Fibromyalgia is a disease that eludes diagnosis: Can artificial intelligence change that?

There's no tissue damage that explains the pain fibromyalgia patients experience all over their body, and contemporary medicine struggles to treat and even accept an illness where pain seems to be rooted in the mind or brain, rather than a bodily injury.

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Artificial intelligence, though, has the potential to make a diagnosis in minutes. [In 2017], researchers used machine learning to distinguish the brain scans of those with fibromyalgia from those without—with 93% accuracy. The implications are immense: Decoding the brain signature for fibromyalgia could hold the key to understanding the disease and which treatments work for which patients. But it's also a definitive, objective sign that fibromyalgia really does exist.

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The researchers who successfully used machine learning to identify fibromyalgia patients started by using fMRI machines to capture images of the brain signals of 37 fibromyalgia patients and 35 healthy people used as a control group. All the participants had pressure applied to their right thumbnail to create "severe but tolerable pain."

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Those with fibromyalgia experienced more pain compared to the healthy controls, according to a neurological signature of physical pain, as well as different activity in the insula area of the brain, related to sensory integration, and the medial prefrontal cortex.

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As such, neuroimaging combined with artificial intelligence was able to create an objective snapshot of what, to date, has been characterized as a subjective sensation.

Read full, original post: AI can spot the pain from a disease some doctors still think is fake