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PHOTOS BY LAURA MORTON

Dr. Eric Verdin, president and CEO of the Buck Institute for Research on Aging, poses at their Novato campus. The nonprofit researches ways to promote healthy aging.

Scientist leads quest for healthy aging research at Novato's Buck Institute

By Deb Wandell

Dr. Eric Verdin would like to make one thing clear: there's no fountain of youth.

"You're not going to keep people from growing old," he said.

As president and CEO of the

Buck Institute for Research on Aging since 2016, Verdin's goal is to help promote healthy aging. He emphasizes a realistic approach to longevity.

Verdin, 67, never expected to end up at ground zero for aging research. He was a scientist studying the deadly HIV virus. It

was during his work at UCSF and the Gladstone Institute that he made a startling discovery.

"The family of proteins that we identified as regulating HIV, also were identified by another group as playing a key role in aging," Verdin recalls.

That pivotal moment set him



Famed architect I.M. Pei designed the Buck Institute for Research on Aging's Novato campus, which was completed in 1999.

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Dr. Eric Verdin, president and CEO of the Buck Institute for Research on Aging in Novato

on a path to the Buck Institute in Novato, the world's first independent biomedical institution pioneering this new area of research.

"I realized that the aging field was undergoing an amazing transition," he said. "We could use all the tools of modern biology to study aging in new and insightful ways."

The U.S. population is older than ever. It's also increasingly burdened by chronic diseases such as heart failure, osteoporosis, cancer, diabetes, Parkinson's and Alzheimer's.

"If you reach 65, about 70 percent of people have at least one of these conditions and by 70, about 60 to 70 percent have two of these conditions," he said.

Verdin and a staff of 300 are studying the molecular and biological drivers of aging, devising new therapies for age-related disease, dispelling age-related myths and empowering people to live more vibrant lives.

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Perched on the oak-studded slopes of Mount Burdell, in a striking I.M. Pei-designed building, the institute marks its 25th anniversary in September. We spoke with Verdin about the institute's groundbreaking discoveries, its vision for the future of aging research and how it plans to reshape our understanding and approach to aging over the next quarter century. This conversation was edited for



Dr. Eric Verdin was a scientist studying the HIV virus before dedicating his life to healthy aging research.

length and clarity.

Q: Our society is fixated on youth. How does the Buck Institute manage expectations?

A: The aging field has many people who are overly enthusiastic. We take a relatively conservative stance. I'm convinced that the human lifespan has a hard limit, around 115, at least for the

foreseeable future. What we're thinking about is increasing health span and changing the equation between living old and living healthy.

Q: What does that look like?

A: The major lifestyle determinants for living longer and healthier include nutrition, not eating too much, eating well, physical

activity, stress mitigation, sleep and, most importantly, strong human connections. It's what our grandparents or parents have been telling us all along.

Q: So how are we doing?

A: It's worrisome. We have an obesity crisis. Obesity has the opposite effect of calorie restriction — it shortens lifespan. In

the U.S., for the first time in 150 years, life expectancy is worsening. The causes aren't entirely clear, but COVID-19 was a factor, the opioid epidemic is a significant contributor and the obesity crisis is huge. Regrettably, the rest of the world is following in our footsteps.

Q: The Buck Institute is 25. Which milestones are you most proud of?

A: In the early days, there was skepticism in the field that genes could regulate aging. Cynthia Kenyon, a colleague at UCSF, was a key driver in this discovery. At the Buck, we used simple animal models like worms, fruit flies and mice to identify genes that, when altered, could delay aging. We found exploration revealed many genes and pathways involved in this complex process.

Early on, we found that modifying aging didn't just prolong life — it led to healthier lives. This realization tied aging to chronic diseases like heart disease, stroke, cancer, Parkinson's and Alzheimer's, which have become prevalent as people live longer. Remarkably, animal models that lived longer were also protected against these diseases. This insight formed the basis for the "geroscience hypothesis": by tweaking aging itself, we can help people live longer, healthier lives.

Another significant milestone was discovering the first small-molecule drug that could delay aging in animal models, thanks to my colleague Gordon Lithgow at the Buck. This breakthrough opened up a whole new world of possibilities.

Lastly, we've pioneered research into cellular senescence, led by our late colleague Judith Campisi. She identified how senescent cells, also called "zombie cells," accumulate as we age and contribute to chronic inflammation, a driver of disease. These cells stop dividing and secrete inflammatory molecules that harm surrounding tissues. Judy's work led to the concept of senolytics, drugs that eliminate these harmful cells. Using these drugs in older animals has shown promising results in reducing chronic disease and extending health span.

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Clockwise from top left: Dr. Eric Verdin, president and CEO of the Buck Institute for Research on Aging, participates in a lab meeting; Verdin poses for a portrait at their Novato campus, where the research institute is trying to improve quality of life as we age; famed architect I.M. Pei designed the building in Novato.

VERDIN

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Q: What are you exploring in your latest clinical trial?

A: We found that animals on a ketogenic diet live longer and healthier. This research led us to explore how the ketogenic diet affects health and develop a new product: a derivative of the major ketone body itself. Administering it replicates many benefits of the diet.

We have four ongoing clinical trials led by John Newman and Brianna Stubbs, mainly focused on the ketone body BHB (beta-hydroxybutyrate), which is produced in the liver from fatty acids during periods of low carbohydrate intake and calorie restriction (like when on a ketogenic diet).

Our research explores how much of the ketogenic diet's effects can be reproduced by administering BHB directly (as a supplement). We're investigating how much of the benefits come from diet and fasting versus BHB itself and whether BHB alone can replicate these effects or only partially. We are also exploring the potential of these ketone body products to treat specific diseases such as heart failure.

Q: Have you tried any of this on yourself?

A: I tend to try everything on myself!

Q: What excites you about the next 25 years and the Buck Institute?

A: We're not done understanding aging. There's still so



much to learn to deepen our understanding. What excites me most as a physician is applying this knowledge to humans.

Q: How do you see society changing its perspective on aging?

A: I believe health is an in-

credible privilege. Once people experience it, they see the benefits and share their journey with friends. The focus on longevity is becoming a way to discuss optimal living — how we can make the most of our one life, living long, productive, happy and healthy lives. Many

still have a fatalistic view of aging, but remember that 93% of your longevity is determined by lifestyle and only 7% by genetics. Your longevity is up to you. I encourage people to see their health like an account — the more you invest, the greater the benefits.