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| **Table 1.** Structured tasks performed during the observational study (Study 2) |
| Task | Expected classification |  |
| 1. Sitting upright
 | *This task should be classified correctly by both methods, as the thigh is horizontal and not rotating, and the trunk device is vertical.* |  |
| 1. Sitting while leaning backwards (angle between thigh and trunk ~130°-135°)
 | *This task could be classified incorrectly by the dual-monitor method if the trunk device is classified as ‘sedentary’ (horizontal).* |  |
| 1. Sitting with slouched posture (leaning with elbows on the knees)
 | *This task could be classified incorrectly by the dual-monitor method if the trunk device is classified as ‘sedentary’ (horizontal).* |  |
| 1. Sitting cross legged
 | *This task could be classified incorrectly as lying by the single-monitor method, because the thigh is rotated.* |  |
| 1. Lying supine with legs straight
 | *This task is unlikely to be captured as lying by the single-monitor method, since the thigh is not rotating.* |  |
| 1. Lying on the side (knees slightly flexed, without movement)
 | *This task could be captured as lying by the single-monitor method, as the thigh will need to rotate when going from sitting to side-lying.*  |  |
| 1. Lying prone with legs straight
 | *This task could be captured as lying by the single-monitor method, if the rotation of the thigh (when moving from sitting to lying prone) is captured within the sedentary event.* |  |
| 1. Lying with knees flexed
 | *This task is likely to be captured as lying by both methods. The thigh-monitor in this task will be vertical, but as it is upside down, the acceleration signal will be positive (as opposed to negative when it is vertical and in a standing position). Thus, the value of acceleration measured will be higher than a threshold for ‘sedentary’ and should not be misclassified as ‘upright’.* |  |
| 1. Lying while changing position several times (lying supine/on the side/prone)
 | *This task could be classified correctly as lying by both methods, since the thigh is rotating during the task and both monitors are in a horizontal position.* |  |
| 1. Lying while flexing and extending the knees
 | *This task was included to explore the classification by both methods if some movement occurred during a lying period.* |  |
| 1. Change between lying supine and sitting repeatedly within the duration of the task
 | *This task is likely to be classified as ‘sitting’ by the single-monitor method, but will not detect the lying periods within the task, because the thigh is not rotating.* |  |