

Geneticists, clinicians and environmental scientists of the world work together to learn more about the causes of Parkinson's disease. The goal is to finally be able to answer the question: "Why?". Amongst the persons affected directly or indirectly by the disease are those who wonder what have they done to develop this disease. In reality, we often say that Parkinson is an idiopathic disease, which means the cause is unknown. Specialists often say that each person living with Parkinson's disease is different. There is no « one » Parkinson's disease, but « many » Parkinson's disease, each with various origins and affecting the same cerebral region.

Scientists agree however that a combination of genetic and environmental factors may trigger the onset of the disease. Non-genetic risk factors associated with the disease and that are most often mentioned are exposition to pesticides, dietary factors, cranial trauma or even atmospheric pollution. In the case of pesticides, there is an increase in the scientific studies made on animal models which suggests that certain classes of pesticides may increase the risk to develop Parkinson's disease.

It is interesting to note that certain individuals exposed to these more dangerous classes of pesticides are more prone to develop the disease compared to individuals that are also exposed to these same products. It's the genetic variability between each person that can explain those differences. It is for this reason that researchers such as Beat Ritz (UCLA School of Public Health in Los Angeles), who did a lecture at the World Congress 2016, studies the combined effects of environmental exposition and genetic susceptibility. To make an analogy, it is also for this reason that some people smoke cigarettes all of their lives without developing cancer while others will develop one.

Other researchers explore the role of food in the development of the disease. Current researches relate to the protective role of consumption of certain fatty acids, vitamin D or even caffeine. Numerous studies also assessed the role of cranial trauma in Parkinson's disease, because they can cause inflammation, oxidative stress and even affect the state of the blood-brain barrier.

All of these situations can contribute to the neuronal degeneration. Atmospheric pollution peaks the interest of researchers for its potential role in Parkinson's disease. Up until recently, most studies done on atmospheric pollution were focuses on the risk on pulmonary or cardiac diseases. However, it has been shown that atmospheric pollution can cause neuro-inflammation and oxidative stress in the brain.

As Dr Beat Ritz mentioned, there is an important nuance to remember. Exposition of one individual to environmental factors that can increase the risk of developing Parkinson's disease does not mean that he will develop it, as it will mostly depend of its genetic susceptibility. Finally, it is as important to find ways to cure the disease as it is to find ways to find the cause, because an understanding of all the risk factors associated with the disease will allow us to try to prevent it from happening.

Sources :

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