Prevention of the development of age-related macular degeneration (AMD)

Case Study/Ophthalmology

AMD is a degenerative disease that affects the macula of the eye. It causes an impairment of central vision, essential for day-to-day activities such as identifying people, reading or driving.

It affects more than 800,000 people in Spain and is the most frequent cause of severe vision loss in the western world.

Analyzing clinical data and lifestyle habits (smoking, diet, etc.) is key to assessing the risk of suffering from it. Knowing this risk allows us to establish guidelines to try to reduce it, since habits can change the course of the disease by increasing or reducing the age of onset.

Data used

Demographic data (age, sex, etc.) together with clinical data (family history and medical history) and daily habits (smoking, consumption of fish, vegetables, etc.) are integrated to assess the risk of developing AMD in the medium-term future.

Models employed

At NNBi we apply different machine learning algorithms that learn from large volumes of data collected by clinicians. These models learn and extract information that is necessary to predict what will happen to future patients.

Results obtained

The model calculates, in real time, the patient's probability of developing AMD in the next few years (medium term), together with a series of recommendations given to the patient depending on the risk of developing the disease.

In addition, the model is able to calculate what would happen in the longer term future if the user does not change his habits, concluding the probability of developing the disease at a later age and, if necessary, displaying an alarm.

This type of tool allows a first screening to be carried out so that the patient can go to a specialist if necessary.

Using digital tools that integrate predictive models accelerates diagnostic times and improves healthcare.

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