Y. <sup>[118]</sup>	2009	Total knee replacement	Oxford Knee Score (OKS)	Existing	2
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Methodology: 1 = Development of new instrument; 2 = Evaluation of psychometric properties of existing instruments, including cross-cultural adaptations; 3 = Construction of item bank and/or computer adaptive test; 4 = Teaching or methodology papers.

AS: ankylosing spondylitis; OA : osteoarthritis; PsA: psoriatic arthritis; RA: rheumatoid arthritis,

MSK: musculoskeletal