

Three key projects at the TecSalud and UT Austin research center



Representatives from both universities came together to present progress reports one year after the Origen Health Research Center (OHRC) was inaugurated.

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Gemini

Kevin Chaires

The **Origen Health Research Center (OHRC)**, a collaboration between **Tecnológico de Monterrey** and the **University of Texas at Austin**, is celebrating its first anniversary by promoting **three projects that do research on diseases** affecting **the Latino population**.

At its first annual meeting, the **research center** presented **findings from studies done** on **cardiometabolic health and the impact of stress on the health and wellbeing of adolescents**, which are key issues for this population.

These projects seek to address a key need: the **Latino population has been historically neglected in research**, which limits the development of solutions

tailored to their health conditions.

The **OHRC** combines **scientific research**, **data analysis**, and **artificial intelligence** to improve **disease prevention** and **treatment in Latin America**.

*“Science **knows no limits; it knows no boundaries**. We’re working with the OHRC to **improve patient diagnosis and assessment**; we want to set an example of collaboration”,* said TecSalud rector Guillermo Torre.

For his part, Alexandro Martagón, co-director of the center, added that **collaboration between institutions** helps drive **research with greater impact**.



Members of Tec de Monterrey, TecSalud, and the University of Texas at Austin shared updates one year after the founding of the Origen Health Research Center. (Photo: Kevin Chaires)

Three projects to understand diseases in the Latino population

As part of its first year of operation, the **OHRC** is spearheading **three** ongoing **catalyst projects that** are expected to yield **their first results between this year and next.**

Learn more about these projects and what they aim to achieve:

[An algorithm to understand body fat and improve disease diagnosis](#)

[What life histories reveal about health in Mexico](#)

[An app to prevent obesity and improve healthy habits in teenagers](#)



Researchers at the Origen Health Research Center (OHRC), a collaboration between Tec de Monterrey and UT Austin, are leading health projects focused on obesity, genetics, and wellbeing. (Photo: Courtesy of TecSalud)

An algorithm to understand body fat and improve disease diagnosis

The first project's goal is to **understand how body fat is distributed among Mexicans**, which is a key factor in **cardiovascular conditions** and **diseases** like **diabetes**.

For this purpose, the team is **developing an AI-powered algorithm** that **estimates body composition** using accessible methods such as **bioimpedance analysis**, rather than more expensive, complex tests.

These insights were shared by **Vagheesh M. Narasimhan**, an assistant professor of Integrative Biology, Statistics, and Data Science and the interdisciplinary Life Sciences graduate programs at the University of Texas at Austin.

The model was trained using international data from the [UK Biobank](#) (information on high-resolution imaging studies of thousands of individuals) and is currently being validated in Mexico.

Later, it is also expected to be used in [Tecnológico de Monterrey's oriGen project](#), which collects data on 100,000 Mexicans

Using this combination of data, the project's goal is to **scale up body composition analysis across large populations** and generate more detailed information on how body fat is distributed and how this affects health.

The OHRC is using artificial intelligence and biomedical data to research how body fat is distributed and how it impacts health. (Photo: Canva)



In addition to its clinical applications, the study also seeks to understand the genetic basis for these differences in body fat distribution, which could **pave the way for new, more personalized approaches to prevention and treatment.**

Researchers:

Co-PI: Vagheesh M. Narasimhan, PhD

Co-PI: Luis Adrian Soto Mota, MD, PhD

What life histories reveal about health in Mexico

The second project uses an approach combining life history and biological data to examine the relationship between **psychological stress** and the development of **metabolic disorders**, such as **diabetes and cardiovascular disease.**

To this end, the researchers drew up a **life history survey** that allows them to reconstruct people's key life experiences (such as social conditions, adverse events, or changes in their environment) and understand the impact these factors have on their health.

*“We are interested in understanding how life experiences **shape aging and health processes**, especially in populations like Mexico”,* explains researcher Mateo P. Farina, an assistant professor of Human Development and Family Sciences at the University of Texas at Austin.

The OHRC is using surveys, biomarkers, and life experiences to study the relationship between stress and metabolic health. (Photo: Canva)



This tool is supplemented by a **biomarker profile** (including **glucose and cholesterol levels**) which will allow for a more accurate analysis of participants' metabolic status and its potential link to stress factors.

The project is currently in the data-collection phase, which involves conducting interviews with residents in Mexico that will help create a detailed database on health, aging, and living conditions.

Researchers:

Co-PI: Mateo P. Farina, PhD

Co-PI: Elizabeth Muñoz, PhD

Co-PI: Alexandro Martagón, MD, PhD

An app to prevent obesity and improve healthy habits in teenagers

The third project seeks to **prevent the early onset of obesity** with a **digital app** designed for **teenagers** and **their families**.

Unlike **other approaches that focus solely on the patient**, this initiative **involves** the entire **family** (especially parents and children) to **promote changes in diet, physical activity, and wellbeing**.

One of the OHRC's research initiatives seeks to improve eating habits through digital tools designed for teenagers and their families. (Photo: Canva)



The team is currently working on **adapting the app and drawing up questionnaires to learn about participants' lifestyle habits**. It is expected to be implemented in the coming months together with an educational program.

*“We launched this project because we know that obesity is a significant topic to be studied in the population given the number of people who are overweight”, said **Gabriela Livas Stein**, a professor and chair of the Department of Human Development and Family Sciences at the University of Texas at Austin.*

Researchers:

Co-PI: Leah Whigham, PhD

Co-PI: Gaby Livas Stein, PhD

Co-PI: Julieta Rodríguez, MD, PhD

OHRC: Collaboration between Tec and UT Austin on Latino health

The [Origen Health Research Center \(OHRC\)](#) is a **partnership** between **Tecnológico de Monterrey** and **the University of Texas at Austin** that promotes research aimed at improving the health of the Latino population.

As part of this partnership, the Tec has **a workspace at the University of Texas at Austin**, where researchers from both institutions collaborate directly, share data, and develop joint projects.

The center brings together fields such as **genetics, stress, biomarkers, obesity, artificial intelligence, and human development** to better understand these diseases and develop prevention and intervention strategies.

*“UT Austin **opened its doors to us** to collaborate and share knowledge, work, and experience”, Martagón emphasized.*

Facilities at the OriGen Health Research Center, a collaboration between Tecnológico de Monterrey and the University of Texas at Austin. (Photo: Courtesy of TecSalud)



You can learn more about the [**Origen Health Research Center \(OHRC\)**](#) at the event celebrating its first anniversary in this video:



The banner features the OriGen logo on the left, which consists of a stylized knot in blue and orange. To its right, the text "Annual Meeting" is in a small white box, followed by "Health Research Center" in large bold letters. Below this is a "Translated Audio" button. The bottom section is split: the left side is dark blue with the "Tecnológico de Monterrey" logo, and the right side is orange with the "TEXAS The University of Texas at Austin" logo and an "Audio Traducción" button.

OriGen

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