AI Breakthrough for Depression: Japan Approves New Brain Scan Device

鬱病などの精神疾患を、人工知能（AI）で脳の画像から客観的に見分ける医療機器が国の薬事承認を取得。効果的な治療法を見分ける技術も開発したそうです。数年のうちにその実用化、そして公的医療保険の適用も目指しているとのこと。働き盛りの患者も多いといわれますが、あなたの周囲では、メンタルヘルスの問題はどのように捉えられていますか？また、あなたはAIによってメンタルヘルスが評価されることについて、どのように考えますか？

1. Article

Read the following article aloud.

A new medical device that uses artificial intelligence (AI) to objectively detect mental illnesses such as depression through brain imaging has received **regulatory** approval in Japan. The announcement was made on June 30 by a research team that includes the Advanced Telecommunications Research Institute International (ATR). The device is expected to support more accurate **diagnoses** and lead to more effective treatment.

To develop the system, the team collected resting-state brain activity data from around 700 individuals, including both patients diagnosed with depression and healthy participants. Based on this data, they trained an AI model to identify distinctive patterns of brain activity associated with depression. The system is reportedly capable of detecting depression with approximately 70% accuracy.

Continued on next page.

Source: AI Breakthrough for Depression: Japan Approves New Brain Scan Device
JAPAN Forward

1. Article

From Imaging to Diagnosis

For diagnosis, the device uses magnetic resonance imaging (MRI), a technology widely available in Japan. It records brain activity over a period of about ten minutes. AI then analyzes the imaging data, and doctors use the results to support their clinical assessments.

Until now, depression has primarily been diagnosed through patient interviews, with doctors relying on self-reported symptoms. However, many patients see non-specialist physicians, which can lead to inaccurate or delayed diagnoses.

The newly developed device is being introduced under a two-step approval system. Once safety and other basic **criteria** are met, the device can be used in clinical settings while further evidence of its effectiveness is gathered. This recent approval represents the first step. The team plans to apply for the second-stage approval as early as spring 2026, with the goal of obtaining coverage under Japan's public health insurance system by fiscal year 2027.

Expanding the Scope of AI-Based Psychiatry

In addition to diagnosing depression, the research team has developed technology to **differentiate** between subtypes of the disorder using brain imaging. These subtypes often require different forms of treatment, making accurate classification essential. The team aims to bring this technology into practical use within the next three years.

"We're seeing many cases among people in their prime working years," said ATR's lead researcher, Yuki Sakai. "This technology could also have a positive impact on the healthcare economy."

The team is also working to expand the scope of their research beyond depression. They are developing AI tools to quantify and detect other mental health conditions, such as schizophrenia and autism spectrum disorder. Ultimately, they hope to create a system capable of identifying multiple **psychiatric** disorders from a single brain scan.

Source: AI Breakthrough for Depression: Japan Approves New Brain Scan Device
JAPAN Forward

2. Key phrases and vocabulary

First repeat after your tutor and then read aloud by yourself.

1. regulatory 規制上の、規制当局による、監督的な

The new drug has passed all **regulatory** tests and is ready for the market.

2. diagnoses 診断 ※**diagnosis** の複数形

Early **diagnoses** can improve the chances of recovery.

3. criteria 基準、評価項目 ※**criterion** の複数形

We used several **criteria** to choose the best candidate.

4. differentiate 区別する、差別化する

Can you **differentiate** between identical twins?

5. psychiatric 精神医学の、精神的な、精神科の

He received **psychiatric** treatment after the accident.

3. Questions

Read the questions aloud and answer them.

1. **How did the researchers train the AI model to recognize signs of depression?**
2. **What technology does the device use to collect brain activity data?**
3. **What is the research team's long-term goal for this technology?**
4. **Would you feel comfortable having your mental health evaluated by an AI-based system? Why or why not?**
5. **In your country or culture, how are mental health issues usually viewed or treated?**

4. 鬱病をAIで判別する医療機器が薬事承認取得 医師の診断サポート、ATRなど開発

鬱病などの精神疾患を、人工知能（AI）で脳の画像から客観的に見分ける医療機器が国の薬事承認を取得し、国際電気通信基礎技術研究所（ATR）などの研究チームが6月30日、発表した。正確な診断や最適な治療への貢献が期待される。

研究チームは開発に当たり、鬱病患者と健常者の計約700人について安静状態での脳活動を撮影。このデータを用い、患者特有の脳活動にみられる傾向を客観的に数値化するAIを実現した。約70%の精度で鬱病と判別できるという。

診断では、日本で広く普及している磁気共鳴画像装置（MRI）を使用。MRIで10分間ほど脳活動を撮影し、その画像をAIが解析した結果を医師が診断に用いる。

従来、鬱病は主に患者本人の訴えを医師が聞き取って診断するが、専門医以外を受診する事例も多く、正しい診断に至らない課題があった。

開発した医療機器は、安全性などを満たせば臨床での利用を認め、さらに十分な効果を確認する2段階承認の制度を活用。今回は第1段階の承認で、来年春にも第2段階の承認取得への申請を行い、令和9年に公的医療保険の適用を目指す。

一方、鬱病には効果的な治療法が異なるタイプがあり、これを脳画像から見分ける技術も開発。3年後の実用化を視野に入れる。ATRの酒井雄希主幹研究員は「働き盛りの患者も多い。医療経済という面でも貢献できる」と話した。

鬱病に限らず、統合失調症や自閉スペクトラム症などを数値化する技術も開発中で、一度の撮影で複数の精神疾患や障害を解析できるAIの構築も目指すとしている。

出典：鬱病をAIで判別する医療機器が薬事承認取得　医師の診断サポート、ATRなど開発
The Sankei Shimbun