Appendix 7. Calculations of proportion reliably changed participants

The proportion of participants who were clinically relevantly changed on fatigue severity (CIS-FS) was calculated using the reliable change index (RCI) [34,35]. The Reliable change index (RCI) was calculated according to the method proposed by Jacobson & Truax [34] (see also Maassen [35]).

The RCI per individual was calculated by applying the following formula:

$$ RCI = \frac{X_2 - X_1}{S_{diff}} = \frac{X_2 - X_1}{S_{diff}} $$

(3)

where $X_2 - X_1$ is the individual change score of CIS-FS between T0 and T2. To be able to calculate the RCI for all participants – so also for participants who had missing data at T2 – we used the estimated intercepts of CIS-FS at T2 of the best fitting model (see Appendix 6 for model selection). These intercepts were obtained using the FSCORE function in the SAVE command of Mplus.

$S_{diff}$ was calculated by applying the following formula:

$$ S_{diff} = \sqrt{2(SE)^2} S_{diff} = \sqrt{2(SE)^2} $$

(4)

where $SE$ is denoted by:

$$ SE = SD_1 \sqrt{1 - r_{xx}} SE = SD_1 \sqrt{1 - r_{xx}} $$

(5)

where $SD_1$ is the standard deviation of the norm group and $r_{xx}$ is the test-retest reliability of the CIS-fatigue severity subscale.
The norm group consisted of non-fatigued cancer survivor (n=93) [36] (Mean CIS-FS = 19.6, SD = 8.4). The cut-off norm group was $M + 1 \text{SD} = 28.0$. The test-retest reliability was $r_{xx} = 0.88$ based on Vercoulen et al [52].

Then, the proportion of clinically relevant improved participants was calculated based on the following definitions:

*Improved*: passed RCI in direction of fatigue reduction, thus $RCI < -1.96$

*Unchanged*: did not pass the RCI, thus $-1.96 < RCI < 1.96$.

*Deteriorated*: passed RCI in direction of fatigue increase, thus $RCI > 1.96$

*Recovered*: passed RCI in direction of fatigue reduction, thus $RCI < -1.96$ and CIS-FS T2 was below the cut-off point of the norm group, so below 28.