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ICF Case Studies

Translating Interventions into Real-life Gains – a Rehab-Cycle Approach

# Psychological Issues and SCI

Case Study 15



2nd Edition 2016 | [www.icf-casestudies.org](http://www.icf-casestudies.org)

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## Psychological Issues and SCI

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## Preface

Functioning is a central dimension in persons experiencing or likely to experience disability. Accordingly, concepts, classifications and measurements of functioning and health are key to clinical practice, research and teaching. Within this context, the approval of the **International Classification of Functioning, Disability and Health (ICF)** by the World Health Assembly in May 2001 is considered a landmark event.

To illustrate the use of the ICF in rehabilitation practice **Swiss Paraplegic Research (SPF)** together with **Swiss Paraplegic Centre (SPZ)**, one of Europe's leading (acute and rehabilitation) centres for paraplegia and spinal cord injury (SCI), performed a series of case studies. Conducting ICF-based case studies was one approach to address SPF's aim to contribute to optimal functioning, social integration, health and quality of life for persons with SCI through clinical and community-oriented research. The ICF-based case studies project began in October 2006.

In this project, persons of different age groups and gender and who are living with SCI of varying etiology and levels of severity, were accompanied during their rehabilitation at SPZ. The rehabilitation process is then described using the Rehab-Cycle® and the corresponding ICF-based documentation tools. Since persons with SCI are faced with a number of physical, psychological and social challenges, the case studies aimed to cover a broad spectrum of these challenges. With this in mind, each case study highlighted a specific theme of SCI rehabilitation.

A booklet is published for each case study conducted. To better understand the case studies described in these booklets, find below some basic information about SCI, the ICF, ICF Core Sets, the Rehab-Cycle® and the ICF-based documentation tools.

### Spinal Cord Injury (SCI)

Spinal cord injury (SCI) is an injury of the spinal cord that results in a temporary or permanent change in motor, sensory, or autonomic functions of the injured person's body. The spinal cord is divided into four sections which can be further subdivided into individual segments:

- 8 cervical segments (C1 to C8)
- 12 thoracic segments (T1 to T12)
- 5 lumbar segments (L1 to L5)
- 5 sacral segments (S1 to S5)

The damage of the spinal cord is called lesion. Important functions such as mobility (motor functions) or sensation (sensory functions) fail below the lesion. To help determine future rehabilitation and recovery needs, the extent of a SCI in terms of sensory and motor functions is described using the American Spinal Injury Association (ASIA) impairment scale.

### International Classification of Functioning, Disability and Health (ICF)

The ICF is a classification of the **World Health Organization (WHO)** based on the integrative bio-psycho-social model of functioning, disability and health. Functioning and disability reflect the human experience related to the body functions, body structures, and activities and participation. It is viewed in terms of its dynamic interaction with a health condition, personal and environmental factors.

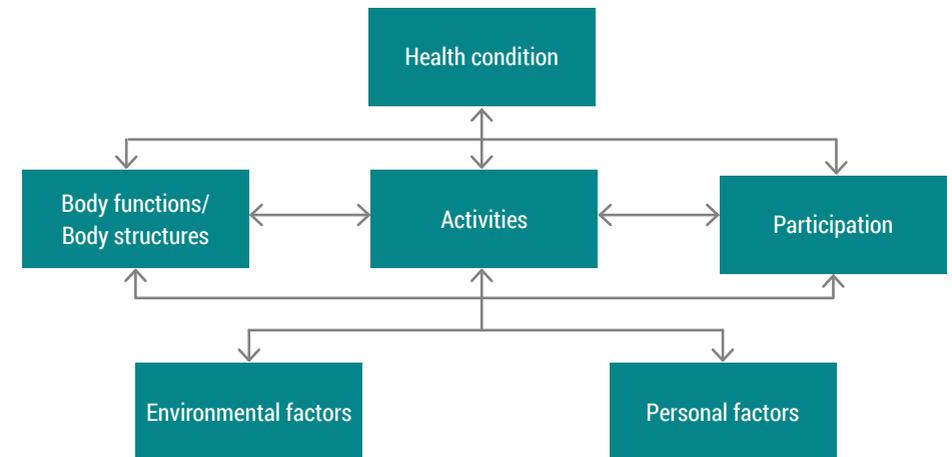


Figure 1: Bio-psycho-social model of functioning, disability and health

The ICF classification corresponds to the components of the model. Within each component, there is an exhaustive list of categories that serve as the units of the classification. ICF categories are denoted by unique alphanumeric codes and are hierarchically organised in chapter, second, third and fourth levels. When going from the chapter level to the fourth level, the category's definition becomes more detailed.

The classification also comprises so-called ICF qualifiers, which quantify the extent of a problem experienced by a person in a specific ICF category. Since environmental factors can also be facilitators, the ICF qualifier for facilitators are indicated with a plus sign.

| Generic Scale of ICF Qualifiers |   |
|---------------------------------|---|
| 0                               | NO problem (none, absent, negligible,...) 0-4%  |
| 1                               | MILD problem (slight, low,...) 5-24%  |
| 2                               | MODERATE problem (medium, fair,...) 25-49%  |
| 3                               | SEVERE problem (high, extreme,...) 50-95%   |
| 4                               | COMPLETE problem (total,...) 96-100%  |
| 8                               | not specified (used when there is insufficient information to quantify the extent of the problem) |
| 9                               | not applicable (used to indicate when a category does not apply to a particular person)           |

## ICF Core Sets

To facilitate the use of the ICF in clinical practice, it is essential to have ICF-based tools that could be integrated into the existing processes. The first step toward providing ICF-based tools for clinical practice was the development of ICF Core Sets. ICF Core Sets are shortlists of ICF categories that are considered to be most relevant for describing persons with a specific health condition or in a particular setting. In a rehabilitation setting an ICF Core Set can help guide the rehabilitation management process. ICF Core Sets have been developed for several health conditions e.g. for spinal cord injury, health condition groups e.g. for neurological conditions and for various settings. ICF Core Sets can serve as a basis when using the **ICF-based documentation tools** that follow the **Rehab-Cycle®**.

## Rehab-Cycle® and Corresponding ICF-based Documentation Tools

The Rehab-Cycle® is one approach that reflects the structured processes inherent in multidisciplinary rehabilitation management. The Rehab-Cycle® consists of an assessment phase, assignment phase, intervention phase and evaluation phase. An ICF-based documentation tool has been developed to guide each of the Rehab-Cycle® phases: the ICF Assessment Sheet, the ICF Categorical Profile, ICF Intervention Table and ICF Evaluation Display. These tools can help a multidisciplinary rehabilitation team to better understand the role of functioning within the rehabilitation process and to more comprehensively describe a person's functioning - hence support ICF-based rehabilitation management.

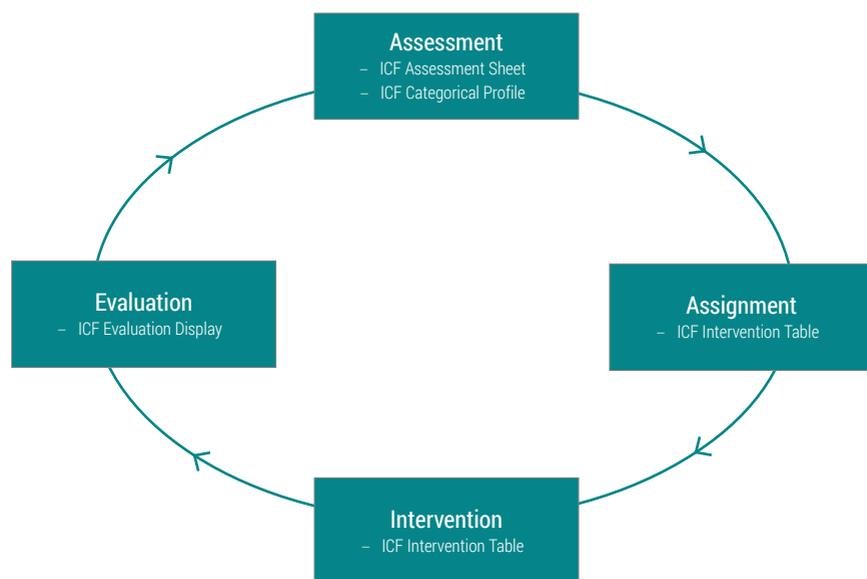


Figure 2: Rehab-Cycle®

You can find more detailed information about SCI, the ICF, ICF Core Sets, the Rehab-Cycle® and the ICF-based documentation tools on the website [www.icf-casestudies.org](http://www.icf-casestudies.org).

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## General Introduction



Spinal cord injury (SCI) is an extreme and stressful life event that can leave individuals in a state of emotional instability. The person's overall psychological well-being can be influenced not only by the stress experienced during and after the trauma, but also by his or her personal resources and coping strategies.

In consideration of available (including historical) conceptualisations of the term "stress", two pioneers of research on stress and coping, Richard Lazarus and Susan Folkman defined (psychological) stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being".<sup>1</sup> This definition takes into account the personal factors of the individual

who is experiencing stress as well as the nature of the stress-producing event. It also emphasises that the experience of stress depends on how the person perceives the event.

*"SCI is a stress-producing, life-changing event."*

### Experience of Stress after SCI

SCI is a stress-producing, life-changing event.<sup>2,3,4,5</sup> **Stressors** i.e. **stress stimuli or stress-producing environmental events**<sup>1</sup> that may cause a person with SCI to experience stress include the **inability to perform activities equally well as before the injury, social demands e.g. work, obligations of family and friends, and the physical changes associated with SCI.**<sup>6,7,8</sup>

Other stressors that can also impact a person's psychological well-being include (but are not limited to) pain, fatigue, medication, isolation, medical complications, body image, dependency, feelings of helplessness and humiliation, and cognitive problems.<sup>8,9,10</sup>

### Response to Stress after SCI

The response to stress or various stressors vary among persons and over the course of recovery; it can also fluctuate during a person's course of life.<sup>6</sup> An early emotional reaction to SCI can be denial, a reaction that prevents a person

from confronting the dramatic changes that he or she is faced with. This may be followed by other responses such as anger, sadness or even depression, anxiety and grief.<sup>4,5,8,9</sup>

*"How a person's responds to stress/stressors is associated with coping."*

How a person's responds to stress/stressors is associated with coping. Coping can be viewed as "a protective factor that facilitates adaptation to

stressful life events".<sup>11</sup> A number of studies have demonstrated that coping is an important mediator of a person's emotional adjustment to SCI.<sup>2,6</sup>

#### Box 1 | Coping

In line with their definition of stress, Lazarus and Folkman defined coping as "constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person".<sup>1</sup> This definition indicates that coping is a process that requires some sort of effort as a reaction to psychological stress, and encompasses what the person thinks or does in order to manage (minimise, avoid, tolerate, accept, master) the stressful situation.

According to Lazarus and Folkman there are two forms of coping:<sup>1</sup>

- Emotion-focused coping: strategies that focus on regulating the emotional response to psychological stress and are often employed where the person feels that he or she has no control over the situation
- Problem-focused coping: Strategies directed at managing or changing the source of stress and are often employed

where the person sees the situation as controllable

Emotion-focused coping includes a spectrum of strategies including (but not limited to) venting of emotions, acceptance, positive reappraisal, avoidance, wishful thinking, distancing, and denial.<sup>1,2,6</sup> Research has shown that persons who employ certain emotion-focused coping strategies, such as venting emotions, experience more depression and anxiety than those who employ active problem-focused coping strategies. On the other hand, emotion-focused coping such as acceptance and positive appraisal have shown to be associated with reduced psychological stress among persons with SCI.<sup>2</sup> In general, problem-focused coping is seen as more favourable; the use of these strategies have shown to lead to lower psychological problems and to a more positive mood. The degree to which each of these strategies is employed may change over time, and will

depend on the person's personal factors and nature of the stressor.<sup>1,2,4,6,7</sup>

These two forms of coping are integral elements of Lazarus and Folkman's model of stress, appraisal and coping. The original stress, appraisal and coping model has evolved to include the aspect of positive emotion and meaning-focused coping. These additional elements were introduced to the model to show what could happen after the two forms of coping are applied and the outcome is unfavourable.<sup>1,12</sup>

Basically, meaning-focused coping can help a person deal with an unfavourable outcome by drawing upon his or her beliefs, values, and goals. Meaning-focused coping could include

searching for and finding possible benefits in a particular situation, pursuing goals as a means for developing a sense of purpose, reordering of priorities to adapt to changed realities, and focusing on the positive aspects of life. In turn, such meaning-focused coping can trigger positive emotions; positive emotions have been shown to play a significant adaptational role in the stress and coping process.<sup>12</sup>

As the name of the model implies, an essential element of the stress, appraisal and coping model is appraisal i.e. how the person perceives the stress he or she is experiencing. The person's appraisal of a stressor and the resources available for dealing with it can determine the coping strategy he or she employs.<sup>1,2,12,13,14</sup>

**The stress, appraisal and coping model of Lazarus and Folkman is widely seen as applicable to persons with SCI.**<sup>2,6,13,14</sup> **Complementary to the Lazarus and Folkman model is the elaboration of coping by Elfström et. al. in their Spinal Cord Lesion Coping Strategies Questionnaire (SCL CSQ),**<sup>15</sup> previously called Spinal Cord Lesion-Related Coping Scale.<sup>16</sup> The SCL CSQ was specifically developed to assess coping efforts and behaviour in persons with SCI, and includes

items addressing "acceptance" i.e. re-evaluation of life values, "social reliance" i.e. tendency toward dependent behaviour and giving control to others, and "a fighting spirit" i.e. efforts toward independence and minimising the negative effects of SCI. **The work in developing and validating the SCL CSQ further support other research that found a stable link between acceptance and fighting spirit, and psychological well-being.**<sup>15,16</sup>

*“...while persons with SCI have a greater risk for depression and anxiety, these disorders are by no means inevitable outcomes of SCI.”*

Post-SCI stress can lead to psychological disorders, including depression and anxiety.<sup>5</sup> It had been previously thought that depression, for example, was an inevitable consequence of SCI. However, while depression is commonly reported by persons with SCI, most often occurring early following injury, there is no empirical evidence

that a person with SCI will inevitably experience depression, and the majority of persons with SCI do not develop it.<sup>4,5,13,14,17,18,19</sup> Nevertheless, since depression and anxiety are the main psychological disorders faced by persons with SCI, it would be important to highlight some relevant information about depression and anxiety in SCI.

## Box 2 | Depression and Anxiety in SCI

### Depression

Depression is a range of disorders that includes adjustment reactions with a depressive mood and major depressive disorder. A brief or short-term experience of sadness does not necessarily equate with depression. Studies have found an increased prevalence of depression i.e. 20-45% in adults with SCI compared with the general population. The occurrence of depression in persons with SCI does not seem to be directly linked with the level of injury or whether the SCI is complete or incomplete, but rather stem more from the stressors the person experiences following SCI. Pain, feelings of helplessness and lack of control seem to be predictors of depression. In addition, the risk of developing depression is higher for those with pre-SCI substance abuse and depression, as well as family history of depression and suicide. Moreover, SCI has shown to be associated with increased hospitalisation and SCI-related secondary complications, and a higher risk of premature mortality in persons with SCI.<sup>4,5,14,17,18,19</sup>

### Anxiety Disorders

Described as disorders involving real or imaginary perceptions of tension, worry, fear and vulnerability, anxiety disorders can include generalised anxiety disorder, social anxiety, acute and post-traumatic stress disorders (PTSDs).<sup>5</sup> Persons with SCI who also have an anxiety disorder may experience fear of death or of living with medical complications and disability, may worry about loss of independence, financial stability, and control etc., about physical appearance, and about losing love from friends and family.<sup>5,8</sup>

Various studies have found that the prevalence of anxiety disorders in persons with SCI is 16-30%. PTSD, a specific anxiety disorder, has shown to have an incident rate that varies between 5-50% and a prevalence rate between 7-61%.<sup>2,5,6,8,9,18</sup>

Given the elevated prevalence of depression and anxiety disorders after SCI, it would be essential to address these and other mental health issues in rehabilitation.<sup>4,5,6,13,14,18,19</sup>

### Rehabilitation Interventions

In the rehabilitation of persons with SCI, **health professionals have the important task of fostering the person's adjustment to their post-SCI situation and the development of successful coping strategies.** With regard to depression, research has shown that the way persons with SCI cope with their injury early in their rehabilitation

predicts the extent of depression experienced later.<sup>13</sup> Results of a 2016 published 21-year longitudinal study suggest that psychological interventions to address depression could reduce the risk of depression and pre-mature mortality in persons with SCI.<sup>14</sup> Thus, early screening and assessment, and timely management of depression are vital.<sup>4,14</sup>

**Interventions to manage depression and other mental health issues, and to promote adjustment following SCI are multi-faceted; determining the appropriate intervention(s) can be difficult.**<sup>18</sup> Interventions can include education, providing information on available support services and resources, psychological counselling, medication, peer mentoring and support, and ongoing long-term monitoring.<sup>4,5,14</sup>

*“...early screening and assessment, and timely management... are vital.”*

Rehabilitation interventions, especially psychological counselling and cognitive behavioural therapy, played a crucial role in this case study of Ingrid, a 37-year old woman who sustained a SCI following a mountain bike accident. The case will illustrate how Ingrid's experience of stress

Since SCI also has implications for the family of the person living with SCI e.g. changing roles, impact on sexual relationships, promoting the physical, social and emotional health of family members through support and interventions is also important.<sup>4,5</sup>

impacted on her psychological well-being and the challenges the rehabilitation team faced in their efforts to promote her psychological well-being, while highlighting the importance of individual coping strategies in the rehabilitation process.

## Ingrid's Story



Ingrid had been living an independent and successful life when a mountain bike tour changed her life completely.

At 37 Ingrid enjoyed a career in business, was involved in a relationship, and had maintained an active social life. She also belonged to a dancing group, was a member of the local volunteer fire department, and engaged in sports activities, including mountain biking. She was a beginner, mountain biking along the trails outside the city where she lived.

**During one of her first mountain biking tours alone, Ingrid was involved in a severe accident.** The accident resulted in a serious joint dislocation fracture at her 6th and 7th cervical vertebrae and stable fracture of her 2nd and 3rd vertebrae, commonly known as a “Hangman's fracture” since it was a fracture of the neck due to extreme force. Upon arrival at a spinal trauma centre, she immediately underwent two surgeries in order to stabilise her cervical spine. Both procedures were successful, and two days after the last operation she was transferred to a spinal cord injury (SCI) rehabilitation centre. To immobilise the affected

area, Ingrid had to wear a neck brace – a stiff neck brace for six weeks followed by another six weeks with a soft neck brace. Ingrid was diagnosed with **complete tetraplegia at C5 with an American Spinal Injury Association (ASIA) Impairment Scale Grade A. This meant that she had no motor or sensory functions below the level of the elbow.**

During the first two months of the initial period of rehabilitation, Ingrid was confronted with a wide range of SCI-specific impairments, limitations and restrictions. In addition to the SCI-specific problems, Ingrid contracted pneumonia and a persistent dry cough. She also developed severe circulation problems, resulting in difficulties in maintaining her blood pressure. These further limited her daily activities.

As rehabilitation continued, Ingrid experienced head, neck and shoulder pain that reduced her overall mobility and exacerbated her declining

health. A pressure sore also developed, forcing her to limit the time spent in the wheelchair. This, in turn, greatly decreased her ability to get around using the wheelchair.

*“From the start of her initial rehabilitation, she battled emotional problems, and had difficulties coping with her health and life situation.”*

The experience of having to deal with these impairments, limitations and restrictions took a heavy emotional toll on Ingrid. From the start of her initial rehabilitation, she battled emotional problems, and had difficulties coping with her health and life situation. **At the core of her emotional and coping issues was the perceived stress she experienced as a result of the uncertainties**

**related to her long-term prognosis. The range of problems Ingrid had been experiencing affected the rehabilitation process and complicated her prognosis.** At that early point in Ingrid's initial rehabilitation, her rehabilitation team was unable to make an accurate prognosis of her recovery for the first twelve months post-injury.

*“No one can tell me what I will be able to do and where I will be in twelve months.”*

*Ingrid, two months after the accident*

During the course of initial rehabilitation, Ingrid was becoming more and more emotionally unstable. Luckily she recognised this, and she requested psychological counselling. The

initiation of psychological counselling as part of the rehabilitation process was also the kick-off of a Rehab-Cycle® two months after her accident.

## Assessment



To develop a profile of Ingrid's functioning at the start of the Rehab-Cycle®, her rehabilitation team conducted a comprehensive assessment that involved a battery of discipline-specific evaluations (health professional perspective) and an interview with Ingrid to capture her perspective about her functioning (patient perspective).

Ingrid's rehabilitation team utilised the framework of the International Classification of Functioning, Disability and Health (ICF)<sup>20</sup> to document the results of the first assessment of Ingrid's functioning using the **ICF Assessment Sheet**. The ICF Assessment Sheet is an overview of the assessment results according to the ICF components of body functions and structures, activities and participation, and environmental and personal factors, and includes both the health professional and patient perspectives. Ingrid's perspective was reflected by relevant statements she made during the assessment phase of the Rehab-Cycle®.

See *“Table 1: ICF Assessment Sheet” on page 28 at the end of this booklet.*

As before the start of the Rehab-Cycle® Ingrid experienced impaired bladder and bowel functions, blood pressure instability, increasing spasticity, decreased involuntary movement reaction functions, reduced muscle power in her upper extremities, even in the areas above the level of her injury, and decreased mobility in both shoulder joints. Furthermore, a physical examination revealed persisting pressure sores.

*“Ingrid's mood swings and energy level problems were major issues that needed to be addressed during rehabilitation.”*

During the comprehensive assessment, Ingrid's emotional functioning was explored. **Emotional functioning, a category within the ICF component of body functions, played an important role in Ingrid's overall functioning and psychosocial well-being.** Ingrid indicated that her emotions swung from "highs to lows" on a daily basis; she felt that her neck pain contributed to her mood swings. Furthermore, her energy level fluctuated from day to day, often having low energy. The rehabilitation team quickly recognised that Ingrid's mood swings and energy level problems were major issues that needed to be addressed during rehabilitation.

Regarding activities and participation, Ingrid's limitations in fine hand use, hand and arm use, difficulties in transferring, dressing, and other self-care activities left Ingrid feeling extremely dependent and constrained. Further exacerbating these feelings, her wheelchair mobility was limited to only short distances. The rehabilitation team also observed that Ingrid's difficulties in changing body positions and maintaining a sitting position contributed to her mobility limitations.

*"At the time of the assessment, Ingrid was unable to cope with nor accept her health problems and new life situation."*

Inadequate coping was one of several personal factors that significantly impacted Ingrid's emotional state, and ultimately her functioning. At the time of the assessment, Ingrid was unable to cope with nor accept her health problems and new life situation. Particularly difficult for her was being totally dependent on others. Ingrid's lack of knowledge about spinal cord injury (SCI) and its

With regard to her participation in social life, Ingrid indicated that she had limited contact with others. Nevertheless, she was not interested in making friends with others in the rehabilitation centre.

Ingrid also expressed concerns regarding her vocational future. Despite her worries, her pre-injury employer showed an interest in having Ingrid return to her position at some undefined date in the future.

Ingrid's functioning status was greatly influenced by environmental and personal factors. For example, although she received a lot of support from her family and friends, Ingrid felt that her family's support was sometimes "too much", overwhelming her with their attention. Another major concern was the lack of wheelchair accessibility in her flat. This left open questions about where she would be able to live upon discharge from the rehabilitation centre. Uncertainty about finding a new place of residence contributed to Ingrid's difficulties in coping with her new life situation.

implications for her life may have contributed to her coping and emotional problems.

The results of the comprehensive assessment were taken into account in creating a profile of Ingrid's functioning, as well as for goal-setting and determining the targets Ingrid and her rehabilitation team intended to address with interventions.

## Goal-setting/Determination of Intervention Targets

As a guide for creating Ingrid's functioning profile, for setting goals and for determining intervention targets based on the first assessment of Ingrid's functioning, the rehabilitation team utilised the ICF Core Set for spinal cord injury (SCI) in the post-acute context.

The **brief version of the ICF Core Set for SCI** in the post-acute context is a selection of 25 categories from the whole International Classification of Functioning, Disability and Health (ICF) that are considered the most relevant for describing the functioning of persons with SCI in post-acute settings, such as first rehabilitation.<sup>20,21</sup> These 25 categories were rated using ICF qualifiers to create an **ICF Categorical Profile**, a visual depiction (bar chart) of the results of the first comprehensive assessment of Ingrid's functioning. See "Table 2: ICF Categorical Profile" on page 30 at the end of this booklet.

Ingrid's rehabilitation team also used the ICF Categorical Profile to document the long-term and short-term goals that the team set together with Ingrid. As a long-term **global goal** they defined 'health maintenance and community reintegration'. To help achieve the global goal, **a service-program goal** i.e. the goal Ingrid and her rehabilitation team intended to achieve at the end of the Rehab-Cycle®, was defined as 'optimal independence in daily living'. They also set four short-term **cycle goals**, each contributing toward reaching the service-program goal:

- Cycle goal 1: Improved mobility
- Cycle goal 2: Improved use of fingers, hands and arms
- Cycle goal 3: Increased independence in self-care
- Cycle goal 4: Psychosocial well-being

Cycle goal 4 'psychosocial well-being', a major theme in Ingrid's Rehab-Cycle® and the focus of this case study, included emotional stability and optimal coping.

In defining these long-term and short-term goals, the rehabilitation team also considered Ingrid's personal aims.

The base-line status of all of the goals were also rated using ICF qualifiers. At the time of the assessment, all of Ingrid's cycle goals, except for cycle goal 3 'increased independence in self-care', were rated with an ICF qualifier of 3 i.e. severe problem. Self-care posed a complete problem for Ingrid; thus cycle goal 3 was rated with an ICF qualifier of 4.

## Determining Intervention Targets

ICF qualifiers were also used to define goal values for the ICF categories that corresponded to the long-term and short-term goals set; these categories are called **intervention targets**. The goal values defined were what Ingrid and her rehabilitation team had intended to achieve after the intervention phase of the Rehab-Cycle®. The intervention targets that corresponded to cycle goal 4 'psychosocial well-being' included:

- b126 Temperament and personality functions (e.g. optimism)
- b130 Energy and drive functions (e.g. energy level)
- b152 Emotional functions (e.g. range of emotions)
- d240 Handling stress and other psychological demands
- d750 Informal social relationships
- d760 Family relationships
- e310 (Support of) immediate family

- e410 Individual attitudes of immediate family members

The following personal factors were also defined as intervention targets, since they were seen as essential to the success of cycle goal 4:

- Acceptance of health and life situation
- Knowledge of SCI
- Relating to her own body
- Coping strategies

The intervention targets that corresponded to all the cycle goals can be seen on the ICF Categorical Profile. See *"Table 2: ICF Categorical Profile" on page 30 at the end of this booklet.*

In the intervention phase of the Rehab-Cycle® each intervention target was assigned to one or more members of the rehabilitation team, who conducted appropriate interventions.

## Assignment and Intervention

In Ingrid's Rehab-Cycle®, a psychologist was assigned to address her emotional and psychological needs, focusing primarily on Ingrid's cycle goal 4 'psychosocial well-being'.

One important component of the psychologist's interventions at the beginning of the Rehab-Cycle®

was cognitive behavioural therapy (CBT). **The psychologist met with Ingrid two to three times a week in CBT sessions.** CBT was performed to help Ingrid increase her emotional stability, promote the development of relationships with others, support her ability to carry out a daily routine, and optimise Ingrid's handling of stress.

### Box 3 | Cognitive Behavioural Therapy

Considered "a talking therapy"<sup>22</sup> cognitive behavioural therapy (CBT), a structured approach that incorporates various techniques focussed on education, problem-solving, and emotional and behavioural change on the part of the person, has shown to be helpful in reducing depression in persons living with spinal cord injury (SCI) and in fostering their short- and long-term adjustment to SCI. In SCI, CBT is designed to help persons with SCI develop coping strategies to deal with the challenges they face.<sup>4,5,6,18</sup>

In CBT, the patient/client together with the therapist seeks to pinpoint and understand the patient/client's problems in terms of the dynamic interaction between thoughts, feelings and behaviour. CBT can include, among other things, strategies to reduce irrational or negative perceptions, reduce "all or nothing" thinking, and address issues of assertiveness. It ranges from structured individual psychotherapy to self-help material. It also calls for providing instruction on various topics, such as on relaxation or social skills,

and facilitates a person's participation in rewarding activities.<sup>4,5,6,18,22</sup>

A number of factors can impact the effective delivery of CBT:<sup>22</sup>

- A safe and trusting therapeutic relationship
- A collaborative partnership in which both the patient/client and the therapist each have a contribution to make
- The presentation of problems and situations that draws information from assessments, theory as well as evidence-based practice
- A style of questioning that gently explores how and what the person thinks, while also fostering the person's own discovery of alternative ideas or way of thinking
- Having the opportunity to try out and practice the lessons learned during CBT

CBT in a group can be a practical and cost-effective way to practice social skills, be exposed to other viewpoints, and offer peer support.<sup>4,6,18</sup>

Research has indicated that interventions such as CBT can improve a patient/client's mood, lower alcohol and drug use, reduce medical complications related to SCI, and

maintain these improvements for at least 2 years. Furthermore, CBT has shown to shorten hospital stay as well as reduce the frequency of clinical re-admissions.<sup>6,18</sup>

In addition to providing CBT, the **psychologist also conducted Feldenkrais therapy sessions** with Ingrid once a week. Feldenkrais therapy<sup>23</sup> was intended to help improve Ingrid's energy and drive functions as well as how she perceives her own body. The **psychologist also took the lead in the efforts toward improving Ingrid's acceptance of her SCI and new life situation. Part of these efforts included increasing Ingrid's knowledge about SCI**, for which every member of the rehabilitation team shared the responsibility. Each member of the team also contributed to assisting Ingrid develop effective coping strategies.

**Beyond the interventions to address Ingrid's emotional and psychological needs i.e. cycle goal 4 intervention targets, the physical therapist (PT) and the occupational therapist (OT) provided interventions aimed at cycle goals 1 'improved mobility' and 2 'improved use of fingers, hands and arms'**. For example, the PT conducted prop-up training as well as movement reaction training to help Ingrid improve the ability to maintain a sitting position. The OT provided passive movements of selected joints to improve fine hand use and therapeutic games to improve hand and arm use. To improve overall mobility, muscle relaxation therapy was conducted to help reduce Ingrid's neck pain. Water therapy in the pool not only addressed the cycle goal 1 intervention target of muscle tone functions, it was also provided to help Ingrid become more aware of her altered body (as a result of her SCI).

**While the majority of the intervention targets was addressed by one member of the rehabilitation team, the responsibility for selected intervention targets was shared by several members of the team.** For example, the nurse, the PT and OT each provided interventions to help Ingrid improve her ability to change body positions. The nurse and OT also shared the responsibility for helping Ingrid improve her transferring skills as well as look after her health better, one of several intervention targets associated with cycle goal 3 'increased independence in self-care'. The other intervention targets related to self-care were primarily the responsibility of the nurse.

**Along with the standard members of the rehabilitation team i.e. physician, nurse, PT, OT and psychologist, a nutritionist and vocational counsellor were also part of Ingrid's rehabilitation team.** To assist Ingrid with weight maintenance the nutritionist advised Ingrid on the ideal dietary plan given her activity level, and helped Ingrid monitor her weight throughout the Rehab-Cycle®. To support Ingrid in clarifying her vocational options, a vocational counsellor was in contact with Ingrid's former employer.

In addition to the clarification of Ingrid's future employment prospects, other issues related to community reintegration were also addressed during the Rehab-Cycle®. For example, both the social worker and the OT collaborated on exploring the possibilities of a wheelchair-accessible place to live after Ingrid's discharge from the rehabilitation centre.

The interventions and the corresponding intervention targets, as well as the rehabilitation team members who were responsible for implementing the interventions were documented on the **ICF Intervention Table**. See "Table 3: ICF Intervention Table" on page 34 at the end of this booklet.

The interventions were conducted over a three-month period. About halfway through this time period, a major event took place that posed a significant set-back to Ingrid's rehabilitation – Ingrid's

*“...a major event took place that posed a significant set-back to Ingrid's rehabilitation – Ingrid's boyfriend, a close and key person in her life broke up with her.”*

Ingrid regularly felt overextended, repeatedly missing therapy sessions and other activities. In response, the team psychologist intensified CBT, counselling on coping strategies, and Feldenkrais therapy. Not only did the frequency of these therapies increase, more effort was made at funnelling

boyfriend, a close and key person in her life, broke up with her. This life event negatively affected both her physical functioning and psychological well-being. As a result of the break-up, Ingrid's mood swings were exacerbated with longer depressive episodes, and getting through the day became more physically and emotionally challenging. Furthermore, she became increasingly frustrated and stressed out after realising that many of the goals set would most likely not be achieved within the Rehab-Cycle®.

Ingrid's personal resources. Moreover, the other members of the rehabilitation team reduced the number of their therapy sessions.

At the end of the three-month intervention phase, Ingrid's functioning was re-evaluated.

## Evaluation

After completing the intervention phase of the Rehab-Cycle® Ingrid's functioning was re-evaluated to assess the extent to which the goals she and her rehabilitation team had set at the beginning of the Rehab-Cycle® were achieved.

The assessment at the end of Ingrid's Rehab-Cycle® concluded five months of rehabilitation following her accident. While the first two months focused on the recovery of physical functioning, the last three months (time period of the Rehab-Cycle®) focused on increasing Ingrid's independence in daily living, including improving her emotional stability and psychological well-being.

The results of the final assessment was documented on the **ICF Evaluation Display**, a "before and after" visualisation (bar chart) of Ingrid's functioning at the beginning and at the end of the Rehab-Cycle®. It also displays whether the goals Ingrid and her rehabilitation team had set were achieved. See "Table 4: ICF Evaluation Display" on page 36 at the end of this booklet.

The assessment at the end of the Rehab-Cycle® revealed that **little progress had been made with regard to Ingrid's emotional stability and psychological well-being**. Besides having to cope with her spinal cord injury (SCI), Ingrid also had to cope with the break-up of a significant relationship. The break-up with her boyfriend was a major stress factor that led to Ingrid's increased difficulties in handling stress. In particular, it negatively affected her participation in the rehabilitation process. Perceiving her rehabilitation schedule as overwhelming and exhausting, she regularly missed therapy sessions. As a result of continuing problems in coping and handling stress,

Ingrid failed to achieve the intervention targets of d240 Handling stress and other psychological demands and coping strategies (personal factor), and consequently also cycle goal 4 'psychosocial well-being'. See Ingrid's ICF Evaluation Display (see "Table 4: ICF Evaluation Display" on page 36 at the end of this booklet).

*"It's all quite hard to accept. The daily interventions just exhaust me. On top of that I am impatient, I feel sad most of the time, and there is lots of uncertainty...Nothing is improving as I had expected, and I constantly feel as though I'm waiting for things to get better...I know I have to be patient, but I find this very difficult to accept.*

*Ingrid, at the end of the Rehab-Cycle®*

Despite this statement from Ingrid, the final assessment did show an increase in her acceptance of her health situation, as compared with the first assessment. This may have been related to Ingrid's expanded knowledge of SCI and improvement in relating to her own body. Both of these intervention targets were namely achieved at the end of the Rehab-Cycle®.

The final assessment also revealed that Ingrid made some modest gains in self-care. Although Ingrid achieved most of the goals set for the intervention targets in self-care, e.g. d510 Washing oneself, d520 Caring for body parts, and d540

Dressing, the progress that was made was from being completely limited (goal value of 4) to being severely limited (goal value of 3). Moreover, she continued to require assistance for these activities. Nevertheless, the rehabilitation team considered cycle goal 3 'increased independence in self-care' as achieved, since the majority of the intervention target goals was met.

The **gains in self-care was related to improved use of fingers, hands and arms**; gains in fine

hand use, and hand and arm use enabled Ingrid to perform some self-care activities with greater skill. Improved use of fingers, hands and arms was based on gains made in b7300 Power of isolated muscles and muscle groups, b755 Involuntary movement reaction functions, and b7603 Supportive functions of arm or leg. Overall, Ingrid's rehabilitation team considered cycle goal 2 'improved use of fingers, hands and arms' as achieved.

*"Although Ingrid was able to better her skill at manoeuvring a manual wheelchair, transferring herself from the wheelchair to the bed and vice versa remained a major problem."*

**In spite of improvements in some of the mobility-related intervention targets** e.g. d465 Moving around using equipment, **cycle goal 1 'improved mobility' was not reached**. Although Ingrid was able to better her skill at manoeuvring a manual wheelchair, transferring herself from the wheelchair to the bed and vice versa remained a major problem. In setting the goal value for mobility at "1" (mild limitations), Ingrid and her rehabilitation team had high hopes for a major improvement

in mobility. Impediments to improvements in mobility were Ingrid's difficulty in maintaining her blood pressure and continued spasticity.

With regard to spasticity, Ingrid benefited from the therapy sessions in the pool. Unfortunately, the reduction in spasticity remained only during the therapy session and returned once the intervention stopped.

*"...the results of the final assessment of this particular Rehab-Cycle® facilitated the planning of subsequent interventions."*

At the end of the Rehab-Cycle® goal achievement and her functioning gains were less than what Ingrid and her rehabilitation team had hoped for. Nevertheless, Ingrid's functioning did improve,

even if only slightly, and the results of the final assessment of this particular Rehab-Cycle® facilitated the planning of subsequent interventions.

## Discussion

The major life changes and the stress that accompany a spinal cord injury (SCI) can contribute to increasing the risk of developing emotional and other psychosocial problems.

Adapting to SCI-related challenges and overcoming emotional and psychosocial problems is a time and energy-intensive process. **Persons with SCI need sufficient time to develop effective**

### Overcoming Stressors

**This case study of Ingrid emphasises the importance of adapting interventions to evolving and fluctuating stress and coping. Stressors as well as the ability to activate personal resources and supports, and other coping strategies, can fluctuate with a person's circumstances** – requiring at times less, more or different interventions. In Ingrid's case, she had difficulties accepting her health condition and her new life situation, especially the dependency that was associated with being a patient and a person with SCI. Ingrid's difficulty in accepting her new life situation compounded other factors, including emotional instability, blocking her from achieving many of the rehabilitation goals she and her rehabilitation team set.

From a stress appraisal model perspective, the underachievement of rehabilitation goals and minimal improvement in Ingrid's functioning reflected a low capacity for overcoming specific stressors i.e. living with complete tetraplegia and corresponding impairments and limitations in functioning, and uncertainty about her prognosis

**and coping strategies and to learn to funnel personal resources in order to optimally confront new and often multiple stressors following SCI.**

and prospects for community integration. The inability to overcome these stressors exacerbated her emotional instability, and in turn, her emotional instability further inhibited her progress – creating a vicious circle.

Another stressor that underscored the uncertainty she experienced about her future was the break-up with her boyfriend; this was one source of support she was no longer able to depend on. Luckily, Ingrid possessed other sources of support – a network of friends, a supportive family and a skilled and knowledgeable team of rehabilitation professionals – who were available to help Ingrid cope with her situation. **Having available supports is not enough – key is activating these supports as well as personal resources in implementing coping strategies and in stabilising emotional functioning.** In Ingrid's case, expanded knowledge about SCI and implications for her daily life was one personal resource that may have contributed to increasing her acceptance of her situation (even if the increase is only slight).

### Appraising Stressors

**The appraisal of the stressors i.e. how stressors are perceived, can impact the strategies employed and the steps taken in overcoming the stressors.** In Ingrid's case, her negative perception

of her uncertain prognosis and prospects for further improvement in functioning became an obstacle to her psychological well-being.

### Addressing the Impact of Stressors

Findings of a 21-year longitudinal study on psychological impact, coping strategies and cognitive appraisal in persons with SCI showed that coping strategies a person with SCI employs early on after injury is predictive of long-term psychological status (distress). The investigators emphasised the need for early screening of possible psychological impact.<sup>14</sup> This supports previous findings.<sup>13</sup> Therefore, it is essential that **members of the rehabilitation team are aware of the signs and symptoms that indicate possible emotional and other psychosocial problems, possibly even anxiety and/or depression.**

In the same longitudinal study the investigators found that higher depression levels were associated with more frequent use of maladaptive coping strategies rather than coping strategies that reinforce positive interpretation of situations, growth and active coping. The investigators highlighted the importance of providing support and services, including peer counselling, in rehabilitation settings and in the community.<sup>14</sup> Given this, it would also be important that the rehabilitation team implements approaches and interventions that could help persons with SCI to develop and employ positive and adaptive coping strategies, as well as plan for possible interventions after discharge from the rehabilitation institution.<sup>5,7,13,24</sup>

*“...important that the rehabilitation team implements approaches and interventions that could help persons with SCI to develop and employ positive and adaptive coping strategies...”*

In Ingrid's case, the rehabilitation team recognised early on that psychological support was essential for rehabilitation success, and planned interventions accordingly. Moreover, they tailored the interventions to adjust to Ingrid's changing psychological needs. Despite these efforts, improvements in Ingrid's functioning was shown to be marginal at the end of the Rehab-Cycle®. Nevertheless this Rehab-Cycle® was the starting point for further assessments

and interventions to support Ingrid on her long road to psychological well-being, independence in daily living, and community reintegration.

This case study illustrated the importance of addressing psychological issues throughout the rehabilitation process and adapting the rehabilitation process to the individual needs and resources of the person with SCI.

## Annex

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- *Table 1: ICF Assessment Sheet*
- *Table 2: ICF Categorical Profile*
- *Table 3: ICF Intervention Table*
- *Table 4: ICF Evaluation Display*
- *Literature*
- *Questions*

Table 1: ICF Assessment Sheet

| ICF Assessment Sheet  |  |
|---|--|
| <p><b>Patient Perspective</b></p> <ul style="list-style-type: none"> <li>- Sometimes I sleep well, sometimes not</li> <li>- My emotions go up and down</li> <li>- Some days I feel energetic, some days not</li> <li>- I have some pain in the muscles of my neck</li> <li>- I have no control over my bladder and bowel</li> <li>- I can't feel my legs, feet, pelvic and back</li> <li>- I have partial sensitivity in the arms</li> <li>- I have severe problems with my blood pressure</li> <li>- Sometimes I am exhausted</li> <li>- I can't control any muscle activity in my legs</li> <li>- I have little muscle power in my arms</li> <li>- I have spasticity in my legs</li> <li>- I have pressure sores</li> </ul>                   | <p><b>Activities &amp; Participation</b></p> <ul style="list-style-type: none"> <li>- I have no functioning in my fingers</li> <li>- I can't grip anything with my hands</li> <li>- I can't hold bottles nor handle objects with my hands</li> <li>- I can't operate the mobile phone</li> <li>- Writing emails takes a lot of time</li> <li>- I can coordinate my arms a little bit</li> <li>- I can't get out of bed by myself</li> <li>- I can't transfer myself</li> <li>- I can move the wheelchair only for very short distances</li> <li>- I can't take care of my body by myself</li> <li>- I can't dress myself</li> <li>- I try to eat independently</li> <li>- I am dependent on others</li> <li>- I have little contact with other people, but I want to improve this</li> <li>- I am currently not socialising</li> <li>- I want to work again, but I currently don't know what kind of work I will do in the future</li> </ul>   |
| <p><b>Body Functions &amp; Structures</b></p> <ul style="list-style-type: none"> <li>- Moderately impaired temperament and personality functions</li> <li>- Substantially reduced energy and drive</li> <li>- Unstable emotional functions</li> <li>- Unstable blood pressure</li> <li>- Increased body weight</li> <li>- Moderately reduced mobility in shoulder joint functions in the upper extremity</li> <li>- Considerably reduced muscle power</li> <li>- Increasing spasticity</li> <li>- Severely impaired involuntary movement reaction functions</li> <li>- Completely impaired control of voluntary movements</li> <li>- Severely impaired supportive functions of the arms</li> <li>- Persisting grade 1 pressure sores</li> </ul> | <ul style="list-style-type: none"> <li>- Carrying out daily routine seems to be exhausting for her</li> <li>- Severe difficulty in handling the stress of daily routine</li> <li>- Complete limitations in changing basic body positions</li> <li>- Severe difficulty in maintaining a sitting position</li> <li>- Complete limitations in transferring oneself</li> <li>- Complete limitations in fine hand use</li> <li>- Severe limitations in hand and arm use</li> <li>- Severe difficulty in moving around using the wheelchair</li> <li>- Complete limitations in washing herself</li> <li>- Complete limitations in caring for skin</li> <li>- Complete limitations in toileting</li> <li>- Complete limitations in dressing herself</li> <li>- Severe difficulty in eating</li> <li>- Severe difficulty in looking after her health</li> <li>- Moderate difficulty in family relationships</li> <li>- Severe difficulty in social relationships</li> <li>- Remunerative employment has to be clarified</li> </ul> |
| <p><b>Health Professional Perspective</b></p>   | <p><b>Environmental Factors</b></p> <ul style="list-style-type: none"> <li>- Need to clarify the appropriate wheelchair</li> <li>- Flat not adapted for wheelchair, is on the 3rd floor and has no elevator</li> <li>- Parents are supportive – sometimes too supportive</li> <li>- Supportive neighbour</li> <li>- Supportive friends</li> <li>- Pre-injury employer may be willing to have Ingrid return to work in the future</li> <li>- Social workers are in communication with the insurance providers</li> </ul>  |
|   | <p><b>Personal Factors</b></p> <ul style="list-style-type: none"> <li>- 37 years old</li> <li>- Was a businesswoman before her accident</li> <li>- Living alone, but had a boyfriend</li> <li>- Has parents and a sister</li> <li>- Used to be sportive</li> <li>- Has difficulties accepting her situation</li> <li>- Insufficient knowledge about spinal cord injury</li> <li>- Tends to be impatient</li> </ul>   |



| ICF categories   | ICF Qualifier |    |    |    |   |         |   |   |   |  | Goal Relation | Goal value |   |     |    |
|--|---------------|----|----|----|---|---------|---|---|---|--|---------------|------------|---|-----|----|
|  | facilitator   |    |    |    |   | barrier |   |   |   |  |               |            |   |     |    |
|  | 4+            | 3+ | 2+ | 1+ | 0 | 1       | 2 | 3 | 4 |  |               |            |   |     |    |
| e110   |               |    |    |    |   |         |   |   |   |  |               |            |   |     |    |
| Products or substances for personal consumption        |               |    |    |    |   |         |   |   |   |  |               |            |   |     |    |
| e1151  |               |    |    |    |   |         |   |   |   |  |               |            | G | 2+  |    |
| Assistive products... for personal use in daily living |               |    |    |    |   |         |   |   |   |  |               |            |   | 1,2 | 2+ |
| e1201  |               |    |    |    |   |         |   |   |   |  |               |            |   | 1   | 2+ |
| Assistive products--for personal...mobility ...        |               |    |    |    |   |         |   |   |   |  |               |            |   | 4   | 2+ |
| e310   |               |    |    |    |   |         |   |   |   |  |               |            |   | 4   | 2+ |
| Immediate family                                       |               |    |    |    |   |         |   |   |   |  |               |            |   | 4   | 2+ |
| e410   |               |    |    |    |   |         |   |   |   |  |               |            |   | SP  | 4+ |
| Individual attitudes of immediate family members       |               |    |    |    |   |         |   |   |   |  |               |            |   | 4   | 0  |
| e580   |               |    |    |    |   |         |   |   |   |  |               |            |   | 4   | 1  |
| Health services, systems and policies                  |               |    |    |    |   |         |   |   |   |  |               |            |   | 4   | 0  |
| pf   |               |    |    |    |   |         |   |   |   |  |               |            |   | 4   | 0  |
| Acceptance of health and life situation                |               |    |    |    |   |         |   |   |   |  |               |            |   | 4   | 0  |
| pf   |               |    |    |    |   |         |   |   |   |  |               |            |   | 4   | 0  |
| Knowledge of spinal cord injury                        |               |    |    |    |   |         |   |   |   |  |               |            |   | 4   | 0  |
| pf   |               |    |    |    |   |         |   |   |   |  |               |            |   | 4   | 0  |
| Relating to her own body                               |               |    |    |    |   |         |   |   |   |  |               |            |   | 4   | 0  |
| pf   |               |    |    |    |   |         |   |   |   |  |               |            |   | 4   | 0  |
| Coping strategies                                      |               |    |    |    |   |         |   |   |   |  |               |            |   | 4   | 0  |

**Table 2.** ICF Categorical Profile; ICF Qualifier: rate the extent of problems (0 = no problem to 4 = complete problem) in the components of body functions (b), body structures (s), activities and participation (d) and the extent of positive (+) or negative impact of environmental (e) and personal factors (pf); Goal relation: 1, 2, 3, 4 refer to Cycle Goal 1, 2, 3, 4; SP refers to the Service-Program Goal; G refers to the Global Goal; Goal value refers to the ICF qualifier to achieve after an intervention. Note: This table only displays an excerpt of the ICF Categorical Profile; only the categories that are associated with a goal and for which a goal value has been identified (i.e. intervention targets) are shown.

Table 3: ICF Intervention Table

| ICF Intervention Table     |   |   |  |       |    |    |       |    |                       |             |            |             |   |
|----------------------------|---|---|--|-------|----|----|-------|----|-----------------------|-------------|------------|-------------|---|
|                            | Intervention target   | Intervention  | Doc  | Nurse | PT | OT | Psych | SW | Others                | First value | Goal value | Final value |   |
| Body functions/structures  | b126  | Temperament and personality functions   |  |       |    |    | x     |    |                       | 2           | 1          | 3           |   |
|                            | b130  | Energy and drive functions  |  |       |    |    | x     |    |                       | 3           | 2          | 3           |   |
|                            | b152  | Emotional functions   |  |       |    |    | x     |    |                       | 3           | 2          | 2           |   |
|                            | b280  | Sensation of pain (neck)  |  |       | x  |    |       |    |                       | 1           | 0          | 1           |   |
|                            | b4202   | Maintenance of blood pressure   |  | x     |    |    |       |    |                       | 3           | 1          | 2           |   |
|                            | b440  | Respiration functions   |  |       | x  |    |       |    |                       | 0           | 0          | 0           |   |
|                            | b530  | Weight maintenance functions  |  |       |    |    |       |    | Nutritionist          | 3           | 2          | 2           |   |
|                            | b7100   | Mobility of a single joint (shoulder)   | Passive movement of shoulder joint, Stretching                         |       | x  |    |       |    |                       |             | 2          | 0           | 1 |
|                            | b7150   | Stability of a single joint (shoulder)  | Passive movement of shoulder joint, Stretching                         |       | x  |    |       |    |                       |             | 1          | 0           | 1 |
|                            | b7300   | Power of isolated muscles and muscle groups   | Muscle power training  |       | x  |    |       |    |                       |             | 3          | 2           | 2 |
|                            | b735  | Muscle tone functions   | Water therapy in pool  |       | x  |    |       |    |                       |             | 2          | 1           | 2 |
|                            | b755  | Involuntary movement reaction functions   | Movement reaction training   |       | x  |    |       |    |                       |             | 3          | 2           | 1 |
|                            | b7603   | Supportive functions of arm or leg  | Prop-up training   |       | x  |    |       |    |                       |             | 3          | 2           | 2 |
|                            | s810  | Structure of areas of skin  | Skin control and wound dressing  | x     |    |    |       |    |                       |             | 1          | 0           | 0 |
| d230                       | Carrying out daily routine  | Organisation<br>Behavioural therapy approach  | x  |       |    |    | x     |    |                       | 3           | 1          | 3           |   |
| d240                       | Handling stress and other psychological demands                               | Behavioural therapy approach  |  |       |    |    | x     |    |                       | 3           | 1          | 3           |   |
| d410                       | Changing basic body positions   | Training changing body positions  |  | x     | x  | x  |       |    |                       | 4           | 3          | 3           |   |
| d4153                      | Maintaining a sitting position  | Prop-up training, Movement reaction training  |  | x     |    |    |       |    |                       | 3           | 2          | 2           |   |
| d420                       | Transferring oneself  | Transfer training   |  |       | x  | x  |       |    |                       | 4           | 3          | 4           |   |
| Activities / Participation | d440  | Fine hand use   |  |       |    |    |       |    |                       |             |            |             |   |
|                            | d445  | Hand and arm use  | Adjustment & control of braces<br>Passive movements of selected joints |       |    |    | x     |    |                       | 4           | 3          | 3           |   |
|                            | d465  | Moving around using equipment   | Therapeutic games  |       |    |    |       |    |                       | 3           | 2          | 2           |   |
|                            | d510  | Washing oneself   | Wheelchair training, Sport   |       |    | x  |       |    |                       | 3           | 2          | 2           |   |
|                            | d520  | Caring for body parts   | Support in washing, instruction  |       | x  |    |       |    |                       | 4           | 3          | 3           |   |
|                            | d5300   | Regulating urination  | Support in caring for body parts                                       |       | x  |    |       |    |                       | 4           | 3          | 3           |   |
|                            | d5301   | Regulating defecation   | Support in toileting   |       | x  |    |       |    |                       | 4           | 3          | 3           |   |
|                            | d540  | Dressing  | Support in toileting   |       | x  |    |       |    |                       | 4           | 3          | 4           |   |
|                            | d550  | Eating  | Support in dressing, instruction                                       |       | x  |    |       |    |                       | 4           | 3          | 3           |   |
|                            | d570  | Looking after one's health  | Assistance and instruction   |       | x  |    |       |    |                       | 3           | 1          | 2           |   |
|                            | d610  | Acquiring a place to live   | Assistance and instruction   |       | x  |    |       |    |                       | 3           | 1          | 2           |   |
|                            | d750  | Informal social relationships   | Counselling and organisation   |       |    |    | x     | x  |                       | 2           | 0          | 2           |   |
|                            | d760  | Family relationship   | Behavioural therapy approach   |       |    |    |       | x  |                       | 3           | 2          | 3           |   |
|                            | d850  | Remunerative employment   | Behavioural therapy approach   |       |    |    |       | x  |                       | 2           | 1          | 4           |   |
| e110                       | Products or substances for personal consumption                               | Clarification of vocational prospects with former employer, English course  |  |       |    |    |       |    | Vocational Counsellor | 4           | 3          | 3           |   |
| e1151                      | Assistive products and technology for personal use in daily living            | Medication  |  |       |    |    |       |    |                       | 1+          | 2+         | 2+          |   |
| e1201                      | Assistive products and technology for personal... mobility and transportation | Counselling and organisation of assistive devices   |  |       |    |    |       |    |                       | 2           | 2+         | 2+          |   |
| e310                       | Immediate family  | Counselling on choice of wheelchair   |  |       |    |    |       |    |                       | 2           | 2+         | 2+          |   |
| e410                       | Individual attitudes of immediate family members                              | Psychological counselling   |  |       |    |    | x     |    |                       | 1+          | 2+         | 3           |   |
| e580                       | Health services, systems and policies   | Psychological counselling   |  |       |    |    | x     |    |                       | 2           | 2+         | 2           |   |
| pf                         | Acceptance of health situation  | Clarification of insurance coverage   |  |       |    |    |       |    |                       | 2+          | 4+         | 3+          |   |
| pf                         | Knowledge of spinal cord injury   | Feldenkrais therapy   |  |       |    |    | x     |    |                       | 2           | 0          | 0           |   |
| pf                         | Relating to her own body  | Education and counselling   |  | x     | x  | x  | x     |    |                       | 2           | 1          | 2+          |   |
| pf                         | Coping strategies   | Feldenkrais therapy, Water therapy in pool<br>Behavioural therapy approach, instruction, Psychological counselling, |  |       |    |    | x     |    |                       | 2           | 0          | 0           |   |
|                            |   |   |  | x     | x  | x  | x     |    |                       | 2           | 0          | 2           |   |
| Environmental factors      | e110  | Products or substances for personal consumption   |  |       |    |    |       |    |                       |             |            |             |   |
|                            | e1151   | Assistive products and technology for personal use in daily living  |  |       |    |    |       |    |                       |             |            |             |   |
|                            | e1201   | Assistive products and technology for personal... mobility and transportation                                       |  |       |    |    |       |    |                       |             |            |             |   |
|                            | e310  | Immediate family  |  |       |    |    |       |    |                       |             |            |             |   |
|                            | e410  | Individual attitudes of immediate family members  |  |       |    |    |       |    |                       |             |            |             |   |
|                            | e580  | Health services, systems and policies   |  |       |    |    |       |    |                       |             |            |             |   |

Table 3: ICF Intervention Table. Doc = Physician; PT = Physical Therapist; OT = Occupational Therapist; Psych = Psychologist; SW = Social Worker. The first value refers to the rating at the initial assessment, the goal value refers to the rating that should be achieved after the intervention, and the final value refers to the actual rating at the second/final assessment or evaluation. ICF qualifiers were used to determine these ratings (0 = no problem to 4 = complete problem) in the intervention targets. For the intervention targets representing the environmental and personal factors, the plus sign next to the value indicates a facilitator.





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### Questions

- Q1. How can the experience of stress be defined? *(Refer to page 8 for the answer.)*
- Q2. Describe the two types of coping strategies proposed by Richard Lazarus and Susan Folkman. *(Refer to page 9 for the answer.)*
- Q3. What is the prevalence of depression and anxiety in persons with spinal cord injury? *(Refer to page 11 for the answer.)*
- Q4. In Ingrid's case, she and her rehabilitation team set 'psychosocial well-being' as cycle goal 4. Name the intervention targets that correspond to this cycle goal. *(Refer to page 18 for the answer.)*
- Q5. Explain how Ingrid's case illustrated the importance of addressing psychological issues throughout the rehabilitation process and beyond. *(Refer to page 25 for the answer.)*



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