

## MEASUREMENT OF FUNCTIONAL SELF - SUFFICIENCY

Patricia BAŇÁROVÁ<sup>1</sup>, Miroslav ČERNICKÝ<sup>1</sup>, Peter KUTIŠ<sup>2</sup>

<sup>1</sup>*Faculty of Healthcare, Alexander Dubček University of Trenčín, Študentská 2, 911 01 Trenčín, Slovak Republic*

<sup>2</sup>*Faculty of Health, Catholic University in Ružomberok*

\*Corresponding author E-mail address: patricia.banarova@tnuni.sk

Received 28. 09. 2012; accepted in revised form 16. 11. 2012

### Abstract

Testing status of patients before and after treatment is an essential part of determination a medical procedure and evaluating of the effectiveness of therapy. A significant change in the assessment of health care is a shift from a purely medical point of view in terms of valorisation of the patient himself. In recent years it is the patient's perception of his own physical, mental status and psychosocial function has become an important issue in the development of new instruments used for the evaluation of therapeutic effects. The quality of patient's life has thus becoming one of the basic endpoints. One of the most widely used tests is the Functional Independence Measure. The Functional Independence Measure is an 18 – item, 7 – level scale developed to uniformly assess severity of patient disability and medical rehabilitation functional outcome.

**Keywords:** Functional Independence Measure. Independence. Self – sufficiency.

### Introduction

Problem of chronic diseases with their consequences for society and for individual is at the foreground of global concern of professionals in various fields of human activity (medical – preventive, nursing, psychological, social, legislative). The progression of the disease leads to the development of functional disability, which ultimately affects the overall quality of life for individuals in the field of physical and psychosocial. These people often need the services of physiotherapists to help them return to the community as independently as possible [1].

In 2001 World Health Organisation defined the International Classification of disorders, activities and participations that focused on the functional capabilities in relation to the restriction. For functional assessment of disease tests are applied at all levels of the disability (disorder, impairment of activity and impairment of participation).

For the evaluation of disorders there are various specific tests that can accurately determine the severity of disorders. For example Kurtzke Expanded Disability Status Scale for Multiple Sclerosis or Brunnstrom Test of motor function after stroke. General tests as Barthel Index or Functional Independence Measure are used to assess limitations of activity. The term “impairment of participation” expresses the social consequences of pathology and manifests according to the social role and activities of the patient. An example is the loss of job and social contacts. This is particularly the loss of self determination as a result of disease. For evaluation of participation, there are more tests which evaluate the patient quality of life – Quality of Life Test[2-5].

### Barthel Index and the Functional Independence Measure

Patients' functional abilities are measured systematically in physiotherapy practice all over the world. Measurement of functional self – sufficiency has become an essential examination in the U.S. as well as in the developed countries of Europe. The functional independence measure (FIM) is used worldwide in medical rehabilitation units. It thus has

international acceptance. It was developed to solve the long – standing problem of inconsistent measurement of disability and rehabilitation outcomes. The Barthel Index (Fig. 1) and the FIM are the best known tests of activities used to determine the functional ability and level of self – sufficiency of individuals with health problems[6, 7].

The Barthel Index		
Patient name	Rater name	Date
<b>ACTIVITY</b>		<b>SCORE</b>
<b>Feeding</b>		
0 = unable		
5 = needs cutting, spreading butter, etc, or requires modified diet		
10 = independent		_____
<b>Bathing</b>		
0 = dependent		
5 = independent (or in shower)		_____
<b>Grooming</b>		
0 = needs help with personal care		
5 = independent face/hair/teeth/shaving (implements provided)		_____
<b>Dressing</b>		
0 = dependent		
5 = needs help but can do about half unaided		
10 = independent (including buttons, zips, laces, etc)		_____
<b>Bowels</b>		
0 = incontinent (or needs to be given enemas)		
5 = occasional accident		
10 = continent		_____
<b>Bladder</b>		
0 = incontinent, or catheterised and unable to manage alone		
5 = occasional accident		
10 = continent		_____
<b>Toilet use</b>		
0 = dependent		
5 = needs some help, but can do something alone		
10 = independent (on and off, dressing, wiping)		_____
<b>Transfers (bed to chair and back)</b>		
0 = unable, no sitting balance		
5 = major help (one or two people, physical), can sit		
10 = minor help (verbal or physical)		
15 = independent		_____
<b>Mobility (on level surfaces)</b>		
0 = immobile or <50 yards		
5 = wheelchair independent, including corners, >50 yards		
10 = walks with help of one person (verbal or physical) >50 yards		
15 = independent (but may use any aid, eg. stick) >50 yards		_____
<b>Stairs</b>		
0 = unable		
5 = needs help (verbal, physical, carrying aid)		
10 = independent		_____
<b>Total (0-100)</b>		

*Fig. 1 Barthel Index [8]*

The FIM was developed in 1983 by a task force created by the American Congress of Rehabilitation Medicine and the American Academy of Physical Medicine and Rehabilitation headed by Carl Granger and Byron Hamilton. To generate items, this group conducted a literature review of 36 existing functional performance measures. The final instrument was based on the Barthel Index, which has been in use since the 1950s. The FIM was designed to measure physical and cognitive disability and focuses on burden of care. The main objective in its development was to create a generic measure that could be administered by clinicians and non – clinicians to assess patients in all age groups with a wide variety of diagnoses [1, 9-12].

The FIM enables providers and programs to document the severity of patient disability and the results of medical rehabilitation and establishes a common measure for the comparison of rehabilitation outcomes. The FIM allows also clinicians to follow changes in the functional status of their patients from the start of rehabilitative care through discharge and follow-up. The FIM score is collected within 72 hours after admission to the rehabilitation unit, within 72 hours before discharge, and between 80 to 180 days after discharge [13].

The FIM is based on the basic evaluation Barthel Index, which assesses ten activities (receiving food, bathing, personal hygiene, dressing, bladder continence, anal continence, using toilet, transfers, locomotion and walking up the stairs). Compared to the Barthel Index is FIM supplemented by monitoring cognitive functions (mental functions and social adaptability). This is the reason, why the practice of withdrawing from Barthel Index and increasingly being used FIM. Many FIM areas are considered activities of daily living (ADLS) which are activities one performs in the course of daily life. The FIM is often considered the gold standard for assessing ADLs [6, 14].

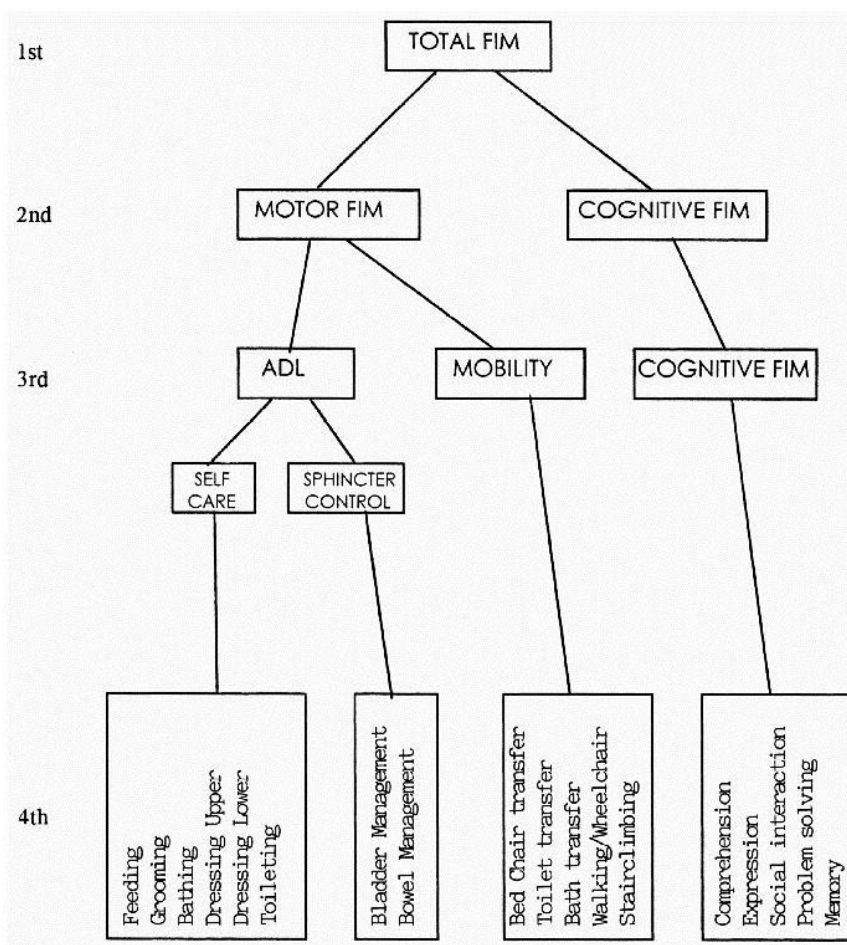
The FIM was created to develop a new universal language for describing function and outcomes and to address weaknesses of Barthel Index. It should be noted, however, that the maximum value of FIM doesn't necessarily mean a full self – sufficiency in activities of daily living, because it doesn't record some features such cooking or house work [6, 14].

The FIM assesses 18 items (13 motor = Motor FIM based on Barthel Index and 5 cognitive activities = Cognitive FIM) in six categories (self – care, continence, transfers, locomotion, communication and social adaptability). Six categories and eighteen items of FIM:

1. Self – care:
  - Eating
  - Grooming
  - Bathing
  - Dressing the upper body
  - Dressing the lower body
  - Toileting
2. Sphincters control:
  - Bladder continence
  - Bowel continence
3. Transfers:
  - Bed, chair, wheelchair
  - Toilet
  - Tub, shower
4. Locomotion:
  - Walking / wheelchair

- Stairs
- 5. Communication:
  - Comprehension
  - Expression
- 6. Social adaptability:
  - Social interaction
  - Problem solving
  - Memory

Eighteen individual items are arranged in four dimensions as shown in Fig. 2[15].



*Fig 2 Dimensionality of the FIM [15]*

Items are scored on the level of assistance required for an individual to perform activities of daily living. Each of these functions is scored by seven – point scale of independence (level1 represents total dependence, level7 represents complete independence). The sum of all 18 items gives the patient’s total score, which ranges between 18 – 126 points (Motor FIM 13 – 91 points, Cognitive FIM 3 – 35 points). If the testing could be a safety hazard for patient, evaluate the function as level 1. Where is necessary assistance of two physiotherapists to the patient to perform activity - again level1. If the performance of any activity requires the preparation of a variety of tools for patient - level 5[6, 16].

Examination specifies self – sufficiency, not the degree of damage to the individual. The FIM measure what patient can do, regardless of the diagnosis or harm, not what the patient should or could prove if circumstances were different. Testing informs us about the

current state of self – sufficiency, its evolution during treatment and after treatment. The test is designed so that it can be used by everyone skilled health professional, regardless of health focus (Fig. 3). The FIM was designed to be used by any discipline including physiatrists, physical therapists, occupational therapists, experienced nurses, speech therapists and psychologists. Because the FIM is the most widely used functional assessment tool in physiotherapy, physiotherapists must be expert at interpreting data from this instrument [17].

## FIM™ instrument

L E V E L S	7 Complete Independence (Timely, Safely) 6 Modified Independence (Device)	NO HELPER																																																																																																																																														
	<b>Modified Dependence</b> 5 Supervision (Subject = 100%+) 4 Minimal Assist (Subject = 75%+) 3 Moderate Assist (Subject = 50%+)  <b>Complete Dependence</b> 2 Maximal Assist (Subject = 25%+) 1 Total Assist (Subject = less than 25%)	HELPER																																																																																																																																														
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 15%; text-align: center;">ADMISSION</th> <th style="width: 15%; text-align: center;">DISCHARGE</th> <th style="width: 15%; text-align: center;">FOLLOW-UP</th> <th style="width: 25%;"></th> </tr> </thead> <tbody> <tr> <td><b>Self-Care</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>A. Eating</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td>B. Grooming</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td>C. Bathing</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td>D. Dressing - Upper Body</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td>E. Dressing - Lower Body</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td>F. Toileting</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td><b>Sphincter Control</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>G. Bladder Management</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td>H. Bowel Management</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td><b>Transfers</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>I. Bed, Chair, Wheelchair</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td>J. Toilet</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td>K. Tub, Shower</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td><b>Locomotion</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>L. Walk/Wheelchair</td> <td style="text-align: center;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     W Walk                      C Wheelchair                      B Both                 </div> </div> </td> <td style="text-align: center;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     W Walk                      C Wheelchair                      B Both                 </div> </div> </td> <td style="text-align: center;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     W Walk                      C Wheelchair                      B Both                 </div> </div> </td> <td></td> </tr> <tr> <td>M. Stairs</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td><b>Motor Subtotal Score</b></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td><b>Communication</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>N. Comprehension</td> <td style="text-align: center;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     A Auditory                      V Visual                      B Both                 </div> </div> </td> <td style="text-align: center;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     A Auditory                      V Visual                      B Both                 </div> </div> </td> <td style="text-align: center;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     A Auditory                      V Visual                      B Both                 </div> </div> </td> <td></td> </tr> <tr> <td>O. Expression</td> <td style="text-align: center;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     V Vocal                      N Nonvocal                      B Both                 </div> </div> </td> <td style="text-align: center;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     V Vocal                      N Nonvocal                      B Both                 </div> </div> </td> <td style="text-align: center;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     V Vocal                      N Nonvocal                      B Both                 </div> </div> </td> <td></td> </tr> <tr> <td><b>Social Cognition</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>P. Social Interaction</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td>Q. Problem Solving</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td>R. Memory</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td><b>Cognitive Subtotal Score</b></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> <tr> <td><b>TOTAL FIM Score</b></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td></td> </tr> </tbody> </table>						ADMISSION	DISCHARGE	FOLLOW-UP		<b>Self-Care</b>					A. Eating	<input type="text"/>	<input type="text"/>	<input type="text"/>		B. Grooming	<input type="text"/>	<input type="text"/>	<input type="text"/>		C. Bathing	<input type="text"/>	<input type="text"/>	<input type="text"/>		D. Dressing - Upper Body	<input type="text"/>	<input type="text"/>	<input type="text"/>		E. Dressing - Lower Body	<input type="text"/>	<input type="text"/>	<input type="text"/>		F. Toileting	<input type="text"/>	<input type="text"/>	<input type="text"/>		<b>Sphincter Control</b>					G. Bladder Management	<input type="text"/>	<input type="text"/>	<input type="text"/>		H. Bowel Management	<input type="text"/>	<input type="text"/>	<input type="text"/>		<b>Transfers</b>					I. Bed, Chair, Wheelchair	<input type="text"/>	<input type="text"/>	<input type="text"/>		J. Toilet	<input type="text"/>	<input type="text"/>	<input type="text"/>		K. Tub, Shower	<input type="text"/>	<input type="text"/>	<input type="text"/>		<b>Locomotion</b>					L. Walk/Wheelchair	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     W Walk                      C Wheelchair                      B Both                 </div> </div>	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     W Walk                      C Wheelchair                      B Both                 </div> </div>	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     W Walk                      C Wheelchair                      B Both                 </div> </div>		M. Stairs	<input type="text"/>	<input type="text"/>	<input type="text"/>		<b>Motor Subtotal Score</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>		<b>Communication</b>					N. Comprehension	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     A Auditory                      V Visual                      B Both                 </div> </div>	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     A Auditory                      V Visual                      B Both                 </div> </div>	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     A Auditory                      V Visual                      B Both                 </div> </div>		O. Expression	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     V Vocal                      N Nonvocal                      B Both                 </div> </div>	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     V Vocal                      N Nonvocal                      B Both                 </div> </div>	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     V Vocal                      N Nonvocal                      B Both                 </div> </div>		<b>Social Cognition</b>					P. Social Interaction	<input type="text"/>	<input type="text"/>	<input type="text"/>		Q. Problem Solving	<input type="text"/>	<input type="text"/>	<input type="text"/>		R. Memory	<input type="text"/>	<input type="text"/>	<input type="text"/>		<b>Cognitive Subtotal Score</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>		<b>TOTAL FIM Score</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	ADMISSION	DISCHARGE	FOLLOW-UP																																																																																																																																													
<b>Self-Care</b>																																																																																																																																																
A. Eating	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
B. Grooming	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
C. Bathing	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
D. Dressing - Upper Body	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
E. Dressing - Lower Body	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
F. Toileting	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
<b>Sphincter Control</b>																																																																																																																																																
G. Bladder Management	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
H. Bowel Management	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
<b>Transfers</b>																																																																																																																																																
I. Bed, Chair, Wheelchair	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
J. Toilet	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
K. Tub, Shower	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
<b>Locomotion</b>																																																																																																																																																
L. Walk/Wheelchair	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     W Walk                      C Wheelchair                      B Both                 </div> </div>	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     W Walk                      C Wheelchair                      B Both                 </div> </div>	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     W Walk                      C Wheelchair                      B Both                 </div> </div>																																																																																																																																													
M. Stairs	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
<b>Motor Subtotal Score</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
<b>Communication</b>																																																																																																																																																
N. Comprehension	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     A Auditory                      V Visual                      B Both                 </div> </div>	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     A Auditory                      V Visual                      B Both                 </div> </div>	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     A Auditory                      V Visual                      B Both                 </div> </div>																																																																																																																																													
O. Expression	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     V Vocal                      N Nonvocal                      B Both                 </div> </div>	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     V Vocal                      N Nonvocal                      B Both                 </div> </div>	<input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <input type="text"/> <div style="display: inline-block; vertical-align: middle; margin-left: 5px;">                     V Vocal                      N Nonvocal                      B Both                 </div> </div>																																																																																																																																													
<b>Social Cognition</b>																																																																																																																																																
P. Social Interaction	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
Q. Problem Solving	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
R. Memory	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
<b>Cognitive Subtotal Score</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
<b>TOTAL FIM Score</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																																																																																																													
NOTE: Leave no blanks. Enter 1 if patient not testable due to risk																																																																																																																																																

*Fig. 3 The Functional Independence Measure [18]*

FIM advantage over other tests is, that it simultaneously evaluates motor skills and cognitive functions. In research work provides mathematical processing. Compared to the Barthel Index is more complete and sensitive. Seven – point rating scale has in comparison with other tests the ability to detect even minor functional changes. Seven – point rating scale of FIM (Levels of assistance) [8]:

- Self – sufficient: does not require the assistance of another person.
  7. Complete independence: activity is done reliably without modification, assistive devices, and within a reasonable time. No assistance required. Performs activity safely alone and feels secure.
  6. Modified independence: the activity requires assistive devices, takes more than a reasonable time, or is performed less reliably and safely. One or more of these may be true.
- Modified dependence: oversight is needed or assistance of another person. Patient expends 50% or more of the effort to carry out the activity.
  5. Supervision or Setup: not need physical contact (help), but require guidance and praise. Patient needs supervision or verbal cues to complete activity. Assistant hence only remains close in the case of need, alternatively, prepares the necessary aids for patient.
  4. Minimal contact assistance: patient requires minimal contact (no more help than touching) and expends 75% or more effort to carry out the activity. Requires guidance for initiation, balance, and stability during the activity.
  3. Moderate assistance: patient requires more support than touching to carry out the activity and expends 50% or more of the effort necessary to do a task, and requires no more than helping or touching.
- Complete dependence: is required maximum assistance of another person. Patient expends less than 50% of the effort for the successful implementation of the required activity, or the activity is not performed at all.
  2. Maximal assistance: patient requires considerable assistance. Patient contributes little or nothing toward execution of activity. Efforts in the activities less than 50%, but at least 25%.
  1. Total assistance: patient requires a comprehensive assistance. Patient expends less than 25% of the effort and is unable to safely initiate and perform any part of the activity on his own.

The values are recorded in the chart. All items of test must be completed. Each of the items reaches a maximum level 7 and the lowest level 1. Never evaluate the item as a level 0. If the patient needs help of another person, so this assistance is transferred in time and energy that must be incurred assisted person. If in function appear differences in other environments, or time intervals, note the lowest score. If the patient doesn't carry out the activity, it can be caused by fatigue or lack of motivation [8, 19-20].

Always consider the patient in relation to the selected item. For example, in assessing continence, not evaluate whether patient can transfer to the toilet. That evaluate in the part of transfers / toilet. Rehabilitation professionals must consider that the FIM instrument doesn't always completely reflect patients true functional abilities and be critical consumers of any research containing FIM data [17, 20].

## Conclusion

Currently, there are a number of tests to deal, which deal with the evaluation of self – sufficiency. The FIM is one of them. The FIM is used to determine the level of disability that patients experience and the progress that they make through methods of physiotherapy. It is

used mainly for patients indicated for rehabilitation treatment. Test informs us about the current state of self – sufficiency. Enables communication between experts of rehabilitation team, but also between departments, in order to maintain community rehabilitation therapy, for example if patient is transferred to another department. Physiotherapist must consider that the instrument itself doesn't completely reflect patients true functional abilities. The FIM is thus part of the system a single data processing of rehabilitation departments [21].

## References

- [1] ME. Cohen, RJ. Marino: The tools of disability outcomes research functional status measures. *Archives of Physical Medicine and Rehabilitation*, 2000, p. 21-29.
- [2] CV. Granger, AC. Cotter, BB. Hamilton, RC. Fiedler: Functional Assessment Scales: A Study of Persons After Stroke. *Archives of Physical Medicine and Rehabilitation*, 1993, p. 133-138.
- [3] O. Švestková et al.: Organizace rehabilitace při použití MKF (mezinárodní klasifikace funkčních schopností, disability a zdraví WHO) a stanovení stupně funkčního postižení (disability) podle kvalifikátorů MKF. *Rehabilitace a fyzikální lékařství*, 2010, 6 (6): p. 43-50.
- [4] Medzinárodná klasifikácia funkčnej schopnosti, disability a zdravia (MKF). Slovenské vydanie. Bratislava: Ekovys, 2003, p. 198
- [5] MG. Stineman, A. Jette, R. Fiedler et al.: Impairment – specific dimensions within the Functional Independence Measure. *Archives of Physical Medicine and Rehabilitation*, 1997, 78: p. 636-643.
- [6] TM. Black, T. Soltis, C. Bartlett: Using the Functional Independence Measure instrument to predict stroke rehabilitation outcomes. *Rehabilitation Nursing*, 1999, p. 109-114.
- [7] Ch. Glenny, P. Stolee: Comparing the Functional Independence Measure and the inter RAI/MDS for use in the functional assessment of older adults: a review of the literature. *BMC Geriatrics*, 2009.
- [8] [15.09.2012] Barthel Index – activities of daily living (modified), <http://www.racgp.org.au/silverbookonline/4-0.asp>
- [9] JL. Wells, JA. Seabrook, P. Stolee, MJ. Borrie, F. Knoefel: State of the art in geriatric rehabilitation. Part I: Review of frailty and comprehensive geriatric assessment. *Archives of Physical Medicine and Rehabilitation*, 2003, p. 890-897.
- [10] CV. Granger, BB. Hamilton, M. Zielezny, FS. Sherwin: Advances in functional assessment in medical rehabilitation. *Topics in Geriatric Rehabilitation*, 1986, p. 59-74.
- [11] I. McDowell, C. Newell: *Measuring Health* New York: Oxford University Press; 1996.
- [12] FL. Mahoney, DA. Barthel: Functional evaluation: The Barthel Index. *Maryland State Medical Journal*, 1965, p. 61-65.
- [13] [16.09.2012] About The FIM System®. [http://www.udsmr.org/WebModules/FIM/Fim\\_About.aspx](http://www.udsmr.org/WebModules/FIM/Fim_About.aspx)
- [14] KM. Hall, BB. Hamilton, WA. Gordon, ND. Zasler: Characteristics and Comparisons of Functional Assessment Indices: Disability Rating Scale, Independence Measure and Functional Assessment Measure. *J. Head Trauma Rehabil.*, 8, 1993, p. 60-74.
- [15] MG. Stineman, A. Jette, R. Fiedler, C. Granger: Impairment Specific Dimensions within the Functional Independence Measure. *Archives of Physical Medicine and Rehabilitation*, 1997, 78: p 636-643.
- [16] CV. Granger, BB. Hamilton, JM. Linacre, AW. Heinemann, BD. Wright: Performance profiles of the functional independence measure. *American Journal of Physical Medicine & Rehabilitation/Association of Academic Physiatrists*, 1993, p. 84-89.

- [17] M. Cournan: Use of the Functional Independence Measure for Outcomes Measurement in Acute Inpatient Rehabilitation. *Rehabilitation Nursing*, Vol. 36, No. 3, p. 111-117.
- [18] [15.09.2012] Functional Independence Measure. [http://www.springerimages.com/Images/MedicineAndPublicHealth/1-10.1007\\_s00520-004-0680-8-3](http://www.springerimages.com/Images/MedicineAndPublicHealth/1-10.1007_s00520-004-0680-8-3)
- [19] D. Martišová: Použitie FIM testu pri funkčnom vyhodnotení rehabilitačnej liečby u pacientov s kraniocerebrálnym poranením. *Rehabilitácia*, Vol. 45, No. 3, 2008, p. 152-159.
- [20] M. Malý: Testovanie funkčnej sebestačnosti. *Rehabilitácia*, Vol. 34, No. 2, 2001, p. 69-75.
- [21] BB. Hamilton, CV. Granger, FS. Sherwin et al.: A uniform national data system for medical rehabilitation. In: Fuhrer MJ, editor. *Rehabilitation Outcomes: analysis and measurement*. Baltimore, MD: Brookes, 1987, p. 137-147.

*Review: Vladimír Littva  
Jana Slobodníková*