UNIVERSITEIT GENT

INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY AND HEALTH (ICF)

BROCHURE

Faculteit Geneeskunde en Gezondheidswetenschappen
SnoClass Mapping Project

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1 IN SHORT

The International Classification of Functioning, Disability and Health (ICF) is a framework for structuring and describing information related to functioning and disability of an individual. It provides a standardized language (inter)nationally and a conceptual foundation for defining and assessing health and disability. It extends across professional groups and professional fields.

2 HISTORY OF THE ICF

The ICF was officially endorsed by the World Health Assembly in May 2001. It represents a shift in how health and disability are conceptualized, emphasizing not just the medical diagnosis but also the broader social and environmental factors that influence functioning. The ICF replaced the International Classification of Impairments, Disabilities, and Handicaps (ICIDH), which was first introduced in 1980 but faced criticism for its linear and deficit-focused approach. The ICF was developed over several years, incorporating feedback from stakeholders worldwide, including health professionals, researchers, and policymakers. Its development reflects a paradigm shift toward a more holistic understanding of health, grounded in the biopsychosocial model.

3 DEVELOPMENT OF THE ICF

The World Health Organization (WHO) spearheaded the development of the ICF to create a universal language for describing and measuring health and disability. Key milestones in its development included:

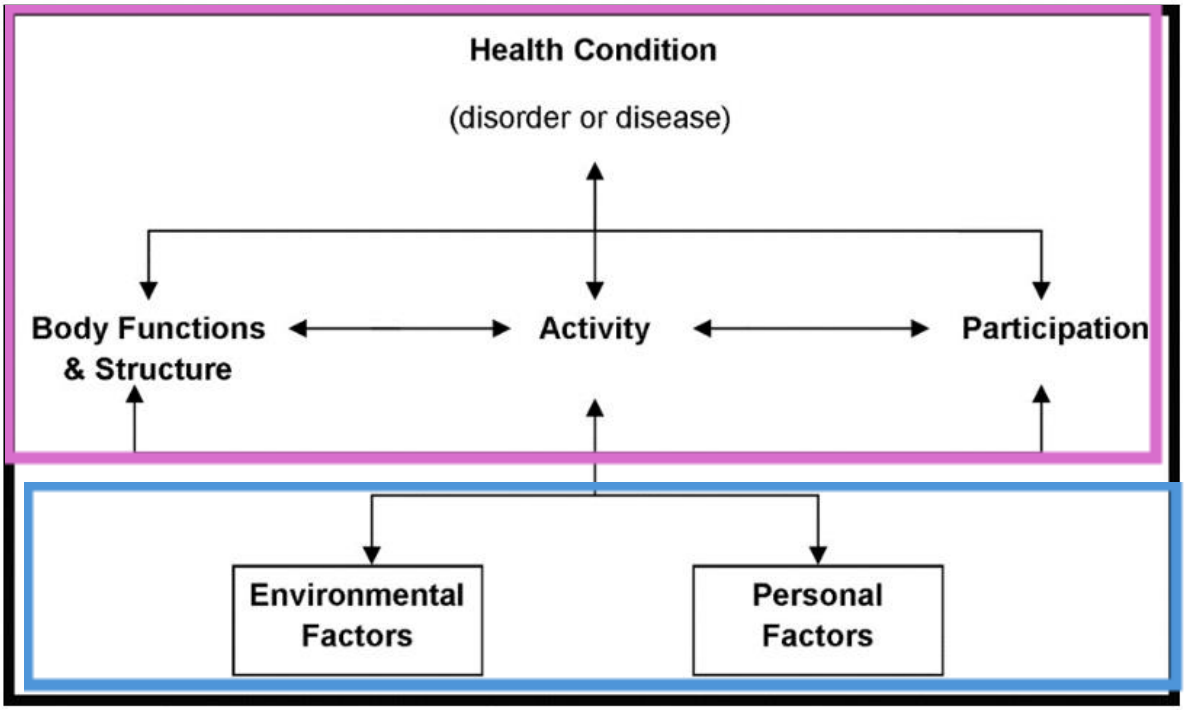
- Extensive international consultations to ensure inclusivity and relevance across cultures and settings.
- Collaboration with experts in medicine, rehabilitation, and social sciences to ensure multidisciplinary input.
- Piloting the framework in diverse healthcare settings to refine its usability and applicability. The result was a classification system that integrates biological, psychological, and social dimensions of health, aligning with the WHO's broader vision of health as a state of complete physical, mental, and social well-being.

Despite these milestones and updates, there is still some criticism of ICF. As the ‘disease/condition’ is visually situated at the top, the biomedical perspective still seems to be dominant. In response to this criticism, there are alternative ICF schemes that give ‘participation’ a prominent place or include

disease-related factors under 'personal factors'. Furthermore, a Dutch translation was conducted in 2002 and an update followed in 2007.

The WHO constructed also the International Classification of Functioning, Disability, and Health for Children and Youth (ICF-CY) as an extension of the ICF, specifically designed to capture the unique aspects of child and adolescent development. It considers how growth, learning, and environmental influences shape functioning over time, emphasizing temporary or evolving impairments. The ICF-CY maintains the core structure of the ICF but includes additional categories relevant to childhood, such as play, school participation, and caregiver support. It is widely used in healthcare, education, and rehabilitation to assess needs, design interventions, and track developmental progress, ensuring a holistic approach to supporting children with disabilities or health conditions.

3.1 Structure of the ICF



The ICF is organized into two main parts, each containing specific components:

1. **Functioning and Disability**

- **Body Functions and Structures**: Describes the physiological functions of body systems and anatomical structures.
- **Activity and Participation**: Focuses on the execution of tasks and involvement in life situations.

2. Contextual Factors

- **Environmental Factors**: Includes external influences such as societal attitudes, physical surroundings, and policies.
- **Personal Factors**: Encompasses individual attributes like age, gender, and lifestyle, though these are not classified in detail within the ICF.

Each *component* is broken down into *domains* and include *categories* describing various aspects of functioning and disability. Let's take a look into the domains and categories:

Domains: Within each component, there are specific domains. More concrete; in the "Body Functions" component (b), domains include Mental Functions (b1), Sensory Functions and Pain (b2), Voice and Speech Functions (b3), Functions of the Cardiovascular/Haematological/Immunological/ Respiratory systems (b4), Functions of the Digestive, Metabolic, and Endocrine systems (b5), Genitourinary and Reproductive functions (b6), Neuromusculoskeletal and Movement-related Functions (b7), Functions of the Skin and Related Structures (b8).
In the "Activities and Participation" component (d): Learning and Applying Knowledge (d1), General Tasks and Demands (d2), Communication (d3), Mobility (d4), Self-Care (d5), Domestic Life (d6), Interpersonal Interactions and Relationships (d7), Major Life Areas (d8), Community, Social, and Civic Life (d9)
For the "Environmental Factors" component (e): Products and Technology (e1), Natural Environment and Human-Made Changes to Environment (e2), Support and Relationships (e3), Attitudes (e4), Services, Systems, and Policies (e5).
For the "Body Structures" component (s): Structures of the Nervous System (s1), The Eye, Ear, and Related Structures (s2), Structures Involved in Voice and Speech (s3), Structures of the Cardiovascular, Immunological, and Respiratory Systems (s4), Structures Related to the Digestive, Metabolic, and Endocrine Systems (s5), Structures Related to the Genitourinary and Reproductive Systems (s6), Structures Related to Movement (s7), Skin and Related Structures (s8).

Categories: These are more specific units within the domains that further define in detail particular aspects of functioning or contextual factors. For example, within the domain of "Self-Care (d5)," categories are: Washing oneself (d510), Caring for body parts (d520), Toileting (d530), Dressing (540), Eating (d550), Drinking (d560), Looking after one's health (d570), Self-care, other specified (d598), Self-care, unspecified (d599).

3.2 Use of Qualifiers in the ICF

Qualifiers are an essential feature of the ICF, providing a standardized way to measure the extent of impairment, activity limitation, or participation restriction. They are numerical codes that indicate the severity or extent of a problem.

There are different qualifiers for the Body Functions and Structures, and for the Activities and Participation.

Qualifiers for Body Functions and Structures:
This 7-point scale measures the presence and severity of an impairment. The following qualifiers are used:

- **0**: No problem (0–4%)
- **1**: Mild problem (5–24%)
- **2**: Moderate problem (25–49%)
- **3**: Severe problem (50–95%)
- **4**: Complete problem (96–100%)
- **8**: Unspecified
- **9**: Not applicable

For Body Structures, an additional qualifier is used to describe the nature of the structural change, while a third qualifier specifies the location of the impairment. The nature of the change is classified as follows: 0 (no change), 1 (total absence), 2 (partial absence), 3 (extra part), 4 (abnormal dimensions), 5 (discontinuity), 6 (misalignment), 7 (qualitative structural changes, including fluid accumulation), 8 (unspecified), and 9 (not applicable).

Qualifiers for Activities and Participation:
A negative and positive scale assess both barriers and facilitators, indicating the degree of influence a factor has.
Barriers are rated as follows:

- 0 (no barrier),
- 1 (mild barrier),
- 2 (moderate barrier),
- 3 (severe barrier),
- 4 (complete barrier),
- 8 (unspecified barrier),
- 9 (not applicable).

Facilitators are rated with a positive scale:

- +0 no facilitator,
- +1 is a mild facilitator,
- +2 is moderate,
- +3 is substantial,
- +4 is a complete facilitator,
- +8 is a facilitator unspecified.

Qualifiers can also denote the extent to which environmental factors act as barriers or facilitators. For example, a supportive family environment might be coded as a facilitator, while inaccessible public transport could be a barrier. This nuanced coding system allows healthcare professionals to capture the complexity of functioning and disability in a standardized way, facilitating communication and comparison across settings.

The qualifier scale for activities and participation can be further defined using two key constructs: 'performance' and 'capacity'. These concepts help assess how a person's environment affects their

ability to engage in activities and participate in daily life, as well as how modifying the environment could enhance their functioning.

- **Capacity** refers to what an individual is capable of doing in a standardized setting, often assessed in a clinical environment.
- **Performance** reflects what the person actually does in their everyday environment.

The difference between capacity and performance highlights the impact of environmental factors on functioning. This gap serves as an indicator of potential environmental changes that could enhance an individual's performance.
Additionally, several optional qualifiers can provide further insights, such as evaluating performance without assistance and capacity with assistance, which are particularly relevant in institutional settings. In the future, a qualifier for involvement or subjective satisfaction in activities and participation may also be introduced**.**

3.3. ICF coding system

As you might have noticed, each layer of the ICF has its own code forming an alphanumeric code. The deeper you go in the hierarchy, the longer and more specific the code becomes:

- First level (Component): These are represented by a single letter (b, s, d, or e) followed by a single digit, indicating the broadest category.
- Second level (Domain): A second digit is added to specify a more detailed category within the broad group.
- Third Level (Categorie): A third digit further refines the classification.
- Fourth Level: A fourth digit provides an even more precise description of the function, structure, activity, or environmental factor.

Example of how the code extends:

- *b1* → Mental functions
- *b110* → Consciousness functions
- *b1102* → Reduced consciousness

- The last digit(s) in an ICF code is the qualifier(s), it quantifies the severity of an impairment, difficulty, or influence.
- Additional digits can specify structural changes, location, or level of assistance.
- Environmental factors use positive values (+) for facilitators and neutral/negative values for barriers.

Example of how the qualifier is used:

- *d450.3* → Indicates a severe difficulty in walking (*d450 = Walking*).
- *e150+3* → Indicates a substantial facilitator (*e150 = Design, construction, and technology of buildings*).

3.3 Use Case: ICF in Rehabilitation

The ICF is widely used in rehabilitation to guide assessment, goal-setting, and intervention planning. By using the ICF, the team ensures a holistic and patient-centered approach, addressing not just medical needs but also social and environmental factors.

Consider a patient recovering from a stroke:

- Assessment: Using the ICF framework, the rehabilitation team assesses impairments in body functions (e.g., reduced muscle strength) and activity limitations (e.g., difficulty walking). They also evaluate participation restrictions, such as the inability to return to work, and contextual factors like family support or workplace accessibility.
- Goal-setting: Goals are framed in terms of improving functioning, such as regaining independence in self-care activities or enhancing mobility.
- Intervention: Interventions are tailored to address the identified issues, such as physiotherapy to improve strength, occupational therapy to modify the home environment, and counseling to address emotional well-being.

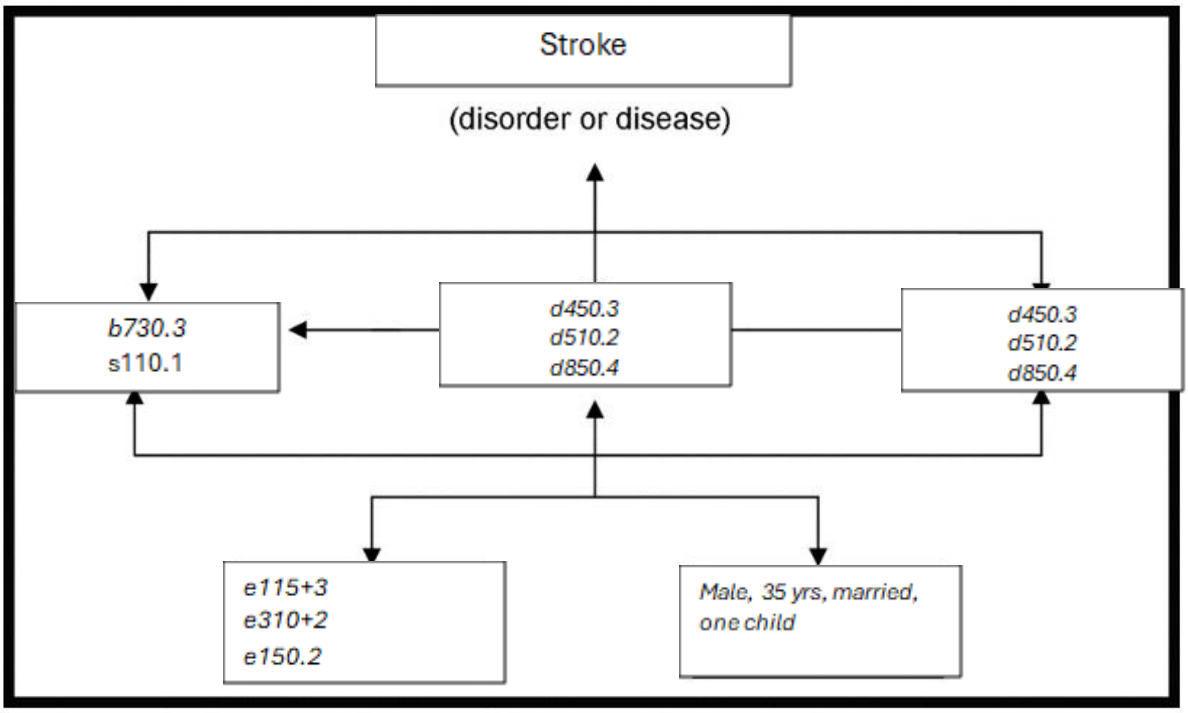


Figure 2. An example of a use case in the ICF

Legend:
b730.3 – Severe impairment in muscle power functions
s110.1-Mild impairment in brain structure
d450.3 – Severe difficulty walking.
d510.2 – Moderate difficulty with self-care tasks, such as dressing.
d850.4 – Complete restriction in employment (unable to return to work).
e115+3 – Substantial facilitator: use of assistive products for mobility (e.g., a walking aid).
e310+2 – Moderate facilitator: family support aiding in daily activities.
e150.2 – Moderate barrier: inaccessible workplace environment

3.4 Conclusion

The ICF is a framework that has transformed how health and disability are understood and addressed. Its comprehensive structure, emphasis on contextual factors, and standardized use of qualifiers make it an invaluable tool across healthcare disciplines. In rehabilitation, it fosters a holistic and client-centered approach, ensuring that interventions are tailored to the unique needs and circumstances of each individual. As healthcare systems continue to evolve, the ICF remains a cornerstone for promoting inclusive and effective care.

3.5 Links

ICF browser: https://apps.who.int/classifications/icfbrowser/
WHO-FIC classifications with Dutch ICF browser: https://class.whofic.nl/