

The Mexican whose biomechanical analyses helped Tour de France winner



Photos: AFP and GebioMized.

There was a **Mexican touch** to the **historic victory** of **Colombian cyclist Egan Bernal**, the first Latin American to win the **Tour de France**.

Mexican engineer Benito Flores helped with **biomechanical care** for **Bernal**, from the **Ineos team**, as well as for **Geraint Thomas**, who came second in this competition.

Flores is a graduate of **bachelor's and master's degrees courses in mechanical engineering from Tec de Monterrey** and is currently also studying the **doctorate in Biomedical Sciences** at the Tec. He collaborated with the **German company [GebioMized](#)**, which specializes in the **biomechanics of cyclists**.

Egan Bernal con toque mexicano width="4000" loading="lazy">

WHAT'S BIOMECHANICS FOR?

Interviewed in his office at the **Zambrano Hellion Hospital**, of **[TecSalud](#)** in **Monterrey**, Flores tells **CONECTA** how his support helped Bernal and the Ineos team.

“We measure 3 forces: aerodynamics, gravity, and friction, so that athletes can go further while using less energy.”

In other words, the **work of Flores and other experts consists of checking and adjusting the posture of cyclist and bicycle** so that it's as organic and favorable as possible.

“We measure force, movement, pedaling, posture, and suggest changes based on that.

“(For instance), how much you have to raise the seat so that you can go faster, how much you have to lower the handlebars. We suggest the right helmet, what type of bicycle, the size of the bicycle, the wheels, the rims.”

The specialists analyze what the best individual posture is for each cyclist with **high-definition video and pressure sensors** on all points of contact between cyclist and the bike.

One key factor is determining how to distribute the cyclist's weight on the seat and left and right feet to increase performance.

“From there, we look at whether the type of seat is correct, whether the type of shoe is correct. We want them to be comfortable.

The work of Flores and other experts consists of checking and adjusting the posture of cyclist and bicycle.

Dr. Benito Flores, especialista en biomecánica y parte del equipo que asesoró a Egan Bernal.
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He mentioned that there are only 5 laboratories in the world that can perform all these evaluations, and **one of these is at the Zambrano Hellion Hospital.**

ADMIRATION FOR EGAN BERNAL

Egan Bernal is not only the **first Latin American to win the Tour de France. At the age of 22, he's also the youngest to have won it in more than 100 years.**

He's considered a **prodigious athlete** whose best is yet to come.

“For me, Egan is a very smart, educated person. He lets you advise him. He trusts you and has big goals. He wants to be the best at what he does.”

Flores mentioned that speaking Spanish with the Colombian was considered a plus for the team.

*“Although he speaks 4 languages, **speaking Spanish was an advantage**, because he felt more comfortable. That also added value.”*

“We're part of the success of (Egan) winning. At the end of the day, it was a variable we helped him with and that's part of the success,” said the 37-year-old engineer.

He also added that he'd had the opportunity to advise triathletes such as two-time Iron Man champion **Patrick Lange**.

Egan Bernal en pruebas de biomecánica. Imagen: cortesía Benito Flores width="4000" loading="lazy">

MEXICAN PRIDE

Flores, who's from **Sinaloa**, feels proud to also be the **only Latin American** to work on the **biomechanical team advising Bernal** and the Ineos squad.

"Every time I go there (Europe), they say: 'How strange it is to see a Mexican here,'" he says.

Now, besides collaborating with **GebioMized and constantly traveling to Europe**, where he's just been invited to the **Vuelta a España**, he spreads the word about this science to other interested sportspeople from his office at the **TecSalud hospital**.

In January, he was invited by the Tec to bring his services to the Zambrano Hospital, creating the Sports Science Center to offer the same services he provides in Europe.

In sports, he says that these services can be applied to people who run, who do triathlons, mountain climbers, but also to people with health problems.

"We're now applying this to people who have problems walking, with hip imbalances, with cerebral palsy, people with Parkinson's, with Alzheimer's," he explains.

Dr. Benito Flores, especialista en biomecánica y parte del equipo que asesoró a Egan Bernal. width="900" loading="lazy">

An alumnus of PrepaTec Culiacán and the Monterrey campus of Tec de Monterrey, he says he also feels proud of his training.

"The Tec taught me to always try to be an integrated and committed person. It also taught me to be competitive at what I do internationally," he concludes.

With a route 3,365 kilometers long, the Tour de France is considered the most important multiple stage cycling race in the world.

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