



Editorial

Int Neurorol J 2018;22(Suppl 2):S65-65
<https://doi.org/10.5213/inj.1820edi.005>
pISSN 2093-4777 · eISSN 2093-6931



Study on the Voiding Detection System Using Wearable Device

Young Seon Hwang  <https://orcid.org/0000-0002-3628-4573>

Ethics Editor

Attorney at Patent, Hanol Intellectual Property & Law, Seoul, Korea
E-mail: yongseonhwang@hanollawip.com



Self-recorded voiding diaries by patients are widely used as a diagnostic tool for urinary disorders, including dysuria, delayed voiding, frequent urination, and nocturia.

However, using a self-administered voiding diary is not only a source of inconvenience to patients, but also a concern for doctors in terms of the validity of the data. Some patients may also make incorrect voiding diary, such as the actual voiding record and the record in the voiding diary are incorrect, burdened by the pressure of managing the data by themselves.

A recurrent neural network-based long short-term memory method in the process of extracting data related to voiding from the data detected by the wearable device was applied to detect the patient's voiding patterns with a wearable device at an accuracy rate of 90% or higher, compared to the conventional 70%–80% accuracy, potentially freeing patients from being forced to engage in an inconvenient and cumbersome data-keeping regimen, while providing more precise data on daily voiding patterns to both patients and doctors. This technology is expected to be widely utilized in the future [1].

This field of technology, which enables a broad range of data on human physical activities to be collected through wearable devices, is currently being studied and developed by many tech giants, including Google and Apple. The algorithm presented in this paper [1] is believed to be a breakthrough solution that will help lead this trend by yielding significant improvements and advancements. Successful commercialization of the technology will have a substantial impact by making it easier to diagnose urinary disorders precisely.

• **Conflict of Interest:** No potential conflict of interest relevant to this article was reported.

REFERENCE

1. Whangbo TK, Eun SJ, Jung EY, Park DK, Kim SJ, Kim CH, et al. Personalized urination activity recognition based on a recurrent neural network using smart band. *Int Neurorol J* 2018;22(Suppl 2):S91-100.



This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.