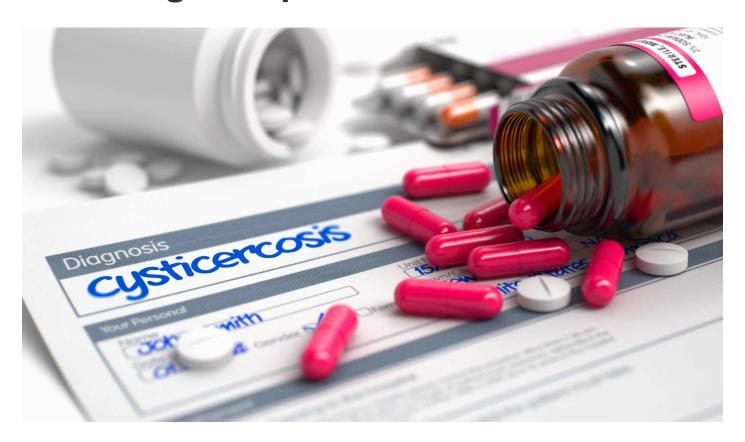
Mexican woman wins award for creating device against parasitic disease



Ximena García Ortega, a student at <u>Tec de Monterrey's Puebla campus</u>, has won the 2021 <u>Social Skin</u> award due to a device capable of tracking and promptly diagnosing the parasite that causes cysticercosis, a parasitic disease.

Ximena was part of the **LEKA** project, which is a **biodegradable and non-invasive** test to detect the *taenia solium* parasite in humans through a patient's stool sample.

"It stems from the need to know where people get infected, how this parasite is transmitted, and for the test to be available to the general population," Ximena explains.

The device works like a pregnancy test. You place the fecal sample on a **reagent strip**, wait a few minutes, and it'll show if it's positive or negative through a **change in the color of the paper.**

This will be possible via a **coproantigen study** that will react to the more than two hundred thousand eggs laid in the feces if someone is positive, **qualitatively** indicating the presence of the parasite.



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Inter-American Award winner

Social Skin is an Inter-American project implemented by Colombian companies and focusing on 6 Central American countries, as well as Colombia and Mexico.

"I decided to take part because I have Colombian friends who won the first **Social Skin** award. **They encouraged me because they saw that the project had potential**."

Ximena adds that winning the contest motivated her, but **the mentoring and support** that the event offered was what caught her attention.

"Receiving advice and mentoring from experts and the money to carry out the project make this tangible, real, and applicable."



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Ximena has entered her project in other contests, such as the **Social Innovation Competition**, a global event where she was one of the **5 finalists**.

"Social Skin made the project grow and taught me a lot of things in a short space of time. I saw how you can change the world when you do things from the heart."

Cysticercosis: a silent enemy

Cysticercosis is a silent disease that attacks when we eat food contaminated with parasite eggs. It manifests itself after several months or years in muscles and in the brain, the latter being known as neurocysticercosis, which is lethal in most cases.

The World Health Organization (WHO) has said that cysticercosis is one of the world's most neglected diseases.

The WHO's goal to eradicate the disease in 2020 was unsuccessful, as there were no prevention or early detection methods available.

"It's detected via expensive methods such as CT scans or X-rays. By the time patients show symptoms, nothing can be done for them."

Ximena adds that studies have been conducted in the past with inadequate results, which is why she has taken on the task of creating a solution to eradicate the disease.

"The most recent studies are from **2008.** They don't tell us how to establish **where the parasite** lives in the body, the number of cases, or how to detect it in its early stages."

According to the **ninth-semester Industrial Design** student, an **updated and accurate epidemiological study** will shed light on the subject.

"Our goal is for the tests to reach communities through government public health brigades. They would study people and carry out tests and surveys on infected people, or people at risk of developing the disease."



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A project at the implementation phase

The project is in an **experimental phase**. Support for LEKA comes from **Regina Basulto**, a **fourth-semester Biotechnology student at the Puebla campus**.

The first pilot tests will be carried out in 2022 in Cuautla, Morelos.

"We'll be reinforcing studies to update data. Morelos is the state with the highest rate of cysticercosis. In 2 years, we'll reach states in similar conditions, such as Colima, Querétaro, Chihuahua, and Jalisco."

The strategy includes reaching countries that are affected by cysticercosis in Latin America, such as Ecuador, Peru, and Bolivia.

Ximena says that because the device works like a pregnancy test, it would detect other parasites or diseases through feces.

"I couldn't believe that there weren't any methods to provide a solution to this. **LEKA**, which means **Leticia** in Portuguese, is dedicated to her." said **Ximena García.**

The reason behind the fight

The death of Leticia Pérez, the mother of one of her friends, from neurocysticercosis a few months ago prompted Ximena to start researching this disease.

"I couldn't believe that there weren't any methods to provide a solution to this. **LEKA**, which means **Leticia** in Portuguese, is dedicated to her."

That's why the project has backing from Hilda Ortiz, Director of Social Entrepreneurship at Puebla campus, and Dr. Yocanxóchitl Perfecto, a Biotechnology engineer with a specialty in medical sciences and biotechnology at Guadalajara campus.

https://www.youtube.com/watch?v=gWmNtMdyH8c&feature=emb_imp_woyt

A perfect profile

Ximena has received a **comprehensive education at the Tec**, by taking part in groups as the representative of **Urban Dance** and the **Ambassadors** program.

"Taking part in cultural activities, my degree course, entrepreneurship, and Ambassadors are 4 things that fuel my passion for doing things, that's what the Tec gives its students. Studying here has been one of the best decisions of my life," she concluded.

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