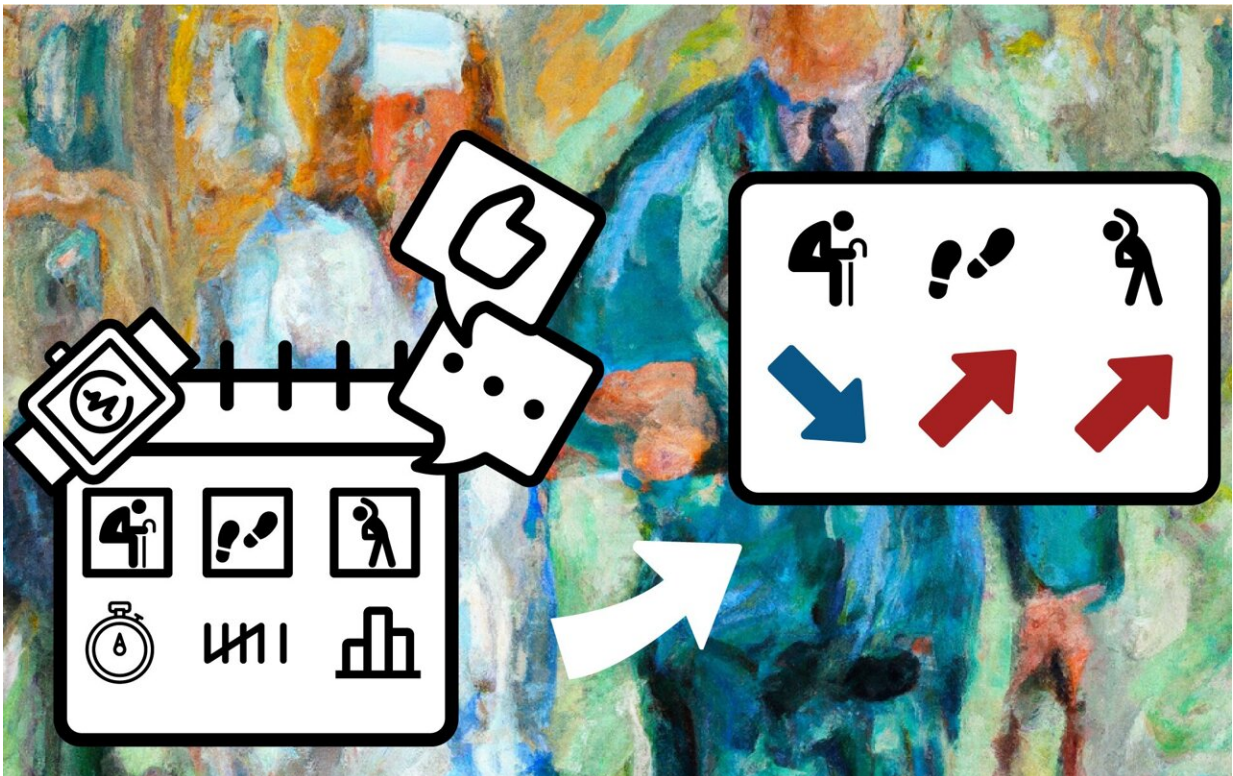


Self-monitoring improves physical activity of care-needing elderly: Study

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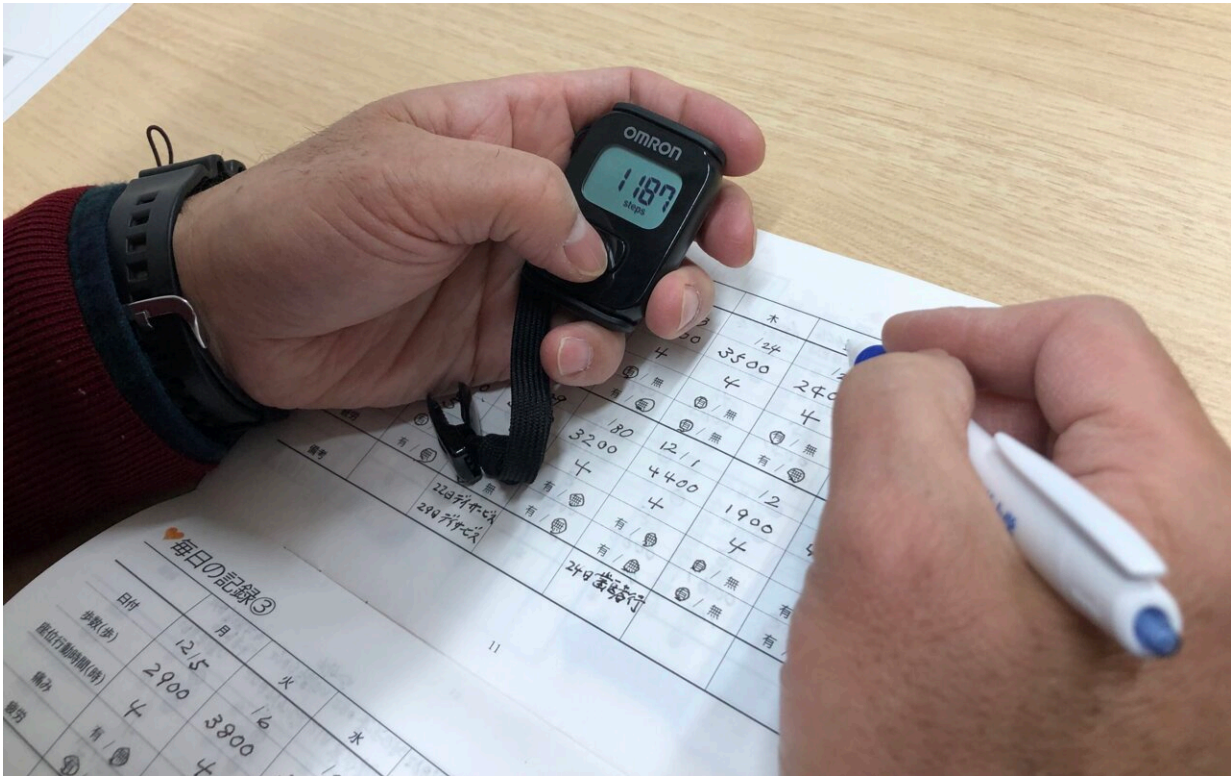


Kobe University health scientists Izawa Kazuhiro, Kitamura Masahiro and their team showed that self-monitoring is an effective means to promote the physical activity in elderly people in need of long-term care support. They asked participants to set goals for increasing steps as well as light physical activity and decreasing time spent sitting, and to daily monitor their progress with an accelerometer and by recording it on a calendar. Once a week they received feedback on their progress from health practitioners. Credit: Kobe University

Self-monitoring of physical activity with an accelerometer and feedback is an effective tool to improve physical activity in elderly people requiring long-term support. The Kobe University study is the first to show that with simple and safe means, the physical activity of this demographic can be improved, which is expected to help prevent serious illness and reduce costs for long-term care.

Taking more steps and sitting less is well known as having a significant influence on a wide range of noncommunicable diseases such as heart disease, diabetes, orthopedic diseases, and stroke. This is particularly problematic in senior citizens who depend on long-term care, such as in day-care centers, as it is known that they take fewer steps and spend more time sitting than healthy people of similar age.

The resulting higher risk of falling ill not only decreases health-related quality of life in these people but also stretches already scarce resources in health care systems. While it is known that self-monitoring can improve [physical activity](#) even among the elderly, the effectiveness of this approach has not been shown for this high-risk demographic.



After an explanation of the importance of increasing physical activity and receiving an accelerometer, study participants who were encouraged to set goals, keep track of their progress and who received feedback increased the number of daily steps from an average of 1268 to 1683, the per-day duration of light physical activity from 277 minutes to 293 minutes, and decreased the time spent sitting from 547 minutes to 523 minutes per day. A control group who did not record their progress nor received feedback did not improve physical activity. Credit: Izawa Kazuhiro

The Kobe University research team of health scientists IZAWA Kazuhiro and KITAMURA Masahiro filled this gap by conducting a [comparative analysis](#) with 52 long-term care patients at a daycare center in Japan on the effectiveness of self-monitoring of physical activity. They educated the participants on the importance of increasing physical activity and asked participants to wear accelerometers that record steps,

sitting time, and activity of various intensities.

The 26 participants in the intervention group were additionally asked to record their progress in a daily calendar and receive weekly feedback and advice.

The results now [published](#) in the journal *European Geriatric Medicine* show that the [intervention group](#) took more steps, spent less time sitting, and were more engaged in light physical activity.

The authors write, "The results of this intervention promoting physical activity in this target population were novel to this study. Older people with [long-term care](#) needs have reduced mobility and activity compared to healthy older people, so increasing physical activity is not easy."

"However, goals such as increasing the number of steps can be easily understood and practiced, and reducing the time spent in sedentary behavior, such as by standing or taking a short walk, are activities that can be performed indoors and do not require high mobility."



Study participants wore accelerometers for at least 10 hours per day, 5 days per week over a period of 5 weeks. The device captured steps taken per day and "metabolic equivalent values" every 10 seconds, which were used to calculate the time spent sitting and doing light, moderate or vigorous physical activity. Credit: Izawa Kazuhiro

Since this was the first study to include not only steps in self-monitoring but also time spent sitting, it is possible that these two affected each other. The Kobe University researchers explain, "A previous study in healthy older people reported that moderate to vigorous physical activity increases when sedentary behavior decreases, which is somewhat similar to the findings in the present study."

Izawa adds, "While traditional self-monitoring interventions have focused primarily on the number of steps taken, this study focused on both steps taken and sedentary behavior. As a result, we believe this may have facilitated their behavior change."

While this study clearly shows the effectiveness of such simple measures as wearing an accelerometer, self-monitoring, and receiving feedback on one's progress on physical activity, its five-week period was too short to capture actual benefits on health-related quality of life.

Izawa and Kitamura write, "The results of this study may serve as an important foundation for future research on promoting physical activity among older adults in need of assistance. In particular, self-monitoring interventions have been shown to contribute to improved physical activity and can be applied to care prevention strategies. Future studies should include larger samples, a broader range of activities, and long-term follow-up to verify the sustained effectiveness of the intervention."

More information: Masahiro Kitamura et al, Effects of self-monitoring using an accelerometer on physical activity of older people with long-term care insurance in Japan: a randomized controlled trial, *European Geriatric Medicine* (2024). [DOI: 10.1007/s41999-024-00935-w](https://doi.org/10.1007/s41999-024-00935-w)

Provided by Kobe University

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