

## Japan to leverage advanced IoT technology for flatfoot patients

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### To measure the effect of insoles for treating flat feet



Japan-based NEC has signed a joint research agreement with Teikyo University, and Mizonokuchi Hospital to visualize the effect of therapeutic insoles on the gait (quality of walking) of flatfoot patients, and provide advanced IoT technology. This research will be conducted from September 2021 to March 2023.

Flat feet are said to affect about 15% of adults, and the arch of the foot may decrease due to damage to the tendons that support the arch of the foot, causing pain and imbalance in the foot.

In this study, NEC's gait analysis sensor is attached to the therapeutic insole to quantify the "gait" of the patient and perform an objective evaluation. Sensors can measure walking speed, stride length, ground contact angle, etc., and the measured data is automatically sent to the cloud via a smartphone.

NEC estimates "gait" based on the walking locus measured by the sensor by utilizing the know-how of wellness solutions accumulated so far and its own "gait estimation model", and Mizoguchi Hospital has a therapeutic insole.

By providing IoT and its utilization know-how, NEC will contribute to the establishment of a quantitative evaluation method that can be easily used in the field of medical treatment and rehabilitation for the effects of insole treatment for flat feet.

NEC aims to accelerate digital transformation in medical care and realize a healthy and long-lived society where people can live vigorously by providing safe and secure products and services that are in line with the times, including AI technology.

**Image Caption:** *Medical insoles created by Teikyo University and NEC's gait analysis sensor: (Left) sensor attached to the insole; (Right) Measure walking data; Credit: NEC Corporation*