



# OVERVIEW OF AND INTERPRETATION GUIDELINES FOR THE EVALUATION OF SOCIAL INTERACTION (ESI)

## Description of the ESI

The ESI is a standardized, observation-based evaluation of a person's quality of social interaction. When a person is evaluated using the ESI, the occupational therapist observes the person during at least two natural social exchanges with social partners with whom the person has a desire and/or need to interact. The social exchanges observed are ones that the client reported as presenting a challenge in his or her everyday life.

An important feature of the ESI is that it is an evaluation of occupational skill; not underlying body functions, person factors, or environmental factors. More specifically, the ESI includes 27 social interaction items (e.g., *Looks, Turns Toward, Gesticulates, Produces Speech, Times Response*). These items are occupational performance skills that represent small units of social interaction that are observable during virtually any occupation in which the person communicates and interacts socially with others.

Scoring of the ESI is criterion-referenced based on a criterion of competent social interaction skill. That is, the occupational therapist rates the quality of each social interaction skill (ESI item) based on the degree to which the person's social behaviors were socially appropriate (polite, respectful, well-timed, and mature). To this end, each ESI item is scored = 4 (competent, no problem), 3 (questionable; socially undesirable, but no clear problem was noted), 2 (ineffective, clear disruption), or 1 (severe; markedly inappropriate, risk for physical harm or to personal integrity, need for assistance or support from others).

The occupational therapist enters each ESI item score into the OT Assessment Package (OTAP) and uses the OTAP software to calculate a linearized ESI measure that is reported in logits (log-odds probability units). The ESI measure is placed along an ESI scale and its location indicates the level of the person's observed quality of social interaction. The higher the person's ESI measure along the scale, the higher was his or her observed occupational skill when communicating and interacting socially with others. The ESI scale is included in the person's "Results and Interpretation of an ESI Observation" report (*ESI Results Report*). As discussed below, the ESI measure can be interpreted from a criterion-referenced and a norm-referenced perspective.

## Criterion-referenced Interpretations

**Commonly observed quality of social interaction:** Two different criterion-referenced interpretations of a person's ESI measure are possible. The first is based on comparing (a) the location of the person's ESI measure to (b) the quality of social interaction commonly observed among people who have an ESI measure in the same range along the ESI scale. For example, an ESI measure of 0.5 logit is located in the range where it is most common to observe "mildly to moderately ineffective and/or immature social interaction."

**Cutoff for competent quality of social interaction:** The second criterion-referenced interpretation is based on comparing the person's ESI measure to the criterion-referenced cutoff measure of 1.0 logit on the ESI scale. This cutoff indicates the lower limit for competent social interaction skill. More specifically:

- An ESI measure above the cutoff indicates that the person demonstrated generally appropriate and competent overall quality of social interaction during the observed social exchanges.
- An ESI measure below the cutoff indicates that there was diminished competence or lower quality of social interaction during the observed social exchanges.

**Special considerations when testing well people with no identified diagnosis:** It is important to note that even healthy, well adults demonstrate some variability in their quality of social interaction and may sometimes demonstrate moderately inappropriate social interaction. Further, quality of social interaction among well people increases during childhood and begins to gradually decline after the seventh decade. Therefore, it is not uncommon for healthy, well people to have an ESI measure below the ESI cutoff for competent quality of social

interaction. To determine if a person's quality of social interaction is at or below a level expected for someone of the same age, it is necessary to also apply a norm-referenced interpretation of his or her ESI measure.

### **Norm-referenced Interpretation**

When a norm-referenced interpretation is made, the occupational therapist compares the person's ESI measure to the normative mean (average) and variation in quality of social interaction among age-matched, healthy, well people. Approximately 95% of healthy, well people of the same age as the person who was tested have ESI measures within  $\pm 2$  standard deviations (SD) of the normative mean. This range ( $\pm 2$  SD) representing the expected variation in quality of social interaction is depicted by a vertical band to the left of the ESI scale on the person's *ESI Results Report*. The normative mean is located in the middle of each vertical band and is represented by a dark dot. When a person's ESI measure is within the range illustrated by the vertical band, the person's observed quality of social interaction was within  $\pm 2$  SD of the mean. A percentile rank (percentage of healthy, well, same-age people with lower ESI measures) and a z score also are reported in a table that is included in the person's *ESI Results Report*. A person's z score represents how many SD above or below the normative mean is his or her ESI measure.

**Note.** ESI reports display the mean  $\pm 2$  SD because it is the most commonly used criterion to determine a person's need for services; other criteria (e.g.,  $z \leq -1.5$  or  $z \leq -1.0$ ) are used in some settings.

### **Evaluation of Change**

When the ESI is used to evaluate change in a person's quality of social interaction, the person engages in two social exchanges for each ESI observation, and the Time 1 and Time 2 ESI measures are compared. The Time 1 and Time 2 ESI measures are reported in a table in the *ESI Progress Report* and are shown graphically along the ESI scale. There are two ways to evaluate if the person's quality of social interaction has improved, stayed the same, or decreased. The first is based on whether the change is great enough to be observable. The second pertains to whether or not the change is likely to be statistically significant.

**Observable change:** Two ESI measures that differ by at least 0.3 logit have changed in a practical and meaningful way. That is, a change of at least 0.3 logit indicates that there has been an observable change in the person's quality of social interaction; a higher ESI measure for the second ESI observation indicates that there has been an observable improvement in the person's quality of social interaction. If two ESI measures do not differ by 0.3 logit, they can be considered to be essentially the same; there has been no observable change between Time 1 and Time 2.

**Significant change:** The standard error of measurement (SE) values for each of the person's ESI measures can be used to determine whether the change between Time 1 and Time 2 is likely to be statistically significant ( $p \leq .15$ ). That is, if the change between the Time 1 and the Time 2 ESI measures is at least as large as the sum of the SEs for each of those measures, then there has likely been a statistically meaningful change in the person's quality of social interaction. For example, to determine if there was likely a significant difference between two ESI measures for Time 1 = -0.3 and Time 2 = 0.2, the occupational therapist first calculates the difference:  $(0.2) - (-0.3) = 0.5$ . Next, the occupational therapist uses Table B-2 in the ESI manual and finds the SE for each measure. The SE for an ESI measure of -0.3 is 0.20 and the SE for an ESI measure of 0.2 is 0.17; their sum is 0.37 (when rounded, 0.4). Since the change between Time 1 and Time 2 (0.5) is more than the sum of their respective SEs (0.4), the occupational therapist concludes that the two ESI measures likely differ significantly ( $p \leq .15$ ). For more information about how to determine if two ESI measures differ significantly ( $p \leq .05$ ), refer to the ESI manual.