Text summary of appendix A4: Appendix five contains the detailed items of the included self- and proxy measurements.

## **Appendix A4: Items of self- and proxy-administered measurements**

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| **Measurement and items** |
| **Epworth Sleepiness Scale (ESS) (**[**Johns, 1991**](#_ENREF_32)**)** |
| *(1) Sitting and reading,**(2) Watching TV* |
| *(3) Sitting, inactive in a public place (e.g., a theater or a meeting)* |
| *(4) As a passenger in a car for an hour without a break* |
| *(5) Lying down to rest in the afternoon when circumstances permit* |
| *(6) Sitting and talking to someone* |
| *(7) Sitting quietly after a lunch without alcohol* |
| *(8) In a car, while stopped for a few minutes in the traffic* |
| **Epworth Sleepiness Scale Alternative Version (ESS-ALT) (**[**Gronewold *et al.*, 2021**](#_ENREF_27)**)** |
| *(1) Sitting and reading* |
| *(2) Watching TV or a video* |
| *(3) Sitting in a waiting room* |
| *(4) As a passenger in a car or a bus for about half an hour* |
| *(5) Lying down to rest in the afternoon* |
| *(6) Sitting and talking to someone* |
| *(7) Sitting quietly by yourself after lunch* |
| *(8) Sitting and eating a meal* |
| **Pittsburgh Sleep Quality Index (PSQI) (**[**Buysse *et al.*, 1989**](#_ENREF_9)**)** |
| *(1) During the past month, when have you usually gone to bed at night?* |
| *(2) During the past month, how long (in minutes) has it usually take you to fall asleep each night?* |
| *(3) During the past month when have you usually gotten up in the morning?* |
| *(4) During the past month, how many hours of actual sleep did you get at night? (This may be different than the number of hours you spend in bed.)* |
| *(5) During the past month, how often have you had trouble sleeping because you cannot get to sleep within 30 minutes?* |
| *(6) During the past month, how often have you had trouble sleeping because you wake up in the middle of the night or early morning?* |
| *(7) During the past month, how often have you had trouble sleeping because you have to get up to use the bathroom?* |
| *(8) During the past month, how often have you had trouble sleeping because you cannot breathe comfortably?* |
| *(9) During the past month, how often have you had trouble sleeping because you cough to snore loudly?* |
| *(10) During the past month, how often have you had trouble sleeping because you feel too cold* |
| *(11) During the past month, how often have you had trouble sleeping because you feel too hot?* |
| *(12) During the past month, how often have you had trouble sleeping because you had bad dreams?* |
| *(13) During the past month, how often have you had trouble sleeping because you have pain?* |
| *(14) During the past month, how often have you had trouble sleeping because you have other reason(s), please describe* |
| *(15) During the past month, how would you rate your sleep quality overall?* |
| *(16) During the past month, how often have you taken medicine (prescribed or “over the counter”) to help you sleep?* |
| *(17) During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?* |
| *(18) During the past month, how much of a problem has it been for you to keep up enough enthusiasm to get things done?**19 Do you have a roommate or bedpartner?* |
| **Observational Sleep Assessment Instrument (OSAI) (**[**Cohen-Mansfield *et al.*, 1989**](#_ENREF_12)**)** |
| *(1) Awake* |
| *(2) Dozing or borderline sleep* |
| *(3) Bed ambulation* |
| *(4) Asleep* |
| *(5) Eyes* |
| *(6) Snoring* |
| *(7) Loudness of breathing* |
| *(8) Rate of breathing* |
| *(9) Rate of breathing* |
| *(10) Discontinuity of sleep <1 min: 8 = 8+* |
| *(11) Discontinuity of sleep >1 min: 8 = 8+* |
| *(12) Discontinuity of breathing 8 = 8+* |
| *(13) Discontinuity of chest movements: 8 = 8+* |
| *(14) Postresuscitative snorts: 8 = 8+* |
| *(15) Body restlessness/turning: 8 = 8+* |
| *(16) Periodic leg movements: 8 = 8* |
| *(17) Sleep talk: 0= no, 1= yes* |
| **Questionnaire for Hallucinations and Sleep-Wake Cycle in Alzheimer’s Disease (**[**Sinforiani *et al.*, 2007**](#_ENREF_59)**)** |
| *no items available after author request* |
| **Sleep continuity scale in Alzheimer’s disease (SCADS) (**[**Manni *et al.*, 2013**](#_ENREF_42)**)** |
| *(1) Do you have difficulty to get to sleep?* |
| *(2) Overall how do you rate the quality of your sleep?* |
| *(3)Do you wake up tired in the morning?* |
| *(4) Do you happen to wake up during the night?* |
| *(5) How frequently do you happen to wake up on average in a week?* |
| *(6) After waking up during the night you fall asleep* |
| *(7) Do you wake up early in the morning? (that means do you wake up too early with respect to what you would like to and to your commitments?),* |
| *(8) How do you rate overall the continuity of your nocturnal sleep?* |
| *(9) How long do you stay awake on average during the night?* |
| **Sleep Disorders Inventory (SDI) (**[**Tractenberg *et al.*, 2003**](#_ENREF_64)**)** |
| *(1) Difficulty falling asleep* |
| *(2) Getting up during the night (do not count if the subject gets up once or twice per night to go to the bathroom and quickly falls back to sleep)* |
| *(3) Wandering, pacing or getting involved in inappropriate activities at night* |
| *(4) Awakening you during the night* |
| *(5) Awakening at night, dressing, and planning to go out, thinking that is morning and time to start the day* |
| *(6) Awakening too early in the morning (earlier than is his/her habit)* |
| *(7) Sleeping excessively during the day* |
| *(8) Other night-time behaviors that bother you* |