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CHAPTER 1

# Guiding principles in neurological rehabilitation

*Sheila Lennon and Clare Bassile*

## INTRODUCTION

Neurological rehabilitation is a process that assists individuals who experience disability to achieve and maintain optimal function and health in interaction with their environment (WHO 2001). It requires an active partnership between the patient, their family and a team of health and social care professionals.

The role of the physiotherapist working in neurology is to help the patient experience and relearn optimal movement and functional activity. Movement re-education and the practice of functional activity are two essential components of neurological physiotherapy.

Physiotherapists use the process of clinical reasoning combined with current evidence and the patient and carer's perspective to assess, develop and evaluate an appropriate plan of care for each patient (Fig. 1.1). Assessment is always the starting point for clinical reasoning (see Chapter 4). This assessment process is used to guide intervention by identifying clinical problems. The rehabilitation team together with patient and his or her family collaboratively agree on joint treatment goals before devising a treatment plan composed of interventions that should be based on the best available evidence. Standardised outcome measures with published reliability, validity and sensitivity should be used to establish a baseline of performance before rehabilitation, then at key strategic points to document change as a result of interventions.

## NEUROLOGICAL TREATMENT APPROACHES

Historically the content, structure and aims of physical therapies have been based on therapist preference for a specific treatment approach, such as the Bobath concept. A Cochrane review by Pollock et al (2014) has reiterated that physical rehabilitation should not be limited to named approaches, but rather should be composed of evidence-based physical techniques, regardless of historical or philosophical origin. Thus components selected within therapy sessions should be

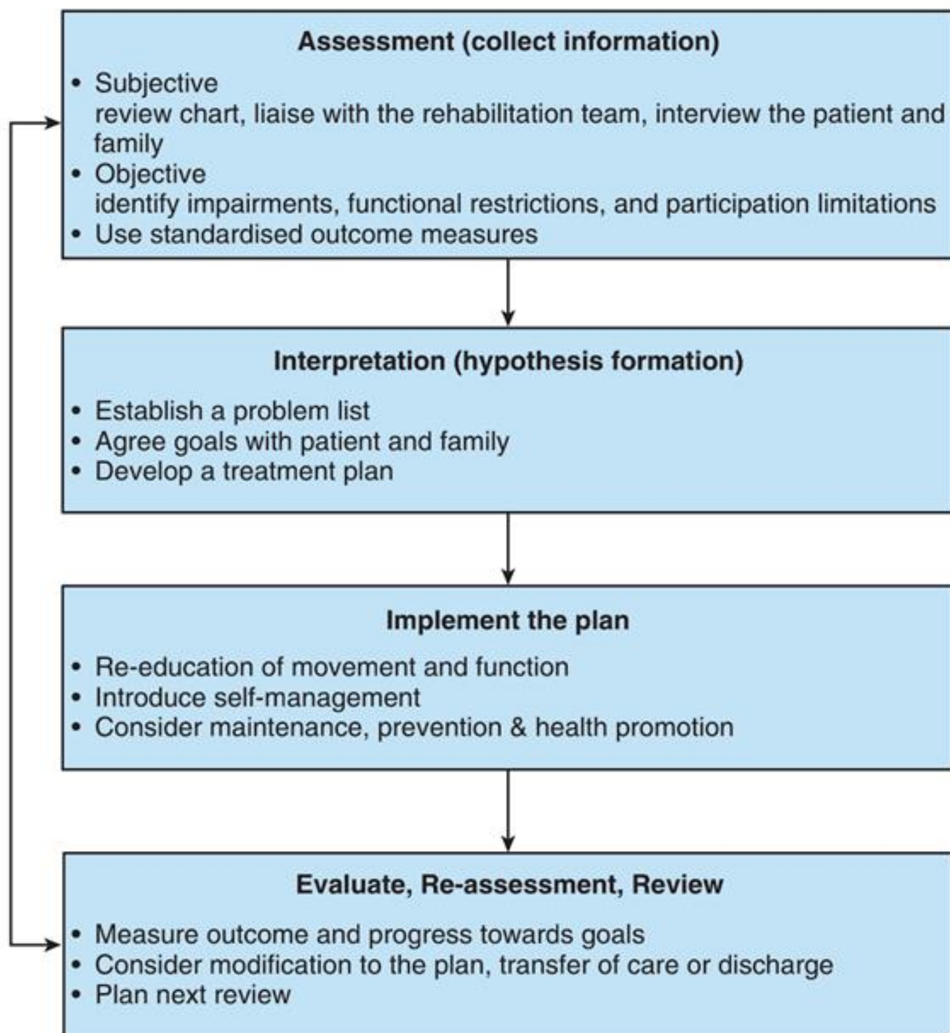


*Fig. 1.1*
*Clinical reasoning in neurological rehabilitation (Garner and Lennon 2018 with permission).*

evidence based rather than based on therapist preference for a specific treatment approach (Kollen et al 2009).

## A CONCEPTUAL FRAMEWORK FOR NEUROLOGICAL REHABILITATION

A conceptual framework composed of 10 guiding principles is essential to enable physiotherapists to determine their assessment and intervention strategies (Fig. 1.2).

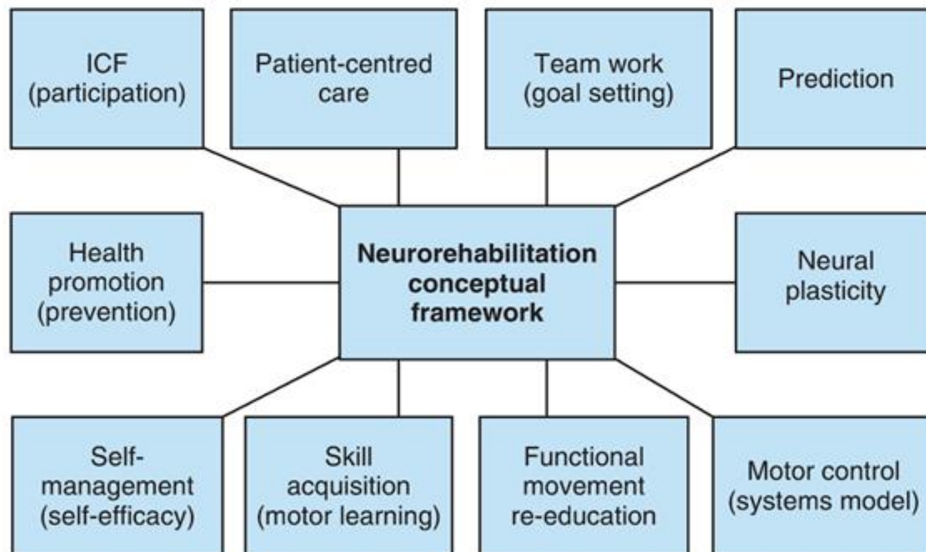


*Fig. 1.2*
*A conceptual framework for neurological rehabilitation.*

### Principle 1: The International Classification of Functioning (ICF)

In 2001 the World Health Organization (WHO) developed the ICF with the aim of shifting the focus from disability and impairments to health. Impairment is defined as a deficit in body structure or function. After a stroke, an example of impairment would be weakness leading to a limitation in the activity of walking, thus requiring the use of a wheelchair for mobility. Being in a wheelchair may restrict that individual from resuming his or her job, a limitation in participating in that individual's previous role in society. Environmental and personal factors are the contextual factors that enable the rehabilitation team to identify facilitators and barriers for the rehabilitation process, such as having a house that is wheelchair accessible without stairs (Fig. 1.3).

The ICF:

- Neurological physiotherapy should target impairments, activity and participation within the ICF (WHO 2001).
- Always link the patient's impairments to activity limitations to direct a targeted approach to the re-education of movement, function and participation.
- Changes at the level of impairment and activity are only really meaningful for the patient and the family carer if they enable them to participate in their family and community life by resuming their desired life roles, albeit in a different way.