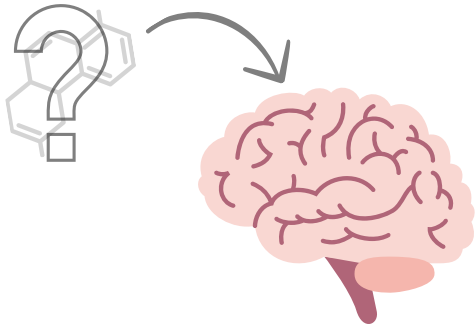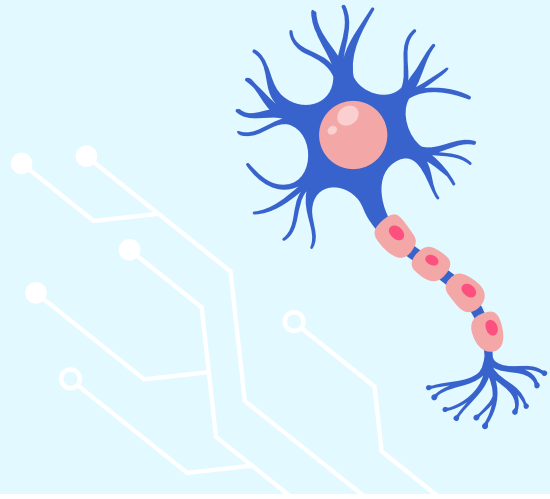# How does an **AI language model** give insight into **brain disease?**

The relationship between changes in brain tissue and a patient's symptoms is often very complex, resulting in a substantial number of misdiagnoses.

Up to 30% is misdiagnosed.

In addition, the molecular changes behind many brain diseases are still unclear. This makes it difficult to develop effective treatments.

Insights provided by a new AI language model have the potential to change that.

The Netherlands Brain Bank

The Netherlands Brain Bank consists of the brain tissue, medical history and symptoms of more than 5000 donors. This information is difficult to make use of, seeing as it is saved in a text format.

This is where an AI language model can help.

Netherlands Brain Bank
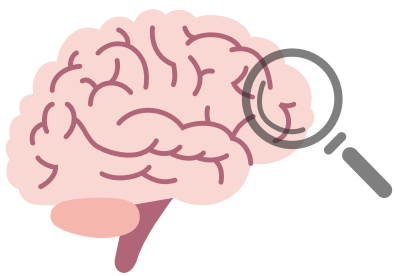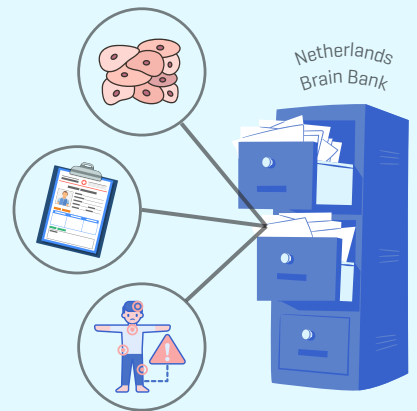
First, the 90 most common symptoms were identified from the medical files. Next, 20.000 sentences were manually labeled in order to train the AI model. The result: an AI that can make reasonably accurate diagnoses based on the information in the Brain Bank.

What makes diagnosis difficult is the fact that some patients exhibit symptoms of one disease, while they are actually suffering from a different one. By continuing to improve the AI model, the diagnosis of brain disease will hopefully become more and more accurate.

What does the future look like?

The end goal is to make a kind of molecular atlas. This will detail which molecule and cell changes lead to symptoms such as forgetfulness and depression.
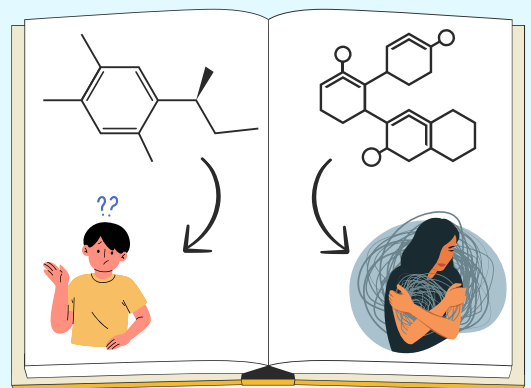
Biomarkers can then be identified from this molecular atlas, potentially allowing for more accurate diagnoses during life.

This could also open doors to the development of new therapies.

Click here for more information and the full press release

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