

An app to diagnose multiple sclerosis before its symptoms appear

LOCATION: Jaén

DURATION: 1'49"

SUMMARY: A researcher from the University of Jaén is part of the multidisciplinary team that has created the Health Engineering spin-off company to commercialize an app that allows the early detection of multiple sclerosis and to know in advance the symptoms that patients will experience. This is possible thanks to the analysis of the fractal dimension of the data show in MRIs, which enables health professionals to diagnose the disease before the apparition of the first lesions or to determine how the disease will evolve over the next two years.

VTR

The coloured spots of this MRI are the lesions of a multiple sclerosis patient. This chronic disease affects the central nervous system. It causes different types of disability and has no cure. To date, an MRI is the only way to confirm its diagnosis. This researcher from the University of Jaén has discovered that the disease can be diagnosed earlier, by measuring the fractal dimension.

Francisco J. Esteban
Cellular Biology professor UJA

"The fractal dimension is what allows us to determine the complexity or irregularity of an object."

When applied to an MRI, it allows the early diagnosis before lesions appear.

Francisco J. Esteban
Cellular Biology professor UJA

"Despite the brain, the brain structure, is apparently normal according to the MRI, after applying the fractal dimension we determine that the brain structure has more similarities with the structure of someone who has developed the disease than with the structure of someone who is healthy."

This will allow them to...

Ángel Martínez
Neuropsychologist

"If we have a tool able to make a very early diagnosis, before the symptoms appear, or the signs, we will have much more possibilities to apply a treatment or intervene."

María José Novalbos
AJDEM psychologist

"It means that the more you prevent lesions and sequels, obviously, the less serious the disability will be."

There are around 50,000 people affected by multiple sclerosis in Spain. For patients, being able to predict the degree of disability that the disease will cause them, is a way to reduce uncertainty.

Lupe Amores
Multiple sclerosis patient

"It is a relief that it can be detected earlier, this way there will be fewer disabilities."

José Novoa
Multiple sclerosis patient

"I would have liked to know it. Because, they told me that I was going to be on a wheelchair in two years. I was diagnosed at 18 and now I am 35."

The platform of the spin-off company Health Engineering, will also be useful for pharmaceutical research, speeding up processes in the search for new treatments that improve the quality of life of these patients.

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