

Comments and Corrections

Corrections to “Predicting Free-Living Energy Expenditure Using a Miniaturized Ear-Worn Sensor: An Evaluation Against Doubly Labeled Water”

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In [1], the mean absolute deviation was incorrect in the Abstract. This should have read as follows.

Abstract—Accurate estimation of daily total energy expenditure (EE) is a prerequisite for assisted weight management and assessing certain health conditions. The use of wearable sensors for predicting free-living EE is challenged by consistent sensor placement, user compliance, and estimation methods used. This paper examines whether a single ear-worn accelerometer can be used for EE estimation under free-living conditions. An EE prediction model as first derived and validated in a controlled setting using healthy subjects involving different physical activities. Ten different activities were assessed showing a tenfold cross validation error of 0.24. Furthermore, the EE prediction model shows a mean absolute deviation (MAD) below 1.2 metabolic equivalent of tasks. The same model was applied to a free-living setting with a different population for further validation. The results were compared against those derived from doubly labeled water. In free-living settings, the predicted daily EE has a correlation of 0.74, $p < 0.008$, and a MAD of 272 kcal day. These results demonstrate that laboratory-derived prediction models can be used to predict EE under free-living conditions.

REFERENCE

- [1] L. Bouarfa, L. Atallah, R. M. Kwasnicki, C. Pettitt, G. Frost, and G. Z. Yang, “Predicting free-living energy expenditure using a miniaturized ear-worn sensor: An evaluation against doubly labeled water,” *IEEE Trans. Biomed. Eng.*, vol. 61, no. 2, pp. 566–575, Feb. 2014.

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