

# Mexican woman wins award for creating device against parasitic disease



Ximena García Ortega, a student at [Tec de Monterrey's Puebla campus](#), has won the 2021 [Social Skin](#) 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 **Cuatla, 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](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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