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# Corrigendum: Evaluation of Wearable Technology in Dementia: A Systematic Review and Meta-Analysis

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## A Corrigendum on

**Evaluation of Wearable Technology in Dementia: A Systematic Review and Meta-Analysis** by Cote, A. C., Phelps, R. J., Kabiri, N. S., Bhangu, J. S., and Thomas, K. K. (2021). *Front. Med.* 7:501104. doi: 10.3389/fmed.2020.501104

In the original article, there were mistakes in **Tables 1, 3** and **4** as published. **Table 1** Column 2 and **Table 3** citations were incorrect, and **Table 4** was mistakenly included as a duplicate of **Table 3**. The corrected **Tables 1, 3** and **4** appear below.

The authors apologize for this error and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

**TABLE 1 |** Patient setting and diagnostic criteria for 48 observational studies testing wearable technology in participants with dementia.

| Source                      | Diagnostic criteria  | Setting                                |
|-----------------------------|--|--|
| Aharon-Peretz et al. (7)    | DSM III-R (63)/NINCDS-ADRDA (64)   | Not stated                             |
| Ahmed et al. (8)            | McKhann et al. (65)/Gorno-Tempini et al. (66)/Rascovsky et al. (67)                              | Community (home)/In Lab                |
| Anderson et al. (12)        | Neary criteria (68)  | Community (home)                       |
| Brown et al. (14)           | Medical record diagnosis   | Nursing home                           |
| Carvalho-Bos et al. (15)    | NINCDS-ADRDA (64)/DSM-IV (69)  | Nursing home                           |
| David et al. (17)           | DSM-IV (69)  | Out-patient clinic                     |
| David et al. (18)           | NINCDS-ADRDA (64)  | Out-patient clinic                     |
| Eggermont and Scherder (19) | Medical record diagnosis   | Nursing home                           |
| Fetveit and Bjorvatn (20)   | Clinical Dementia Rating (CDR) scale (70)  | Nursing home                           |
| Fleiner et al. (22)         | ICD-10 (71)  | Psychiatric hospital                   |
| Gehrman et al. (23)         | Medical record diagnosis/NINCDS-ARDA (64)  | Nursing home                           |
| Ghali et al. (24)           | DSM-III-R (63)   | Dementia treatment Evaluation facility |
| Harper et al. (25)          | NINCDS-ADRDA (64)  | Hospital/clinical research center      |
| Harper et al. (26)          | NINCDS-ADRDA (64)  | Hospital/clinical research center      |
| Hatfield et al. (27)        | DSM-IV (69)/ NINCDS-ADRDA (64)   | Community (home)                       |
| Hooghiemstra et al. (28)    | DSM-V (72)/NINCDS-ADRDA (64)/Neary Criteria (68)/McKeith et al. (73)/Pohjasvaara et al. (74)     | Not stated                             |
| Ijmker and Lamoth (31)      | Clinician/ medical record diagnosis  | In laboratory                          |
| Iwata et al. (32)           | DSM-IV (69)/NINCDS-ARDA (64)   | Not stated                             |
| James et al. (33)           | NINCDS-ARDA (64)   | Community (home)                       |
| Kodama et al. (34)          | DSM-III-R (63)   | Community (home)                       |
| König et al. (35)           | International working group–2 criteria (IWG-2) (75)  | Memory clinic                          |
| Kuhlmei et al. (36)         | NINCDS-ADRDA (64)/NINDS-AIREN (76)   | Not stated                             |
| La Morgia et al. (37)       | NINCDS-ADRDA (64)  | Not stated                             |
| Lamoth et al. (38)          | Alzheimer's association criteria   | Clinic/hospital                        |
| Landolt et al. (39)         | Autopsy or biopsy confirmation   | Hospital/ nursing home                 |
| Lee et al. (40)             | NINCDS-ADRDA (64)  | Not stated                             |
| Leger et al. (41)           | DSM-V (72)/ NINCDS-ADRDA (64)/MMSE $\leq 25$ and $\geq 15$ (77)/CDR (Score of 0.5, 1, or 2) (70) | Out-patient clinic                     |
| McCurry et al. (42)         | Family physician/medical record diagnosis  | Community (home)                       |
| Merrilees et al. (43)       | Neary criteria for frontotemporal lobar degeneration (78)  | Community (home)                       |
| Most et al. (44)            | NINCDS- ADRDA (64)   | Not stated                             |

(Continued)

**TABLE 1 |** Continued

| Source                         | Diagnostic criteria   | Setting                       |
|--------------------------------|---|-------------------------------|
| Moyle et al. (45)              | Medical record diagnosis  | Long-term care facility       |
| Mulin et al. (46)              | NINCDS- ADRDA (64)  | Community (home)              |
| Murphy et al. (47)             | MMSE $< 23$ (77)  | Nursing home                  |
| Olsen et al. (48)              | Medical record diagnosis or MMSE $< 25$ (77)  | Nursing home/community (home) |
| Paavilainen et al. (49)        | CDR $> 0.5$ (70)/ MMSE $< 20$ (77)  | Nursing home                  |
| Pollak and Stokes (50)         | Mattis dementia rating scale total score $< 123$ (79) Mattis dementia rating scale memory score $< 19$ (79) | Community (home)              |
| Rindlisbacher and Hopkins (52) | DSM-III-R (63)  | Hospital                      |
| Schwenk et al. (51)            | NINCDS-ADRDA (64)/NINDS-AIREN (76)  | Community (home)              |
| Valembois et al. (53)          | DSM-IV (69)   | Hospital                      |
| van Alphen et al. (54)         | Medical record diagnosis  | Community (home)/nursing home |
| van Someren et al. (55)        | DSM-III-R (63)/NINCDS-ADRDA (64)  | Community (home)/nursing home |
| Varma and Watts (56)           | NINCDS-ADRDA (64)   | Community (home)              |
| Viegas et al. (57)             | DSM-IV (69)/MMSE $\leq 24$ (77)   | Nursing home                  |
| Volicer et al. (58)            | NINCDS-ADRDA (64)/DSM-III-R (63)  | Hospital                      |
| Wams et al. (59)               | NINCDS-ADRDA (64)   | Community (home)              |
| Weissova et al. (60)           | NINCDS-ADRDA (64)   | Community (home)              |
| Wirz-Justice et al. (61)       | DSM –IV (69)  | Hospital                      |
| Yesavage et al. (62)           | NINCDS-ADRDA (64)   | Community (home)              |

**TABLE 3** | Specific outcome measures of daily activity reported by included studies.

| Source                         | Daily activity | Peak daily activity | Mean activity counts | Daytime activity | Nighttime activity | Immobile hours | Activity patterns |
|--------------------------------|----------------|---------------------|----------------------|------------------|--------------------|----------------|-------------------|
| Aharon-Peretz et al. (7)       | +              |                     |                      |                  |                    |                |                   |
| Ahmed et al. (8)               |                |                     | +                    |                  |                    |                |                   |
| Carvalho-Bos et al. (15)       |                |                     |                      | +                |                    |                |                   |
| David et al. (17)              |                |                     | +                    |                  |                    |                |                   |
| David et al. (18)              |                |                     |                      | +                | -                  |                |                   |
| Eggermont and Scherder (19)    |                |                     |                      | +                | -                  |                |                   |
| Ghali et al. (24)              |                | +                   |                      |                  |                    |                |                   |
| Harper et al. (25)             | +              |                     |                      |                  | -                  |                |                   |
| Harper et al. (26)             | +              |                     |                      |                  | +                  |                |                   |
| James et al. (33)              | +              |                     |                      |                  |                    |                |                   |
| Kuhlmei et al. (36)            |                |                     |                      | +                |                    |                |                   |
| Merrilees et al. (43)          |                |                     |                      |                  |                    | +              |                   |
| Moyle et al. (45)              | +              |                     |                      |                  |                    |                |                   |
| Mulin et al. (46)              |                |                     | +                    |                  |                    |                |                   |
| Olsen et al. (48)              |                |                     |                      |                  |                    |                | +                 |
| Paavilainen et al. (49)        |                |                     | +                    |                  |                    |                |                   |
| Pollak and Stokes. (50)        |                |                     |                      | +                | -                  |                |                   |
| Rindlisbacher and Hopkins (52) |                |                     |                      |                  |                    |                | +                 |
| Wirz-Justice et al. (61)       |                |                     | +                    |                  |                    |                |                   |
| Valembos et al. (53)           | +              |                     |                      |                  |                    |                |                   |
| van Alphen et al. (54)         |                |                     |                      |                  |                    |                | +                 |
| Volicer et al. (58)            | +              |                     |                      |                  |                    |                |                   |
| Varma and Watts. (56)          | +              | +                   |                      |                  |                    |                |                   |

+ indicates a significant association or difference reported.

- indicates no significant association or difference reported.

**TABLE 4** | Specific outcome measures of sleep and circadian rhythm reported by included studies.

| Source                      | WASO | TST | SE | IV | IS | RA | M10 | L5 | Mesor | Acrophase | Amplitude |
|-----------------------------|------|-----|----|----|----|----|-----|----|-------|-----------|-----------|
| Aharon-Peretz et al. (7)    |      | -   | +  |    |    |    |     |    |       |           |           |
| Anderson et al. (12)        |      |     |    | -  | -  | -  | -   | -  |       |           |           |
| Brown et al. (14)           |      | +   | -  |    |    |    |     |    |       |           |           |
| Carvalho-Bos et al. (15)    |      |     |    | +  | +  | +  | +   | +  |       |           |           |
| Eggermont and Scherder (19) |      |     |    | +  | +  | +  |     |    |       |           |           |
| Fetveit and Bjorvatn (20)   | +    | +   | -  |    |    |    |     |    | -     | -         | -         |
| Gehrman et al. (23)         |      |     |    |    |    |    |     |    | -     | -         | -         |
| Harper et al. (25)          |      |     |    | -  | +  | -  | +   | +  | +     | +         | +         |
| Harper et al. (26)          |      |     |    | +  | +  | -  | +   | +  | +     |           | +         |
| Hatfield et al. (27)        |      |     |    | +  | +  | +  | +   | -  |       |           |           |
| Hooghiemstra et al. (28)    | +    | +   | -  | +  | -  | +  |     |    |       |           |           |
| Kodama et al. (34)          |      |     |    | +  | +  | +  |     |    |       |           |           |
| La Morgia et al. (37)       |      |     | +  | -  | -  | +  | +   | -  |       |           |           |
| Landolt et al. (39)         |      | +   |    |    |    |    |     |    |       |           |           |
| Lee et al. (40)             | -    | -   | -  |    |    |    |     |    |       | -         | -         |
| Leger et al. (41)           | -    | +   | +  | -  | -  |    |     |    |       |           |           |
| McCurry et al. (42)         |      | -   |    |    |    |    |     |    |       |           |           |
| Most et al. (44)            | +    | -   | +  | +  | +  | -  | -   | -  |       |           |           |
| Mulin et al. (46)           | +    | -   |    |    |    |    |     |    |       |           |           |
| Murphy et al. (47)          |      | +   |    |    |    |    |     |    |       |           |           |
| Olsen et al. (48)           | -    | -   |    |    |    |    |     |    |       |           |           |
| Paavilainen et al. (49)     |      |     |    |    |    |    |     |    |       | -         | +         |
| Pollak and Stokes (50)      |      |     |    |    |    |    |     |    |       | -         | +         |
| van Someren et al. (55)     |      |     |    | +  | +  | +  | +   |    |       |           |           |
| Viegas et al. (57)          | +    | +   |    |    |    |    |     |    |       |           |           |
| Volicer et al. (58)         |      |     |    |    | +  |    |     |    |       | +         | -         |
| Wams et al. (59)            | -    | +   | -  |    |    |    |     |    |       |           |           |
| Weissova et al. (60)        | -    | +   | -  |    |    |    |     |    |       |           |           |
| Wirz-Justice et al. (61)    | -    |     | -  | -  | -  | -  | +   | +  |       |           | +         |
| Yesavage et al. (62)        | +    | -   | +  |    |    |    |     |    | -     | -         | -         |

+indicates a significant association or difference reported.

-indicates no significant association or difference reported.

IS, Interdaily stability; IV, Intradaily variability; L5, Activity of least active 5 h; M10, Activity of most active 10 h; RA, Relative amplitude; SE, Sleep efficiency; TST, Total sleep time; WASO, Wake after sleep onset.

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