# TREMOR AI

**DENSAN**

Hand tremor could be a symptom of nervous system disorders.

"TREMOR AI" APP shows you the probability of the types of tremor you may have.
1. Cerebellar type
 2. Tremor type
 3. Normal type
All you need to do is just to *trace a spiral* and *take a photo*.

**Free** of charge

Please use this application as an assistant tool in clinical practice or health check at home

## TensorFlow Lite

Download on the App Store

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**1** **Easy operation and AI diagnosis**
 AI automatically diagnoses by taking a hand-drawn spiral

**2** **Quantification of tremor**
Changes in symptoms can be confirmed as numbers before and after the treatment

## Developer's comment

A number of patients visit neurology outpatient clinics with a chief complaint of "tremor". The most common type of tremor is essential tremor, which affects 2.5 to 10% of the population in Japan. Patients with essential tremor present shaking in the hands when they are holding chopsticks or trying to write.

Until now, doctors have been evaluating the degree of patient's tremor by several subjective classifications, such as "strong", "moderate", "weak", and "none". Therefore, we wanted to develop a tool to evaluate the degree using numbers by objective method.
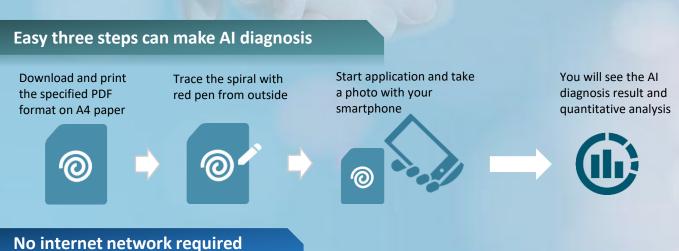
We developed a software to check the degree of patient's tremor by numbers from tracing a given spiral. The patients traced a printed reference spiral. The length of this spiral was compared with the reference spiral length (% of spiral length) and the total deviation area between these spirals was calculated. Physicians and patients can see the degree of tremor before and after treatment as a change in numbers.

We recommend this application to physicians who treat patients with tremor.

When the two-dimensional image was digitized, we discovered that this method could be applied to diagnosis. In cooperation with researchers from the Faculty of Agriculture, a diagnostic system using artificial intelligence was created. The diagnosis accuracy rate is about 70-80% at the moment, however we believe that AI diagnosis will be one of the assistant tools in clinical practice.

With the full cooperation of Densan Co., Ltd., we have developed a system that can be installed on smartphones and is more accessible to the general public. All you need is a smartphone, a printer, and a red pen. Please download this APP and give it a try.

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## Easy three steps can make AI diagnosis

Download and print the specified PDF format on A4 paper

Trace the spiral with red pen from outside

Start application and take a photo with your smartphone

You will see the AI diagnosis result and quantitative analysis

## No internet network required

This application is an edge AI type using TensorFlow Lite (no communication with server). It can be used without stress even in hospitals, places with poor network conditions, or in airplane mode.