

Table II. Classification methodology (substantial changes underlined)*A. Clinical Physical and Rehabilitation Medicine Sciences*

Description: the clinical rehabilitation Sciences study how to provide best care with the goal of enabling people with health conditions experiencing or likely to experience disability to achieve and maintain optimal functioning in interaction with their immediate environment. It contains clinical research on best care including guidelines and standards, organization and quality management. No. A.1. to A.5. relate to specific health conditions; A.6. to A.11. to functioning issues and related rehabilitation goals

A.1. Pain^a

- A.1.1. Acute pain
- A.1.2. Chronic generalized pain syndromes (including fibromyalgia)
- A.1.3. Complex regional pain syndromes
- A.1.4. Miscellaneous

A.2. Musculoskeletal conditions

- A.2.1. Inflammatory joint diseases (e.g. rheumatoid arthritis, ankylosing spondylitis)
- A.2.2. Degenerative joint diseases (e.g. osteoarthritis)^b
- A.2.3. Bone diseases (e.g. osteoporosis)
- A.2.4. Local and regional pain syndromes of the neck and upper extremity (including enthesopathy, tendinitis and others)
- A.2.5. Local and regional pain syndromes of the pelvis and lower extremity (including enthesopathy, tendinitis and others)
- A.2.6. Back pain and spine disorders
- A.2.7. Sports injury
- A.2.8. Miscellaneous

A.3. Health conditions of the nervous system

- A.3.1. Stroke
- A.3.2. Traumatic brain injury
- A.3.3. Spinal cord injury and other spinal cord diseases
- A.3.4. Autoimmune and inflammatory neurological conditions (e.g. multiple sclerosis)
- A.3.5. Neurodegenerative diseases (e.g. Parkinson's disease, dementia)
- A.3.6. Peripheral nerve injury
- A.3.7. Neuromuscular disorders
- A.3.8. Vegetative states, minimally conscious and low awareness states
- A.3.9. Miscellaneous

A.4. Mental health conditions

- A.4.1. Anxiety, depression, bipolar disorders
- A.4.2. Learning disabilities
- A.4.3. Addiction disorder
- A.4.4. Other mental health conditions

A.5. Internal medicine and related conditions

- A.5.1. Heart and cardiovascular system
- A.5.2. Diseases of the lymphatic system
- A.5.3. Pulmonary diseases
- A.5.4. Oro-laryngeal-pharyngeal diseases
- A.5.5. Metabolic disorders (e.g. obesity, diabetes mellitus)
- A.5.6. Cancer
- A.5.7. Infectious diseases
- A.5.8. Skin disorder and allergies
- A.5.9. Uro-gynaecological disorders (including bladder and bowel disorders)
- A.5.10. Miscellaneous

A.6. Post-surgery and post-traumatic rehabilitation^c

- A.6.1. Multiple trauma
- A.6.2. Musculoskeletal injury, bone fractures
- A.6.3. Reconstructive surgery (e.g. tendon-transfer surgery)
- A.6.4. Burn injury
- A.6.5. Organ transplantation
- A.6.6. Joint arthroplasty/joint replacement
- A.6.7. Limb amputation
- A.6.8. Miscellaneous

A.7. Rehabilitation for children and youth

- A.7.1. Developmental disorders
- A.7.2. Cerebral palsy
- A.7.3. Spina bifida
- A.7.4. Traumatic brain injury in children
- A.7.5. Juvenile rheumatoid arthritis
- A.7.6. Infectious diseases in children and youth
- A.7.7. Autism and other mental disorders in children (including attention deficit disorder)
- A.7.8. Peripheral nerve injury
- A.7.9. Neuromuscular disorders
- A.7.10. Miscellaneous

A.8. Rehabilitation for people with old age^d

- A.8.1. Dementia
- A.8.2. Frailty
- A.8.3. Sarcopenia
- A.8.4. Mood dysfunction in the elderly
- A.8.5. Risk of falls in the elderly
- A.8.6. Other geriatric conditions

A.9. Rehabilitation for rare (orphan) diseases^e

Table II. *cont*

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- A.10. Rehabilitation addressing to specific functioning issues
 - A.10.1. Visual impairment and blindness
 - A.10.2. Auditory impairment and deaf
 - A.10.3. Speech and language dysfunction(including mute)
 - A.10.4. Sensory and motor control (including postural control, balance)
 - A.10.5. Management of spasticity
 - A.10.6. Management of hemiplegia and paraplegia
 - A.10.7. Management of dysphagia
 - A.10.8. Respiratory impairment (incl. management of patients with artificial ventilation and weaning)
 - A.10.9. Malnutrition in rehabilitation
 - A.10.10. Sphincter dysfunction (including incontinence)
 - A.10.11. Management of wound and pressure sores
 - A.10.12. Management of fatigue and sleep disorders
 - A.10.13. Rehabilitation of disability-related mental dysfunction (e.g. depression, anxiety)
 - A.10.14. Sexual functioning in people with disability and chronic health conditions
 - A.10.15. Other specific functions
 - A.11. Sports rehabilitation
 - A.12. Miscellaneous

B. Biosciences in Rehabilitation

Description: the Biosciences in rehabilitation are basic sciences that aim to explain body injury, adaptation and repair from the molecular to the cellular, organ system and organism level; and to identify targets for biomedical interventions to improve body functions and structures.

- B.1. Mechanisms of tissue injury (e.g. inflammation, repetitive strain) and development of organ dysfunction (e.g. atrophy, spasticity, chronic pain)
- B.2. Cell and tissue adaptation and mal-adaptation (e.g. plasticity, molecular mechanisms and mediators)
- B.3. Autonomous regulation (incl. HPA-Axis, hormonal regulation systems)
- B.4. Biological mechanism of interventions (e.g. pain relief, motor learning)
- B.5. Miscellaneous

C. Biomedical Rehabilitation Sciences and Engineering

Description: the Biomedical rehabilitation sciences and engineering are applied sciences that study diagnostic measures and interventions including physical modalities suitable to minimize impairment, control symptoms and to optimize people's capacity.

- C.1. Physical and Rehabilitation Medicine (PRM) diagnostics (e.g. cardio-vascular functions and physical endurance, lung function testing, or imaging techniques) as related to organ systems and body functions (based on the first level of the International Classification of Functioning, Disability and Health (ICF) component body functions)
 - C.1.1. Diagnosis and assessment of mental functions (including neuropsychological assessment)
 - C.1.2. Diagnosis and assessment of sensory functions and pain
 - C.1.3. Diagnosis and assessment of voice and speech functions
 - C.1.4. Diagnosis and assessment of functions of the cardiovascular, haematological, immunological, and respiratory systems
 - C.1.5. Diagnosis and assessment of functions of the digestive, swallowing, metabolic, and endocrine systems
 - C.1.6. Diagnosis and assessment of genitourinary and reproductive functions
 - C.1.7. Diagnosis and assessment of neurological, musculoskeletal and movement related functions (including gait analysis, posturography, electrophysiology, ultrasound)
 - C.1.8. Diagnosis and assessment of functions of the skin and related structures
 - C.1.9. Assessment of outcome measures, health perception and quality of life
 - C.1.10. Miscellaneous
 - C.2. PRM interventions research
 - C.2.1. Exercise
 - C.2.2. Muscle training
 - C.2.3. Ergonomics
 - C.2.4. Joint mobilization and manipulation techniques
 - C.2.5. Prosthetics and orthotics
 - C.2.6. Massage and myofascial techniques
 - C.2.7. Vibration and other mechanical stimulation
 - C.2.8. Transcranial magnetic stimulation
 - C.2.9. Lymph therapy (manual lymphatic drainage)
 - C.2.10. Heat and cold
 - C.2.11. Hydrotherapy and balneotherapy
 - C.2.12. Light (including UV)
 - C.2.13. Climatotherapy
 - C.2.14. Electrotherapy (including functional electrophysiological stimulation)
 - C.2.15. Pharmacological interventions (e.g. for pain, spasticity, anti-inflammatory drugs)
 - C.2.16. Nerve root blockades and local infiltrations
 - C.2.17. Acupuncture and complementary and alternative therapies
 - C.2.18. Nutrition and diet
 - C.2.19. Virtual reality
 - C.2.20. Rehabilitation technology, including implants, prosthesis, orthoses
 - C.2.21. Robots, aids and devices
 - C.2.22. Sports in rehabilitation
 - C.2.23. Injection techniques and infiltrations
 - C.2.24. Surgical interventions in rehabilitation
 - C.2.25. Patient and family education
 - C.2.26. Miscellaneous
 - C.3. Comprehensive rehabilitation program (continuum of care research)
 - C.3.1. Acute and early post-acute rehabilitation programs
 - C.3.2. Post-acute rehabilitation programs
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Table II. *cont*

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- C.3.3. Long-term rehabilitation programs
 - C.3.4. Intermittent (boost) rehabilitation programs for chronic conditions
 - C.3.5. Programs for prevention of disability
 - C.3.6. Miscellaneous
 - C.4. Miscellaneous

D. Integrative Rehabilitation Sciences

Description: The Integrative rehabilitation sciences design and study rehabilitation systems, services, comprehensive assessments and intervention programmes, which integrate biomedical, personal factor and environmental approaches suited to optimize people's performance. This section includes the principles and contents of education and training of professionals in rehabilitation, as well as the evaluation of the rehabilitation team and multidisciplinary care.

- D.1. Rehabilitation systems and services research
 - D.1.1. Health policy and law (including medical and social model of disability and rehabilitation)
 - D.1.2. Health strategies in Physical and Rehabilitation Medicine
 - D.1.3. Rehabilitation service organization
 - D.1.4. Rehabilitation economics
 - D.1.5. Community-based participation research
 - D.1.6. Miscellaneous
- D.2. Comprehensive rehabilitation intervention research
 - D.2.1. Rehabilitation service evaluation (including acute, post-acute and community rehabilitation services)
 - D.2.2. Rehabilitation programme evaluation (e.g. home-based rehabilitation)
 - D.2.3. Rehabilitation technology assessment (e.g. telerehabilitation)
 - D.2.4. Rehabilitation strategies for specific issues (including rehabilitation strategies for developing countries and rehabilitation after natural disasters)
 - D.2.5. Technology transfer
 - D.2.6. Patient and proxy education
 - D.2.7. Miscellaneous
- D.3. Social integration programmes and rehabilitation for specific socio-economic needs
 - D.3.1. Community based rehabilitation policy and management
 - D.3.2. Vocational rehabilitation
 - D.3.3. Support, assistance and independent living
 - D.3.4. Disability compensation
 - D.3.5. Miscellaneous
- D.4. Education and training in rehabilitation
 - D.4.1. Undergraduate medical education
 - D.4.2. Specialist training
 - D.4.3. Continuous medical education and professional development
 - D.4.4. Training in science and research
 - D.4.5. Training of other rehabilitation professionals
 - D.4.6. Miscellaneous
- D.5. Rehabilitation management and administration
 - D.5.1. Rehabilitation service management (including integrated care and service concepts)
 - D.5.2. Case management
 - D.5.3. Structures and processes in rehabilitation institutions
 - D.5.4. Miscellaneous
- D.6. Miscellaneous

E. Human Functioning Sciences

Description: The human Functioning Sciences are basic sciences from the comprehensive perspective that aim to understand human functioning and to identify targets for comprehensive interventions.

- E.1. Theories and models of functioning
 - E.2. Classification of functioning (e.g. ICF core Sets; ICF up-date and revision)
 - E.3. Measurement of functioning (e.g. psychometrics of assessment tools; operationalization of ICF categories)
 - E.4. Functioning epidemiology (population-based comparative studies of functioning across conditions, cultures, and time, e.g. on employment of people with disability)
 - E.5. Functioning impact assessment (e.g. prediction of the implications of policy and legislation on functioning)
 - E.6. Ethical issues and human rights
 - E.7. Cultural aspects of disability and rehabilitation (e.g. cultural influences, societal attitudes, religious beliefs)
 - E.8. Miscellaneous
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^aPain can be classified both as a health condition and a body function. ^bArthroplasty/joint replacement is classified under post-surgery rehabilitation. ^cTraumatic brain injury and spinal cord injury under conditions of the nervous system. ^dThis chapter also includes functioning issues. ^eIncluding case reports of specific rehabilitation issues.