

Better. Stronger. Faster. Scientists Rebuild Cancer-Killing Cells [PODCAST]

Pioneering research — including TIL therapy — can offer more and better cancer treatment options, along with hope.

August 19, 2024 By University of Colorado Cancer Center and Chris Casey

When [Eduardo Davila, PhD](#), talks about his work to leverage a patient's immune system to fight cancer, it reminds him of a TV show he watched as a child: "The Six Million Dollar Man." The show's main character, after a devastating accident, is rebuilt into a better and stronger version of himself.

"What I remember from that show is he jumped farther and ran faster," said Davila, a professor in the [Division of Medical Oncology](#) of the [Department of Medicine](#) at the [University of Colorado School of Medicine](#).

On a cellular level, Davila's team has devised a novel technique to enhance all forms of cellular immunology — a way to rejuvenate T-cells and improve their ability to home in on and kill cancer cells. Davila explains his team's advances in cancer immunotherapies, including tumor-infiltrating lymphocyte (TIL) therapy, on this episode of the [Health Science Radio](#) podcast.

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"What my research team and I have been working on over the last decade is to identify methods through which we can rejuvenate (the T-cells), make them strong again, make them young again, make them better than they were before," Davila said of [his lab](#). "We've accomplished this through genetic engineering in which we've developed a synthetic gene that we incorporate into the immune cell, which makes it live longer, kill better and find the cancer easier."

TIL therapy has become one of the more effective therapies for some cancers, including head and neck and lung cancers, where few other options exist, Davila said. Now his team is seeing success treating some sarcomas with the therapy.

His team's latest project — creating a [MyD88 platform for enhancing cellular cancer immunology](#) — is one of nine research projects by CU School of Medicine faculty members to be awarded significant funding through the [Anschutz Acceleration Initiative](#). The AAI aims to support

advancements in health care that can make direct patient impact within the next three to five years.

“I think the future really relies on understanding how the immune system works and understanding what we can combine with immunotherapy in certain patients for certain cancers,” Davila said. “So, combination immunotherapy – whether it’s immuno-chemotherapy, immuno-radiology, etc. – for different cancers, I think, is the way to go.”

For a transcript of the podcast discussion, visit the [original article](#), which was originally published August 6, 2024, by the University of Colorado Cancer Center. It is republished with permission.

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