

A-PROOF / ZonMw: Annotation Guidelines (translation to English)

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Introduction

Below, the main components and definitions of the annotation guidelines are presented in English. For the full guidelines used by the annotators, refer to the Dutch version.

Main annotation components

During the annotation process, a clinical note is presented to the annotator in the INCEpTION interface; each sentence in the note appears on a separate line. The annotation consists of the following components:

1. Marking the phrase that indicates that the sentence is about one of the 9 domains with the domain label (e.g. ‘ENR’);
2. Marking the phrase that indicates the level of functioning with the level label (e.g. ‘enr4’);
3. Marking sentences that discuss one of the 9 domains, but are not about the current state with the label ‘background’ (a sentence that describes past functioning) or ‘target’ (a sentence that describes future functioning);
4. Marking notes that should be completely excluded from the data (e.g. notes about children under 12 years old) with the label ‘disregard’.

Figure 1 shows an example of an annotated sentence in the INCEpTION interface. The word *concentratie* (concentration) is marked with the domain label ATT (attention functions), the phrase *iets verminderd* (slightly diminished) is marked with the level label att3 (indicating a mild functioning problem); in addition, a relation arrow is drawn from att3 to ATT to mark that they belong together.

An important point that was emphasized in the guidelines is that only explicit, literal mentions of functioning levels should be annotated. The annotators were urged to resist the tendency to draw conclusions based on their professional knowledge and to concentrate on the text only. This was implemented as one of the conclusions from the pilot phase of the project.

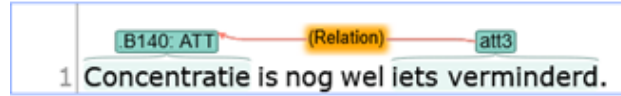


Figure 1: Screenshot of an annotated sentence in INCEpTION

Domains definitions

The definitions of the 9 domains, as they appear in the annotation guidelines, are given in [Table 1](#). These are the original definitions of the ICF; for some of them, the inclusions and exclusions are explicitly mentioned in the guidelines, while for others this was not deemed necessary. The definitions appear in the guidelines in English, since we discovered some inaccuracies in the Dutch translation of the ICF.

Levels definitions

To describe the level of functioning, we use a 0-4 scale for 7 out of the 9 domains. This scale corresponds to the generic qualifiers system of the ICF; however, note that our scale is reversed: in the ICF scale, 0 indicates no problem and 4 indicates a total disability, while in our scale 4 indicates no problem and 0 indicates a total disability. [Table 2](#) and [Table 3](#) show the interpretation of the generic qualifiers per domain, as it was provided in the annotation guidelines.

For the *Walking* domain, we implemented an existing domain-specific 0-5 scale instead of the ICF qualifiers: the *Functional Ambulation Category (FAC)*; for the *Exercise tolerance* domain, we used a 0-5 scale inspired by the *Metabolic Equivalents (METs)* scores. The definitions of the levels for these two domains are shown in [Table 4](#).

The annotators were instructed to always assign a level of functioning if a domain is discussed. If the level is unclear from the description (e.g. it is mentioned that the patient is fatigued but the degree is not mentioned), the instruction is to assign a middle value (i.e. 2 for the 0-4 scale).

| ICF code | Domain | Definition |
|-----------|--------|--|
| b1300 | ENR | Energy level: Mental functions that produce vigour and stamina. |
| b140 | ATT | Attention functions: Specific mental functions of focusing on an external stimulus or internal experience for the required period of time. |
| b152 | STM | Emotional functions: Specific mental functions related to the feeling and affective components of the processes of the mind. |
| b440 | ADM | Respiration functions: Functions of inhaling air into the lungs, the exchange of gases between air and blood, and exhaling air. |
| b455 | INS | Exercise tolerance functions: Functions related to respiratory and cardiovascular capacity as required for enduring physical exertion. |
| b530 | MBW | Weight maintenance functions: Functions of maintaining appropriate body weight, including weight gain during the developmental period. |
| d450 | FAC | Walking: Moving along a surface on foot, step by step, so that one foot is always on the ground, such as when strolling, sauntering, walking forwards, backwards, or sideways. Include: walking short or long distances; walking on different surfaces; walking around obstacles. |
| d550 | ETN | Eating: Carrying out the coordinated tasks and actions of eating food that has been served, bringing it to the mouth and consuming it in culturally acceptable ways, cutting or breaking food into pieces, opening bottles and cans, using eating implements, having meals, feasting or dining. Exclude: ingestion functions (chewing, swallowing, etc.), appetite |
| d840-d859 | BER | Work and employment: apprenticeship (work preparation); acquiring, keeping and terminating a job; remunerative employment; non-remunerative employment. |

Table 1: Definitions of the ICF domains

| level | generic qualifier | ENR | ATT | STM | ADM |
|-------|----------------------|--|--|--|--|
| 4 | no problem | No problem with the energy level. | No problem with concentrating / directing / holding / dividing attention. | No problem with emotional functioning: emotions are appropriate, well regulated, etc. | No problem with respiration, and/or respiratory rate is normal (EWS: 9-20). |
| 3 | mild problem | Slight fatigue that causes mild limitations. | Slight problem with concentrating / directing / holding / dividing attention for a longer period of time or for complex tasks. | Slight problem with emotional functioning: irritable, gloomy, etc. | Shortness of breath in exercise (saturation ≥ 90), and/or respiratory rate is slightly increased (EWS: 21-30). |
| 2 | moderate problem | Moderate fatigue; the patient gets easily tired from light activities or needs a long time to recover after an activity. | Can concentrate / direct / hold / divide attention only for a short time. | Moderate problem with emotional functioning: negative emotions, such as fear, anger, sadness, etc. | Shortness of breath in rest (saturation ≥ 90), and/or respiratory rate is fairly increased (EWS: 31-35). |
| 1 | severe problem | Severe fatigue; the patient is capable of very little. | Can barely concentrate / direct / hold / divide attention. | Severe problem with emotional functioning: intense negative emotions, such as fear, anger, sadness, etc. | Needs oxygen at rest or during exercise (saturation < 90), and/or respiratory rate > 35 . |
| 0 | complete problem | Very severe fatigue; unable to do anything and mostly lays in bed. | Unable to concentrate / direct / hold / divide attention. | Flat affect, apathy, unstable, inappropriate emotions. | Mechanical ventilation is needed. |

Table 2: Definitions of the levels of functioning; part 1

| level | generic qualifier | MBW | ETN | BER |
|-------|----------------------|--|--|---|
| 4 | no problem | Healthy weight, no unintentional weight loss or gain, SNAQ 0 or 1. | Can eat independently (in culturally acceptable ways), good intake, eats according to her/his needs. | Can work/study fully (like when healthy). |
| 3 | mild problem | Some unintentional weight loss or gain, or lost a lot of weight but gained some of it back afterwards. | Can eat independently but with adjustments, and/or somewhat reduced intake (>75% of her/his needs), and/or good intake can be achieved with proper advice. | Can work/study almost fully. |
| 2 | moderate problem | Moderate unintentional weight loss or gain (more than 3 kg in the last month), SNAQ 2. | Reduced intake, and/or stimulus / feeding modules / nutrition drinks are needed (but not tube feeding / TPN). | Can work/study only for about 50%, or can only work at home and cannot go to school / office. |
| 1 | severe problem | Severe unintentional weight loss or gain (more than 6 kg in the last 6 months), SNAQ ≥ 3 . | Intake is severely reduced (<50% of her/his needs), and/or tube feeding / TPN is needed. | Work/study is severely limited. |
| 0 | complete problem | Severe unintentional weight loss or gain (more than 6 kg in the last 6 months) and admitted to ICU. | Cannot eat, and/or fully dependent on tube feeding / TPN. | Cannot work/study. |

Table 3: Definitions of the levels of functioning; part 2

| level | generic qualifier | FAC | INS |
|-------|---------------------------------|---|---|
| 5 | no problem | Patient can walk independently anywhere: level surface, uneven surface, slopes, stairs. | MET>6. Can tolerate jogging, hard exercises, running, climbing stairs fast, sports. |
| 4 | mild problem | Patient can walk independently on level surface but requires help on stairs, inclines, uneven surface; or, patient can walk independently, but the walking is not fully normal. | $4 \leq \text{MET} < 6$. Can tolerate walking / cycling at a brisk pace, considerable effort (e.g. cycling from 16 km/h), heavy housework. |
| 3 | moderate problem | Patient requires verbal supervision for walking, without physical contact. | $3 \leq \text{MET} < 4$. Can tolerate walking / cycling at a normal pace, gardening, exercises without equipment. |
| 2 | moderate / severe problem | Patient needs continuous or intermittent support of one person to help with balance and coordination. | $2 \leq \text{MET} < 3$. Can tolerate walking at a slow to moderate pace, grocery shopping, light housework. |
| 1 | severe problem | Patient needs firm continuous support from one person who helps carrying weight and with balance. | $1 \leq \text{MET} < 2$. Can tolerate sitting activities. |
| 0 | complete problem | Patient cannot walk or needs help from two or more people; or, patient walks on a treadmill. | $0 \leq \text{MET} < 1$. Can physically tolerate only recumbent activities. |

Table 4: Definitions of the levels of functioning; part 3