

## FOREWORD

With the International Classification of Functioning, Disability and Health (ICF) the framework for the classification of functioning has been set by the World Health Organization (WHO) (1). The ICF arguably serves as a reference classification on all levels, including practice (interaction on the micro-level), service provision (meso-level) and healthcare planning (macro-level). Clinically, it can help to measure the changes brought by interventions across a multitude of dimensions, from body functions to personal activities, societal participation and environmental factors. It also provides the potential framework for transition along the continuum of care.

A classification must be exhaustive by its very nature and becomes very complex in daily use unless it is transformed into practice-friendly tools (2). Comprising over 1400 categories, the entire volume of the ICF cannot be applied by the clinicians to all their patients. In daily practice clinicians will need only a fraction of the categories found in the ICF. Although there are generic instruments based on the ICF that are designed as practical translations of the ICF and are usable across a wide range of applications, the generic character may be a drawback in specific settings. Thus, in this trade-off between generalizability and the need to capture the detail, the ICF must be adapted to the perspectives and needs of different users. The need to tailor ICF to the needs of particular contexts is the primary motivation behind the ICF Core Set project, which aims to extract selections of ICF categories from the entire classification that are relevant to specific health conditions or care situations. This on-going project of selection of the so-called ICF Core Sets will define common standards for what should properly be measured and reported (3).

Comprehensive ICF Core Sets for the acute hospital and for early post-acute rehabilitation facilities were developed for patients with neurological (4, 5), cardiopulmonary (6, 7) and musculoskeletal conditions (8, 9) and for aged patients (10). Thanks to the consensus process, the ICF Core Sets for the acute hospital and early post-acute rehabilitation facilities in their present version are comprehensive, with applicability for the assessment of individual problems and needs. As such, they permit the estimation of prognosis and the potential for rehabilitation, with general applicability for assessment of functioning in any rehabilitation situation. However, a minimally sufficient data set, which is feasible for use in clinical practice, may encompass only 20 different concepts or topics, but not much more, as contained in the comprehensive ICF Core Sets. Thus, subsets can be extracted from the comprehensive Core Sets, according to the specific needs of the individual user.

This issue of the *Journal of Rehabilitation Medicine* sets out to examine the comprehensive acute and post-acute ICF Core Sets along those lines. The first article proposes the methods used for an empirical validation of ICF Core Sets and the selection of candidate categories for briefer ICF Core Sets out

of the comprehensive sets (11). The 3 following articles deal with empirical testing of the comprehensive ICF Core Sets for patients in the acute hospital and in early post-acute rehabilitation facilities, namely by examining the respective ICF categories according to their prevalence and sensitivity for change (12–14). The validation is supplemented by 3 articles about patient goals, indicating the usefulness of the comprehensive ICF Core Sets to recognize patients' needs and rehabilitation goals in the acute and early post-acute situation (15–17). The next 3 articles employ the proposed methods for identifying candidate categories for ICF Core Sets out of the comprehensive acute and post-acute ICF Core Sets for the reporting and measurement of functioning in patients in the acute hospital and early post-acute rehabilitation facilities (18–20). Statistical selection yielded between 22 and 29 categories of the functioning component of the ICF qualifying as candidates. Last, but not least, there are two articles from our colleagues from the University Hospital of Zurich, Switzerland, who describe the practical application of ICF Core Sets in the acute hospital (21) and the reliability of categories when operationalized by physiotherapists (22). This is the first time that the implementation of ICF Core Sets by health professionals is described in detail. Appendix I (p. 180–182) gives an overview of all ICF Core Sets for the acute and early-post-acute situation, their validation and testing.

The result of this identification process is by no means exhaustive; those categories have to be seen as practical tools to encourage and facilitate assessment of functioning across the continuum of care. The ICF is emerging as the standard for describing patients' functioning in both rehabilitation care provision and research. The International Society of Physical and Rehabilitation Medicine (ISPRM) has endorsed the ICF and has adopted the ICF Core Sets as assessment tools for Physical Medicine and Rehabilitation (23). Preliminary experiences with the ICF Core Sets have shown that the practical implementation of the ICF contributes to an increased recognition of patients' needs and improved care provision, thus contributing to the quality of rehabilitation care in the acute hospital and in early post-acute rehabilitation facilities.

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## APPENDIX I. International Classification of Functioning, Disability and Health (ICF) Core Sets for the acute hospital and for the post-acute situation (see Foreword on pages 85–86)

ICF Core Set	Publication on the preliminary studies	Publication on the consensus conference/ Date of the consensus conference	Publication on testing and validation	Application studies
<i>Acute context</i>				
Neurological conditions	Scheuringer M, Grill E, Boldt C, Müllner P, Stucki G. Systematic review of measures and their concepts used in published studies focusing on rehabilitation in the acute hospital and in early post-acute rehabilitation facilities. <i>Disabil Rehabil</i> 2005; 27: 419–429. Grill E, Quittan M, Huber EO, Boldt C, Stucki G. Identification of relevant ICF categories by health professionals in the acute hospital. <i>Disabil Rehabil</i> 2005; 27: 437–445. Grill E, Huber EO, Stucki G, Herceg M, Fialka-Moser V, Quittan M. Identification of relevant ICF categories by patients in the acute hospital. <i>Disabil Rehabil</i> 2005; 27: 447–458.	Grill E, Ewert T, Chatterji S, Kostanjsek N, Stucki G. ICF Core Set development for the acute hospital and early post-acute rehabilitation facilities. <i>Disabil Rehabil</i> 2005; 27: 361–366. Ewert T, Grill E, Bartholomeyczik S, Finger M, Mokrusch T, Kostanjsek N, et al. ICF core set for patients with neurological conditions in the acute hospital. <i>Disabil Rehabil</i> 2005; 27: 367–337. Consensus conference: 28 November–1 December, 2003	Müller M, Boldt C, Grill E, Strobl R, Stucki G. Identification of ICF categories relevant for nursing in the situation of acute and early post-acute rehabilitation. <i>BMC Nurs</i> 2008; 18: 7: 3. Grill E, Stucki G. Criteria for validating the comprehensive ICF Core Sets and developing brief ICF Core Set versions. <i>J Rehabil Med</i> 2011; 43: 87–91. Müller M, Grill E, Stier-Jarmer M, Strobel R, Gutenbrunner C, Fialka-Moser V, Stucki G. Validation of the comprehensive ICF Core Sets for patients receiving rehabilitation interventions in the acute care setting. <i>J Rehabil Med</i> 2011; 43: 92–101. Grill E, Quittan M, Fialka-Moser V, Müller M, Strobl M, Kostanjsek N, et al. Brief ICF core sets for the acute hospital. <i>J Rehabil Med</i> . <i>J Rehabil Med</i> 2011; 43: 123–130. Müller M, Strobl M, Grill E. Goals of patients with rehabilitation needs in acute hospitals: Goal achievement is an indicator for improved functioning. <i>J Rehabil Med</i> 2011; 43: 145–150. See “Neurological conditions”	Grill E, Gloor T, Huber EO, Stucki G. Operationalization and reliability testing of ICF categories relevant for physiotherapists’ interventions in the acute hospital. <i>J Rehabil Med</i> 2011; 43: 162–173. Huber EO, Tobler A, Gloor-Juzi T, Grill E, Gut B. The ICF as a way to specify goals and to assess the outcome of physiotherapeutic interventions in the acute hospital. <i>J Rehabil Med</i> 2011; 43: 174–177. Müller M, Lohmann S, Strobl R, Boldt C, Grill E. Patients’ functioning as predictor of nursing workload in acute hospital units providing rehabilitation care: a multi-centre cohort study. <i>BMC Health Serv Res</i> 2010; 29: 10: 295. Grill E, Huber EO, Gloor-Juzi T, Stucki G. Intervention goals determine physical therapists’ workload in the acute care setting. <i>Phys Ther</i> 2010; 90: 1468–1478.
Musculoskeletal conditions	See “Neurological conditions” Weigl M, Cieza A, Kostanjsek N, Kirschnick M, Stucki G. The ICF comprehensively covers the spectrum of health problems encountered by health professionals in patients with musculoskeletal conditions. <i>Rheumatology</i> 2006; 45: 1247–1254.	See Grill et al. 2005 under “Neurological conditions” Stoll T, Brach M, Huber EO, Scheuringer M, Schwarzkopf SR, Kostanjsek N, et al. ICF core set for patients with musculoskeletal conditions in the acute hospital. <i>Disabil Rehabil</i> 2005; 27: 381–387. See Grill et al. 2010 under “Neurological conditions” Consensus conference: 28 November–1 December, 2003	See “Neurological conditions”	
Cardiopulmonary conditions	See “Neurological conditions”	See Grill et al. 2005 under “Neurological conditions” Boldt C, Grill E, Wildner M, Portenier L, Wilke S, Stucki G, et al. ICF core set for patients with cardiopulmonary conditions in the acute hospital. <i>Disabil Rehabil</i> 2005; 27: 375–380. See Grill et al. 2010 under “Neurological conditions” Consensus conference: 28 November–1 December, 2003	See “Neurological conditions”	

APPENDIX I. *contd.*

ICF Core Set	Publication on the preliminary studies	Publication on the consensus conference/ Date of the consensus conference	Publication on testing and validation	Application studies
<i>Early post-acute context</i>				
Neurological conditions	See Acute context "Neurological conditions" Grill E, Lipp B, Boldt C, Stucki G, Koenig E. Identification of relevant ICF categories by patients with neurological conditions in early post-acute rehabilitation facilities. <i>Disabil Rehabil</i> 2005; 27: 459–465.	See Grill et al. 2005 under Acute context "Neurological conditions" Stier-Jarmer M, Grill E, Ewert T, Bartholomeyczik S, Finger M, Mokrusch T, et al. ICF core set for patients with neurological conditions in early post-acute rehabilitation facilities. <i>Disabil Rehabil</i> 2005; 27: 389–395. Consensus conference: 28 November–1 December, 2003	See Acute context "Neurological conditions" Grill E, Strobl M, Müller M, Quittan M, Kostanjsek N, Stucki G. ICF core sets for early post-acute rehabilitation facilities. <i>J Rehabil Med</i> 2011; 43: 131–138. Müller M, Stier-Jarmer M, Quittan M, Strobl R, Stucki G, Grill E. Validation of the comprehensive ICF core sets for patients in post-acute rehabilitation facilities. <i>J Rehabil Med</i> 2011; 43: 102–112. Lohmann St, Decker J, Müller M, Strobl M, Grill E. The ICF forms a useful framework for classifying individual patient goals in post-acute rehabilitation. <i>J Rehabil Med</i> 2011; 43: 151–155.	
Musculoskeletal conditions	See Acute context "Neurological conditions"	See Grill et al. 2005 under Acute context "Neurological conditions" Scheuringer M, Stucki G, Huber EO, Brach M, Schwarzkopf SR, Kostanjsek N, et al. ICF core set for patients with musculoskeletal conditions in early post-acute rehabilitation facilities. <i>Disabil Rehabil</i> 2005; 27: 405–410. Consensus conference: 28 November–1 December, 2003	See Acute context "Neurological conditions" See Early post-acute context "Neurological conditions"	
Cardiopulmonary conditions	See Acute context "Neurological conditions"	See Grill et al. 2005 under Acute context "Neurological conditions" Wildner M, Quittan M, Portenier L, Wilke S, Boldt C, Stucki G, et al. ICF core set for patients with cardiopulmonary conditions in early post-acute rehabilitation facilities. <i>Disabil Rehabil</i> 2005; 27: 397–404. Consensus conference: 28 November–1 December, 2003	See Acute context "Neurological conditions" See Early post-acute context "Neurological conditions"	

APPENDIX I. *contd.*

ICF Core Set	Publication on the preliminary studies	Publication on the consensus conference/ Date of the consensus conference	Publication on testing and validation	Application studies
Geriatric patients	See Acute context "Neurological conditions" Grill E, Stucki G, Boldt C, Joisten S, Swoboda W. Identification of relevant ICF categories by geriatric patients in an early post-acute rehabilitation facility. <i>Disabil Rehabil</i> 2005; 27: 467–473.	Grill E, Hermes R, Swoboda W, Uzarewicz C, Kostanjsek N, Stucki G. ICF core set for geriatric patients in early post-acute rehabilitation facilities. <i>Disabil Rehabil</i> 2005; 27: 411–417. Consensus conference: 28 November–1 December, 2003	See Acute context "Neurological conditions" Sier-Jarmer M, Grill E, Müller M, Strobl R, Quittan M, Stucki G. Validation of the comprehensive ICF Core Set for patients in geriatric post-acute rehabilitation facilities. <i>J Rehabil Med</i> 2011; 43: 113–122. Grill E, Müller M, Quittan M, Strobl R, Kostanjsek N, Stucki G. Brief ICF Core Set for patients in geriatric post-acute rehabilitation facilities. <i>J Rehabil Med</i> 2011; 43: 139–144. Kus S, Müller M, Strobl R, Grill E. Patient goals in post-acute geriatric rehabilitation: Goal attainment is an indicator for improved functioning. <i>J Rehabil Med</i> 2011; 43: 156–161.	Grill E, Joisten S, Swoboda W, Stucki G. Early-stage impairments and limitations of functioning from the geriatric ICF Core Set as determinants of independent living in older patients after discharge from post-acute rehabilitation. <i>J Rehabil Med</i> 2007; 39: 591–597.
Spinal cord injury	Kirchberger I, Biering-Sørensen F, Charlifue S, Baumberger M, Campbell R, Kovindha A, et al. Identification of the most common problems in functioning of individuals with spinal cord injury using the International Classification of Functioning, Disability and Health. <i>Spinal Cord</i> 2010; 48: 221–229. Scheuringer M, Kirchberger I, Boldt C, Eriks-Hoogland I, Rauch A, Velstra IM, et al. Identification of problems in individuals with spinal cord injury from the health professional perspective using the ICF: a worldwide expert survey. <i>Spinal Cord</i> 48: 529–36. Kirchberger I, Sinnott A, Charlifue S, Kovindha A, Lüthi H, Campbell R, et al. Functioning and disability in spinal cord injury from the consumer perspective: an international qualitative study using focus groups and the ICF. <i>Spinal Cord</i> 2010; 48: 603–613. Post MW, Kirchberger I, Scheuringer M, Wollars MM, Geyh S. Outcome parameters in spinal cord injury research: a systematic review using the International Classification of Functioning, Disability and Health (ICF) as a reference. <i>Spinal Cord</i> 2010; 48: 522–528.	Grill E, Hermes R, Swoboda W, Uzarewicz C, Kostanjsek N, Stucki G. ICF core set for geriatric patients in early post-acute rehabilitation facilities. <i>Disabil Rehabil</i> 2005; 27: 411–417. Consensus conference: 28 November–1 December, 2003	See Acute context "Neurological conditions" Sier-Jarmer M, Grill E, Müller M, Strobl R, Quittan M, Stucki G. Validation of the comprehensive ICF Core Set for patients in geriatric post-acute rehabilitation facilities. <i>J Rehabil Med</i> 2011; 43: 113–122. Grill E, Müller M, Quittan M, Strobl R, Kostanjsek N, Stucki G. Brief ICF Core Set for patients in geriatric post-acute rehabilitation facilities. <i>J Rehabil Med</i> 2011; 43: 139–144. Kus S, Müller M, Strobl R, Grill E. Patient goals in post-acute geriatric rehabilitation: Goal attainment is an indicator for improved functioning. <i>J Rehabil Med</i> 2011; 43: 156–161.	Grill E, Joisten S, Swoboda W, Stucki G. Early-stage impairments and limitations of functioning from the geriatric ICF Core Set as determinants of independent living in older patients after discharge from post-acute rehabilitation. <i>J Rehabil Med</i> 2007; 39: 591–597.