

New virtual platform measures the level of addiction to tobacco

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In Mexico, 21.7 percent of the population smokes, which is associated with 95 percent of lung cancer cases and the development of 29 more different conditions.

A team of researchers from the Mexican Institute of Respiratory Diseases (INER) developed a virtual platform that measures the level of

addiction of smokers, while suggesting some recommendations and providing necessary support to help them quit.

This [citizen science project](#) titled "Are you [smoking](#) away?" is part of the venture "Science that Breathes" (www.cienciaqueserespira.org) and is in charge of Maria Ines Vargas Rojas, Head of Research at the Laboratory of Inflammation and Immunoregulation at INER.

"We make available a tool that asks a series of questions about the perceptions that people have about smoking, whether the individual is a smoker or not.

If the subjects identify themselves as smokers, they are asked to fill another questionnaire aimed at identifying the degree of [nicotine addiction](#)," says Eryka Urdapilleta Herrera, head of the Program to Quit Smoking at the Research Department of INER, also part of this project.

Inés Vargas adds that the platform is not only informative but also shows the individual their level of addiction after sending the questionnaire responses. It also estimates the degree of anxiety and depression that may lead to smoking and provides recommendations to control the problem.

"At the same time, it allows us to get in touch with participants and generate more lines of research

"The project is particularly important in the Mexican context, where smoking causes approximately 60,000 deaths per year, is the main cause of 90 percent of cases of bronchitis and more than 50 percent of cardiovascular disease.

"Smoking is a syndrome that causes inflammation throughout the body, not only in the breathing airways. It slowly and progressively produces

multisystem damage over prolonged periods, and favors the onset of various diseases, including hypertension, myocardial infarction, stroke, chronic [obstructive pulmonary disease](#) (COPD) and various types of cancer, especially in lungs," said Vargas Rojas.

She explains that after the first inhalation of cigarette smoke, nicotine provokes a stimulus capable of generating these substance receptors, which are formed not only in the brain but throughout the body.

Thus, these cells will always be waiting for the addictive substance.

"For this reason, the subject no longer has physical control of its addiction, making it hard to [quit smoking](#). Also, a difficult emotional component is added, which is hard to break," says Urdapilleta Herrera adding that when nicotine enters the body it activates regions of the brain that regulates feelings of pleasure, that in the smoker act as a reward system to release certain neurotransmitters.

To make matters worse, cigarettes sold today can release more nicotine and include additives and chemicals that encourage addiction.

However, currently there are different treatments to combat nicotine addiction, both pharmacological and psychological.

"The INER has a clinic to stop smoking, where [cognitive behavioral therapy](#) remains as the most useful mechanism to support patients," says Vargas Rojas.

Vargas Rojas adds "We have a line of research associated with the genetic factor. Some subjects are expressing protective or risk genes, not only to develop lung disease, but also for addiction to nicotine, which explains why there are patients who have more difficulty with control."

"However, we have a lot of methods and therapeutic support tools available at all times. It is possible to quit smoking and remain abstinent, which brings many health benefits; for example, lowering the risk of suffering a stroke, heart disease and various cancers," says Urdapilleta Herrera.

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