

## SUPPLEMENTARY MATERIALS

### Inclusion and exclusion criteria

We recruited patients with a DSM-5 diagnosis of SSD (American Psychiatric Association, 2013) who were 20-55 years old, able to speak and write in Italian, and receiving treatment as outpatients at a DMH or in a RF. We excluded patients who were unable to provide informed consent or who had severe cognitive deficits (i.e., a Mini-Mental State Examination corrected score lower than 24), a recent (in the last 6 months) diagnosis based on medical records of substance use disorder according to DSM-5 criteria (American Psychiatric Association, 2013), a history of clinically significant head injury, or cerebrovascular/neurological disease.

### References

American Psychiatric Association (APA). (2013). *Diagnostic and Statistical Manual of Mental Disorders (DSM-5®)*. Arlington, VA: American Psychiatric Publishing.

### Statistical analyses

Time spent within different PA levels (as measured with the accelerometer) was described as a daily average and modelled across residential patients, outpatients, and control participants both considering minutes spent in each level as outcomes, using a GLMM assuming a negative binomial distribution for the response variable and two nested random effects, namely matched pair (to account for matched design) and patient (accounting for multiple measurements within-subject). A multinomial logistic model was used to model daily percent time usage in different activities. Model estimates were adjusted for wearing percent time, cigarette smoke, and seasonality. Results were reported as RRs and mean differences, respectively, with their 95% confidence intervals (CIs).

Linear regression models were fitted to assess the relationships between psychiatric severity/levels of functioning, as measured by BPRS, BNSS, and SLOF scales, with the daily mean of PA levels, self-reported daily life activities, and emotions in patients with SSD (both residential and outpatients) after controlling for age, medication, disability level, smoking and seasonality. Results are presented in terms of regression coefficients with their bootstrap-based 95% confidence intervals (CIs). After checking that the BPRS, BNSS, and SLOF were skewed and not normally distributed, we choose to compute 95% bootstrap-based CIs since the asymptotically normal distribution assumption was violated. A P-value of <0.05 was deemed to be statistically significant.

### Data processing of Actigraph data

Individual GT3X files were processed using GGIR package (Van Hees et al., 2019) in order to estimate Euclidean Norm minus One (ENMO) using 60 seconds epoch and defaults settings (calibration, no data imputation); to be included in the analyses each patient had to have at least 4 valid monitoring days, and for each day at least 10 valid hours of wearing time. Non-wearing epochs were estimated using 60 minutes window and default GGIR algorithm (Van Hees et al. 2013). Every epoch was categorized as active or bedrest using Cole et al. (1992) procedure based on epoch counts, while periods in bed were identified using Tudor-Locke algorithm (2014; modified according to Actigraph specifications). For each epoch, oxygen consumption ( $VO_2$ , mL  $kg^{-1} min^{-1}$ ) was estimated through the formula (Ellingson et al., 2017; Hildebrand, Hansen, & Ekelund, 2014):

$$VO_2 = 0.901 \cdot ENMO^{0.534}$$

If  $VO_2$  was less than 3.0, we set to floor of 3.0 and computed Metabolic Equivalent of Tasks (METs) as

$$MET = VO_2/3.5$$

METs refer to the rate of energy expenditure per unit time at rest: 1 MET represents the amount of energy the human body expends at rest. PA levels were identified based on METs values estimated from ENMO measurements, using the thresholds suggested by Hildebrand et al. (2014):

- i. METs ≤ 1.5 = Sedentary;
- ii. 1.5 < METs < 3.0 = Light;
- iii. 3.0 ≤ METs < 6.0 = Moderate;
- iv. METs ≥ 6.0 = Vigorous.

Minutes and percentages of time spent within each PA level were synthesized as daily average across valid monitoring days. Minutes of PA activity were quantified using “bouts”. A bout was defined as a 10 minutes period during which PA was maintained at a given intensity level (with at maximum 2 minutes gaps). Moderate and vigorous PA levels were combined into a single category named “Moderate-to-Vigorous-Physical Activities” (MVPA).

### References

- Cole, R. J., Kripke, D. F., Gruen, W., Mullaney, D. J., & Gillin, J. C. (1992). Automatic sleep/wake identification from wrist activity. *Sleep*, 15(5), 461-469.
- Ellingson, L. D., Hibbing, P. R., Kim, Y., Frey-Law, L. A., Saint-Maurice, P. F., & Welk, G. J. (2017). Lab-based validation of different data processing methods for wrist-worn ActiGraph accelerometers in young adults. *Physiol Meas*, 38(6), 1045-1060. doi:10.1088/1361-6579/aa6d00
- Hildebrand, M., VT, V. A. N. H., Hansen, B. H., & Ekelund, U. (2014). Age group comparability of raw accelerometer output from wrist- and hip-worn monitors. *Med Sci Sports Exerc*, 46(9), 1816-1824. doi:10.1249/mss.0000000000000289
- Tudor-Locke, C., Barreira, T. V., Schuna, J. M., Jr., Mire, E. F., & Katzmarzyk, P. T. (2014). Fully automated waist-worn accelerometer algorithm for detecting children's sleep-period time separate from 24-h physical activity or sedentary behaviors. *Appl Physiol Nutr Metab*, 39(1), 53-57. doi:10.1139/apnm-2013-0173
- Van Hees, V. T., Gorzelniak, L., Dean León, E. C., Eder, M., Pias, M., Taherian, S., . . . Horsch, A. (2013). Separating movement and gravity components in an acceleration signal and implications for the assessment of human daily physical activity. *PLoS ONE*, 8(4), e61691.
- Van Hees, V. T., Fang, Z., Zhao, J., Heywood, J., Mirkes, E., Sabia, S., & Migueles, J. (2019). GGIR: Raw accelerometer data analysis. *R Packag version*, 18-11.

Table 1S.

**Guideline list of daily activities assessment\***

| <b>Activity</b>                              | <b>Activity description</b>   |
|--|---|
| <b>Sleeping</b>                              | <i>Moments when you were sleeping, light or deep sleep.</i>   |
| <b>Staying sick in bed</b>                   | <i>Moments when you were awake sick in the bed.</i>   |
| <b>Eating</b>                                | <i>Meal-related activities, such as eating, drinking, having lunch, dinner, snacking, drinking.</i>   |
| <b>Self-caring</b>                           | <i>Self-care activities, such as washing, dressing, combing, taking medical care (e.g., having a medical examination, taking medicine).</i>   |
| <b>Working</b>                               | <i>Work-related activities (and lunch breaks or breaks during work) or looking for work.</i>  |
| <b>Studying</b>                              | <i>Activities related to school or training, such as taking courses or lessons, taking exams, studying, doing homework.</i>   |
| <b>Doing houseworks</b>                      | <i>Activities related to the management of your home or personal property (such as a car), such as: cooking, washing (e.g. dishes, house, clothes), tidying up, cleaning, sewing, ironing, building and renovating the house (e.g. painting the walls, repairing something in the house), shopping, buying services (e.g. electricity, gas), going to the hairdresser / barber, managing family life.</i>   |
| <b>Taking care of someone or something</b>   | <i>Activities related to the care of one's family (adults or children), animals or plants: for example, helping or playing with children, providing physical care, or keeping company); do gardening (care of plants, vegetable garden, flowers); taking care of animals (feeding, walking).</i>  |
| <b>Voluntary working</b>                     | <i>Voluntary work carried out within a group / association, or aid given free of charge to people from other families (including children not living together).</i>   |
| <b>Doing leisure activities</b>              | <i>Leisure activities, such as going to the cinema, theatre, concert, exhibition or museum, taking cultural trips, painting, photographing, making videos, playing an instrument, writing poetry, making collections, using e-mail (not for work), search for information on the internet, play (even on the PC or with video games, or with animals), read (newspapers, books, magazines), socialize, make and receive visits, text messages, converse on the phone, celebrate, chat with someone.</i> |
| <b>Resting, doing nothing</b>                | <i>Activities of relaxation, rest, thinking or meditating, doing nothing (without sleeping), smoking.</i>   |
| <b>Doing physical activity</b>               | <i>Leisure activities that require physical exercise such as sports, dancing, walking, strolling, running, playing with the ball, fitness, hunting, fishing, mushroom / plant picking, and all outdoor sports activities.</i>   |
| <b>Getting around</b>                        | <i>Moments when you were moving.</i>  |
| <b>Watching TV or listening to the radio</b> | <i>Leisure activities such as watching television, videos, TV series, movies, or listening to the radio / music.</i>  |
| <b>Participating to religious activities</b> | <i>Activities of participation in religious activities, such as religious meetings / gatherings or religious ceremonies, praying, going to a place of worship, going to the cemetery.</i>   |

\* The mobile app section asked, "What are you doing right now?" and the participants had the possibility to select one or more of the 15 activity categories.

**Table 2S.****Bedrest**

| Variables                     | Residential patients<br>N = 53 (25%) | Outpatients<br>N = 46 (22%) | Control participants<br>N = 111 (53%) | p-value |
|-------------------------------|--------------------------------------|-----------------------------|---------------------------------------|---------|
| <b>Daily minutes of sleep</b> |                                      |                             |                                       | <0.001  |
| <i>Mean (SD)</i>              | 571.6 (103.9)                        | 602.3 (115.9)               | 455.8 (68.2)                          |         |
| <i>Median (Min-Max)</i>       | 564.5 (340.8-840.4)                  | 603.7 (234.2-924.8)         | 452.8 (280.3- 643.5)                  |         |

Table 3S.

Between-group differences for wake time and physical activity levels during the daytime<sup>o</sup>

|                                    |  |                             |                             |                              | RESIDENTIAL VS OUTPATIENTS |         | RESIDENTIAL VS CONTROLS    |         | OUTPATIENTS VS CONTROLS    |         |
|------------------------------------|--|-----------------------------|-----------------------------|------------------------------|----------------------------|---------|----------------------------|---------|----------------------------|---------|
|                                    |  | RESIDENTIAL<br>N = 53 (25%) | OUTPATIENTS<br>N = 46 (22%) | CONTROLS<br>N = 111<br>(53%) | ESTIMATE<br>(95% CI)       | p-value | ESTIMATE<br>(95% CI)       | p-value | ESTIMATE<br>(95% CI)       | p-value |
| <b>WAKE TIME</b>                   |  |                             |                             |                              |                            |         |                            |         |                            |         |
| <b>WAKE TIME</b>                   | <i>Daily Mean (CI 95%) (min/day)<sup>s</sup></i> | 841.8 (819.0; 865.2)        | 817.7 (793.9; 842.3)        | 967.5 (949.6; 985.7)         | 1.03 (0.98; 1.08)          | 0.34    | 0.87 (0.84; 0.91)          | <0.001  | 0.85 (0.81; 0.88)          | <0.001  |
|                                    | <i>Daily % (CI 95%)<sup>s</sup></i>              | 64.7 (63.0; 66.4)           | 60.9 (59.2; 62.7)           | 71.3 (70.0; 72.6)            | 1.06 (1.01; 1.11)          | 0.0092  | 0.91 (0.87; 0.94)          | <0.001  | 0.85 (0.82; 0.89)          | <0.001  |
| <b>PHYSICAL ACTIVITY INTENSITY</b> |  |                             |                             |                              |                            |         |                            |         |                            |         |
| <b>Sedentary</b>                   | <i>Daily Mean (CI 95%) (min/day)</i>             | 452.5 (434.1; 471.6)        | 389.6 (373.0; 406.9)        | 373.0 (361.9; 384.4)         | 1.16 (1.10; 1.23)          | <0.001  | 1.21 (1.15; 1.28)          | <0.001  | 1.04 (0.99; 1.10)          | 0.1010  |
|                                    | <i>Daily % (CI 95%)</i>                          | 51.64% (46.08%; 57.20%)     | 48.42% (43.12%; 53.71%)     | 40.39% (37.07%; 43.71%)      | 3.22% (-3.410%; 9.855%)    | 0.3409  | 11.25% (5.019%; 17.477%)   | <0.001  | 8.03% (2.148%; 13.903%)    | 0.0074  |
| <b>Light</b>                       | <i>Daily Mean (CI 95%) (min/day)</i>             | 373.5 (357.5; 390.2)        | 349.7 (334.2; 365.9)        | 467.6 (454.7; 480.8)         | 1.07 (1.00; 1.14)          | 0.0350  | 0.80 (0.76; 0.84)          | <0.001  | 0.75 (0.71; 0.79)          | <0.001  |
|                                    | <i>Daily % (CI 95%)</i>                          | 43.40% (38.45%; 48.36%)     | 43.13% (38.72%; 47.54%)     | 49.17% (46.36%; 51.98%)      | 0.27% (-5.474%; 6.018%)    | 0.9261  | -5.77% (-11.260%; -0.276%) | 0.0395  | -6.04% (-10.946%; -1.134%) | 0.0158  |
| <b>Moderate</b>                    | <i>Daily Mean (CI 95%) (min/day)</i>             | 50.9 (46.6; 55.7)           | 76.0 (70.1; 82.3)           | 112.0 (106.9; 117.3)         | 0.67 (0.60; 0.75)          | <0.001  | 0.46 (0.41; 0.50)          | <0.001  | 0.68 (0.62; 0.74)          | <0.001  |
|                                    | <i>Daily % (CI 95%)</i>                          | 4.93% (3.43%; 6.43%)        | 8.41% (6.15%; 10.66%)       | 10.31% (8.62%; 12.00%)       | -3.48% (-5.783%; -1.168%)  | 0.0032  | -5.38% (-7.468%; -3.294%)  | <0.001  | -1.91% (-4.498%; 0.686%)   | 0.1496  |

|                 |                                      |                      |                       |                        |                           |            |                           |            |                           |            |
|-----------------|--------------------------------------|----------------------|-----------------------|------------------------|---------------------------|------------|---------------------------|------------|---------------------------|------------|
| <b>Vigorous</b> | <i>Daily Mean (CI 95%) (min/day)</i> | 2.2 (1.7; 2.9)       | 3.4 (2.8; 4.3)        | 5.6 (5.0; 6.3)         | 0.64 (0.46; 0.90)         | 0.009<br>3 | 0.40 (0.30; 0.52)         | <0.00<br>1 | 0.62 (0.48; 0.79)         | <0.00<br>1 |
|                 | <i>Daily % (CI 95%)</i>              | 0.03% (0.01%; 0.04%) | 0.04% (0.02%; 0.07%)  | 0.12% (0.07%; 0.18%)   | -0.02% (-0.046%; -0.008%) | 0.169<br>8 | -0.10% (-0.146%; -0.051%) | <0.00<br>1 | -0.08% (-0.128%; -0.031%) | 0.001<br>5 |
| <b>MVPA</b>     | <i>Daily Mean (CI 95%) (min/day)</i> | 44.6 (35.1; 56.6)    | 64.1 (51.1; 80.4)     | 91.3 (78.3; 106.4)     | 0.70 (0.53; 0.92)         | 0.010<br>8 | 0.49 (0.37; 0.64)         | <0.00<br>1 | 0.70 (0.55; 0.90)         | 0.004<br>6 |
|                 | <i>Daily % (CI 95%)</i>              | 4.99% (3.52%; 6.46%) | 8.51% (6.30%; 10.72%) | 10.66% (8.98%; 12.34%) | -3.52% (-5.780%; -1.268%) | 0.002<br>2 | -5.67% (-7.731%; -3.615%) | <0.00<br>1 | -2.15% (-4.697%; -0.398%) | 0.098<br>2 |

§Estimates are represented by rate ratios

\*Estimates are represented by differences

° Models were adjusted for daily % of wearing time, number of cigarettes and season of measurement. Average group estimates are relative to 90% daily wearing time

Table 4S.

## Between-group differences for wake time and physical activity levels during the daytime – WEEKDAYS°

|                                    |  |                             |                             |                              | RESIDENTIAL VS OUTPATIENTS |                 | RESIDENTIAL VS CONTROLS    |                 | OUTPATIENTS VS CONTROLS    |             |
|------------------------------------|--|-----------------------------|-----------------------------|------------------------------|----------------------------|-----------------|----------------------------|-----------------|----------------------------|-------------|
|                                    |  | RESIDENTIAL<br>N = 53 (25%) | OUTPATIENTS<br>N = 46 (22%) | CONTROLS<br>N = 111<br>(53%) | ESTIMATE<br>(95% CI)       | p-<br>valu<br>e | ESTIMATE<br>(95% CI)       | p-<br>valu<br>e | ESTIMATE<br>(95% CI)       | p-<br>value |
| <b>WAKE TIME</b>                   |  |                             |                             |                              |                            |                 |                            |                 |                            |             |
| <b>WAKE TIME</b>                   | Daily Mean (CI 95%) (min/day) <sup>§</sup> | 847.7 (824.5; 871.7)        | 822.2 (797.9; 847.2)        | 981.7 (963.4; 1000.4)        | 1.03 (0.98; 1.08)          | 0.31            | 0.86 (0.83; 0.90)          | <0.001          | 0.84 (0.80; 0.87)          | <0.001      |
|                                    | Daily % (CI 95%) <sup>§</sup>              | 66.4 (64.7; 68.2)           | 62.4 (60.6; 64.2)           | 73.2 (71.9; 74.5)            | 1.06 (1.02; 1.12)          | 0.0058          | 0.91 (0.87; 0.94)          | <0.001          | 0.85 (0.82; 0.89)          | <0.001      |
| <b>PHYSICAL ACTIVITY INTENSITY</b> |  |                             |                             |                              |                            |                 |                            |                 |                            |             |
| <b>Sedentary</b>                   | Daily Mean (CI 95%) (min/day)              | 448.1 (428.4; 468.7)        | 380.6 (362.7; 399.4)        | 376.5 (364.3; 389.0)         | 1.18 (1.10; 1.26)          | <0.001          | 1.19 (1.12; 1.26)          | <0.001          | 1.01 (0.95; 1.07)          | 0.7077      |
|                                    | Daily % (CI 95%)                           | 51.72% (46.05%; 57.39%)     | 47.51% (42.14%; 52.88%)     | 40.52% (37.12%; 43.92%)      | 4.21% (-2.524%; 10.947%)   | 0.2204          | 11.20% (4.870%; 17.525%)   | <0.001          | 6.99% (1.030%; 12.942%)    | 0.0215      |
| <b>Light</b>                       | Daily Mean (CI 95%) (min/day)              | 378.0 (360.4; 396.4)        | 361.3 (343.8; 379.6)        | 483.3 (469.1; 497.9)         | 1.05 (0.98; 1.12)          | 0.1855          | 0.78 (0.74; 0.83)          | <0.001          | 0.75 (0.71; 0.79)          | <0.001      |
|                                    | Daily % (CI 95%)                           | 43.23% (38.15%; 48.31%)     | 43.68% (39.16%; 48.20%)     | 49.13% (46.22%; 52.05%)      | -0.45% (-6.328%; 5.436%)   | 0.8818          | -5.90% (-11.522%; -0.280%) | 0.0396          | -5.45% (-10.483%; -0.426%) | 0.0335      |
| <b>Moderate</b>                    | Daily Mean (CI 95%) (min/day)              | 51.9 (46.9; 57.5)           | 79.9 (73.0; 87.6)           | 113.2 (107.3; 119.3)         | 0.65 (0.57; 0.74)          | <0.001          | 0.46 (0.41; 0.51)          | <0.001          | 0.71 (0.64; 0.78)          | <0.001      |
|                                    | Daily % (CI 95%)                           | 5.02% (3.53%; 6.51%)        | 8.77% (6.48%; 11.05%)       | 10.23% (8.57%; 11.88%)       | -3.75% (-6.083%; -1.412%)  | 0.0017          | -5.21% (-7.268%; -3.148%)  | <0.001          | -1.46% (-4.061%; 1.139%)   | 0.2707      |

|                 |                                      |                      |                       |                        |                           |            |                           |            |                           |            |
|-----------------|--------------------------------------|----------------------|-----------------------|------------------------|---------------------------|------------|---------------------------|------------|---------------------------|------------|
| <b>Vigorous</b> | <i>Daily Mean (CI 95%) (min/day)</i> | 2.4 (1.8; 3.3)       | 3.6 (2.8; 4.6)        | 5.4 (4.7; 6.2)         | 0.68 (0.46; 0.99)         | 0.045<br>4 | 0.45 (0.33; 0.62)         | <0.00<br>1 | 0.66 (0.50; 0.88)         | 0.005<br>2 |
|                 | <i>Daily % (CI 95%)</i>              | 0.03% (0.01%; 0.05%) | 0.05% (0.02%; 0.07%)  | 0.12% (0.07%; 0.16%)   | -0.02% (-0.047%; -0.011%) | 0.233<br>4 | -0.09% (-0.134%; -0.042%) | <0.00<br>1 | -0.07% (-0.119%; -0.022%) | 0.004<br>3 |
| <b>MVPA</b>     | <i>Daily Mean (CI 95%) (min/day)</i> | 44.5 (34.6; 57.1)    | 68.3 (53.9; 86.5)     | 94.0 (79.9; 110.5)     | 0.65 (0.49; 0.87)         | 0.003<br>8 | 0.47 (0.36; 0.62)         | <0.00<br>1 | 0.73 (0.56; 0.94)         | 0.013<br>8 |
|                 | <i>Daily % (CI 95%)</i>              | 5.09% (3.57%; 6.60%) | 8.90% (6.58%; 11.23%) | 10.60% (8.89%; 12.31%) | -3.81% (-6.184%; -1.446%) | 0.001<br>6 | -5.51% (-7.621%; -3.408%) | <0.00<br>1 | -1.70% (-4.350%; 0.949%)  | 0.208<br>5 |

§Estimates are represented by rate ratios

\*Estimates are represented by differences

° Models were adjusted for daily % of wearing time, number of cigarettes and season of measurement. Average group estimates are relative to 90% daily wearing time



Table 5S.

## Between-group differences for wake time and physical activity levels during the daytime – WEEKENDS°

|                                    |  |                             |                             |                              | RESIDENTIAL VS OUTPATIENTS |                 | RESIDENTIAL VS CONTROLS    |                 | OUTPATIENTS VS CONTROLS    |             |
|------------------------------------|--|-----------------------------|-----------------------------|------------------------------|----------------------------|-----------------|----------------------------|-----------------|----------------------------|-------------|
|                                    |  | RESIDENTIAL<br>N = 53 (25%) | OUTPATIENTS<br>N = 46 (22%) | CONTROLS<br>N = 111<br>(53%) | ESTIMATE<br>(95% CI)       | p-<br>valu<br>e | ESTIMATE<br>(95% CI)       | p-<br>valu<br>e | ESTIMATE<br>(95% CI)       | p-<br>value |
| <b>WAKE TIME</b>                   |  |                             |                             |                              |                            |                 |                            |                 |                            |             |
| <b>WAKE TIME</b>                   | <i>Daily Mean (CI 95%) (min/day)<sup>§</sup></i> | 827.7 (797.8; 858.7)        | 808.1 (776.7; 840.9)        | 931.6 (908.7; 955.0)         | 1.02 (0.96; 1.09)          | 0.66            | 0.89 (0.84; 0.94)          | <0.001          | 0.87 (0.82; 0.92)          | <0.001      |
|                                    | <i>Daily % (CI 95%)<sup>§</sup></i>              | 60.5 (58.2; 62.9)           | 57.6 (55.3; 60.1)           | 66.9 (65.2; 68.7)            | 1.05 (0.98; 1.12)          | 0.22            | 0.90 (0.86; 0.96)          | <0.001          | 0.86 (0.81; 0.91)          | <0.001      |
| <b>PHYSICAL ACTIVITY INTENSITY</b> |  |                             |                             |                              |                            |                 |                            |                 |                            |             |
| <b>Sedentary</b>                   | <i>Daily Mean (CI 95%) (min/day)</i>             | 465.1 (434.5; 497.9)        | 416.6 (388.3; 446.9)        | 374.2 (355.9; 393.5)         | 1.12 (1.01; 1.23)          | 0.0248          | 1.24 (1.14; 1.36)          | <0.001          | 1.11 (1.02; 1.21)          | 0.0134      |
|                                    | <i>Daily % (CI 95%)</i>                          | 53.95% (48.05%; 59.84%)     | 52.81% (47.15%; 58.47%)     | 42.40% (38.69%; 46.11%)      | 1.14% (-5.867%; 8.141%)    | 0.7504          | 11.54% (4.984%; 18.103%)   | <0.001          | 10.41% (4.158%; 16.655%)   | 0.0011      |
| <b>Light</b>                       | <i>Daily Mean (CI 95%) (min/day)</i>             | 359.5 (333.6; 387.4)        | 320.1 (295.5; 346.8)        | 430.9 (410.9; 451.8)         | 1.12 (1.01; 1.25)          | 0.0340          | 0.83 (0.76; 0.91)          | <0.001          | 0.74 (0.68; 0.81)          | <0.001      |
|                                    | <i>Daily % (CI 95%)</i>                          | 41.58% (36.42%; 46.74%)     | 40.36% (35.71%; 45.02%)     | 47.93% (44.89%; 50.96%)      | 1.22% (-4.748%; 7.184%)    | 0.6891          | -6.35% (-12.003%; -0.694%) | 0.0278          | -7.57% (-12.659%; -2.474%) | 0.0036      |
| <b>Moderate</b>                    | <i>Daily Mean (CI 95%) (min/day)</i>             | 47.9 (40.7; 56.4)           | 65.1 (55.7; 75.9)           | 107.2 (98.6; 116.6)          | 0.74 (0.59; 0.92)          | 0.0064          | 0.45 (0.37; 0.54)          | <0.001          | 0.61 (0.51; 0.72)          | <0.001      |
|                                    | <i>Daily % (CI 95%)</i>                          | 4.46% (3.04%; 5.88%)        | 6.80% (4.82%; 8.77%)        | 9.59% (7.85%; 11.32%)        | -2.34% (-4.381%; -0.294%)  | 0.0250          | -5.13% (-7.146%; -3.108%)  | <0.001          | -2.79% (-5.114%; -0.465%)  | 0.0187      |

|                 |                                      |                      |                      |                       |                           |            |                           |            |                           |            |
|-----------------|--------------------------------------|----------------------|----------------------|-----------------------|---------------------------|------------|---------------------------|------------|---------------------------|------------|
| <b>Vigorous</b> | <i>Daily Mean (CI 95%) (min/day)</i> | 1.6 (1.0; 2.8)       | 3.1 (2.0; 4.7)       | 6.0 (4.8; 7.4)        | 0.53 (0.27; 1.07)         | 0.075<br>8 | 0.28 (0.15; 0.49)         | <0.00<br>1 | 0.52 (0.32; 0.83)         | 0.006<br>1 |
|                 | <i>Daily % (CI 95%)</i>              | 0.01% (0.00%; 0.02%) | 0.03% (0.00%; 0.06%) | 0.08% (0.02%; 0.14%)  | -0.02% (-0.040%; 0.005%)  | 0.128<br>6 | -0.07% (-0.124%; -0.011%) | 0.018<br>4 | -0.05% (-0.097%; -0.003%) | 0.036<br>4 |
| <b>MVPA</b>     | <i>Daily Mean (CI 95%) (min/day)</i> | 41.5 (31.6; 54.5)    | 54.8 (41.4; 72.7)    | 83.6 (66.7; 104.9)    | 0.76 (0.56; 1.02)         | 0.066      | 0.50 (0.38; 0.66)         | <0.00<br>1 | 0.66 (0.51; 0.84)         | <0.00<br>1 |
|                 | <i>Daily % (CI 95%)</i>              | 4.48% (3.06%; 5.90%) | 6.85% (4.88%; 8.82%) | 9.85% (8.08%; 11.62%) | -2.37% (-4.409%; -0.334%) | 0.022<br>5 | -5.37% (-7.407%; -3.331%) | <0.00<br>1 | -3.00% (-5.336%; -0.658%) | 0.012<br>0 |

*§Estimates are represented by rate ratios*

*\*Estimates are represented by differences*

*° All models were adjusted for daily % of wearing time, number of cigarettes and season of measurement. Average group estimates are relative to 90% daily wearing time*

Table 6S.

## Differences between the three groups for daily time use (15 specific daily activities)

| Activity   | Residential patients<br>N = 53 | Outpatients<br>N = 46 | Control patients<br>N = 111 | Residential patients /<br>Outpatients |         | Residential patients / Control<br>patients |         | Outpatients / Control patients |         |
|--|--------------------------------|-----------------------|-----------------------------|---------------------------------------|---------|--|---------|--------------------------------|---------|
|  | Mean (SD)                      | Mean (SD)             | Mean (SD)                   | Ratio (95% CI)                        | p-value | Ratio (95% CI)                             | p-value | Ratio (95% CI)                 | p-value |
| Sleep  | 0.32 (0.23; 0.45)              | 0.34 (0.24; 0.47)     | 0.10 (0.07; 0.13)           | 0.96 (0.56; 1.66)                     | 0.99    | 3.27 (2.00; 5.36)                          | <0.001  | 3.40 (2.03; 5.68)              | <0.001  |
| Sick in bed  | 0.00 (0.00; 0.00)              | 0.00 (0.00; 0.00)     | 0.00 (0.00; 0.00)           | 2.20 (0.06;76.56)                     | 0.86    | 4.44 (0.17; 113.22)                        | 0.53    | 2.01 (0.04; 92.61)             | 0.90    |
| Eat/drink/breakfast/snack  | 1.00 (0.86; 1.15)              | 0.87 (0.74; 1.02)     | 0.85 (0.76; 0.94)           | 1.15 (0.89; 1.48)                     | 0.43    | 1.18 (0.95; 1.46)                          | 0.16    | 1.03 (0.82; 1.29)              | 0.95    |
| Self-care  | 0.59 (0.47; 0.74)              | 0.37 (0.29; 0.49)     | 0.29 (0.24; 0.35)           | 1.57 (1.05; 2.36)                     | 0.025   | 2.02 (1.44; 2.84)                          | <0.001  | 1.29 (0.89; 1.87)              | 0.250   |
| Work or do an internship/apprenticeship                          | 0.10 (0.07; 0.15)              | 0.30 (0.22; 0.41)     | 1.66 (1.42; 1.93)           | 0.34 (0.20; 0.60)                     | <0.001  | 0.06 (0.04; 0.10)                          | <0.001  | 0.18 (0.12; 0.27)              | <0.001  |
| Study/attend training courses                                    | 0.03 (0.01; 0.07)              | 0.01 (0.00; 0.04)     | 0.02 (0.01; 0.05)           | 2.28 (0.53; 9.80)                     | 0.38    | 1.21 (0.38; 3.89)                          | 0.92    | 0.53 (0.15; 1.93)              | 0.48    |
| Cleaning, cooking, tidying up the house<br>or car, shopping      | 0.23 (0.17; 0.32)              | 0.41 (0.30; 0.56)     | 0.43 (0.35; 0.52)           | 0.55 (0.33; 0.94)                     | 0.0229  | 0.54 (0.34; 0.84)                          | 0.0031  | 0.97 (0.63; 1.49)              | 0.9841  |
| Taking care of someone or something<br>(people, animals, plants) | 0.03 (0.02; 0.06)              | 0.11 (0.06; 0.19)     | 0.20 (0.14; 0.28)           | 0.31 (0.11; 0.83)                     | 0.014   | 0.16 (0.07; 0.38)                          | <0.001  | 0.52 (0.25; 1.11)              | 0.107   |
| Voluntary activities   | 0.00 (0.00; 0.00)              | 0.00 (0.00; 0.00)     | 0.00 (0.00; 0.00)           | 0.82 (0.04;17.73)                     | 0.99    | 1.44 (0.09; 22.36)                         | 0.95    | 1.75 (0.11;27.57)              | 0.88    |
| Leisure activities   | 0.92 (0.74; 1.16)              | 0.79 (0.62; 1.02)     | 0.77 (0.65; 0.90)           | 1.16 (0.78; 1.73)                     | 0.65    | 1.20 (0.87; 1.67)                          | 0.38    | 1.04 (0.73; 1.47)              | 0.97    |
| think, rest, do nothing (no sleep)                               | 0.67 (0.52; 0.87)              | 0.49 (0.37; 0.65)     | 0.27 (0.22; 0.33)           | 1.37 (0.88; 2.15)                     | 0.2224  | 2.50 (1.70; 3.66)                          | <0.001  | 1.82 (1.21; 2.74)              | 0.0018  |
| Playing sports, physical activity                                | 0.06 (0.03; 0.11)              | 0.06 (0.03; 0.11)     | 0.07 (0.05; 0.11)           | 1.00 (0.40; 2.47)                     | 1.00    | 0.83 (0.39; 1.77)                          | 0.84    | 0.84 (0.39; 1.82)              | 0.85    |
| Getting around   | 0.12 (0.08; 0.19)              | 0.33 (0.24; 0.47)     | 0.34 (0.27; 0.42)           | 0.37 (0.20; 0.69)                     | <0.001  | 0.37 (0.22; 0.62)                          | <0.001  | 0.98 (0.61; 1.57)              | 0.99    |
| Watching TV/Listening to the Radio                               | 0.56 (0.41; 0.76)              | 0.75 (0.55; 1.03)     | 0.51 (0.41; 0.63)           | 0.75 (0.45; 1.26)                     | 0.391   | 1.11 (0.72; 1.72)                          | 0.833   | 1.49 (0.95; 2.32)              | 0.096   |
| Participate in religious activities                              | 0.00 (0.00; 0.01)              | 0.00 (0.00; 0.01)     | 0.00 (0.00; 0.00)           | 1.01 (0.09;10.96)                     | 1.00    | 3.68 (0.37; 36.79)                         | 0.38    | 3.64 (0.33;39.63)              | 0.41    |

**Table 7S.**  
**Emotions included in the EMA questionnaire\***

| <b>Emotions (in English language)</b> | <b>Emotions (in Italian language)</b> |
|---------------------------------------|---------------------------------------|
| Happy                                 | Felice                                |
| Sad                                   | Triste                                |
| Tired                                 | Stanco                                |
| Relaxed                               | Rilassato                             |
| Nervous                               | Nervoso                               |
| Quiet                                 | Calmo                                 |
| Full of energy                        | Pieno di energia                      |

*\*This section randomly showed seven emotional states and asked the participant how he/she felt that emotion at that current moment. The participant had to push on the screen and select the amount of that emotion on a bar from 0 to 100 (0 not at all - 100 a lot).*

FIGURE 1S

## FLOWCHART OF SAMPLING SELECTION

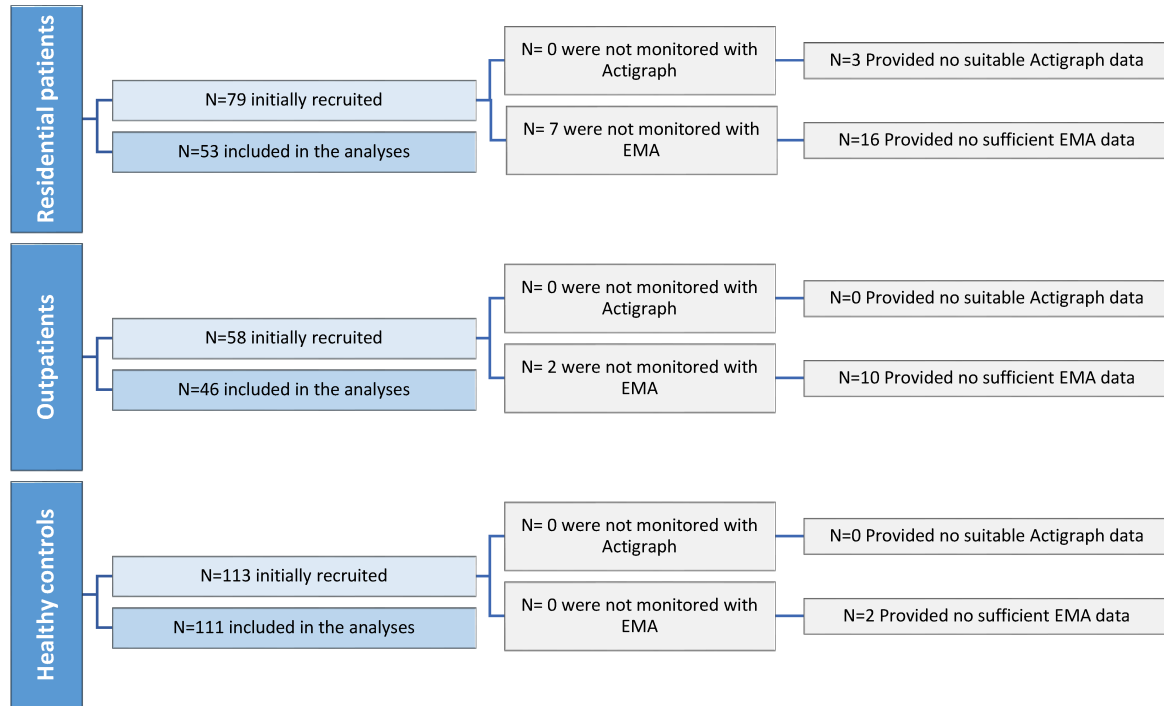


Figure 2S.

## Distribution of physical activity intensity among the three groups

