



Finding the key to vitamin D

By Jim Spencer

At some point in almost every interview, reporters ask Adit Ginde, “Are you a fan of vitamin D?”

Invariably, his answer is the same: “I am a scientist investigating vitamin D.”

For the 32-year-old physician and researcher, the distinction means everything. Ginde still works roughly six shifts a month in the emergency room at the University of Colorado Hospital. His faculty appointment at the University of Colorado Denver School of Medicine lists him as an assistant professor of emergency medicine.

But since February 2009, Ginde’s analyses of vitamin D in the human body have turned him from an ER doc into one of the country’s experts on a substance that appears more important to health than most scientists and physicians currently understand.

Working with information gathered by the U.S. Centers for Disease Control, including roughly 19,000 human tissue and blood samples and medical histories, Ginde pronounced vitamin D – not vitamin C – the major deterrent for the common cold and other upper respiratory infections. He also called vitamin D levels insufficient and declining in the U.S. population generally and among dark-skinned people in particular.

The lack of vitamin D could contribute not only to respiratory infections, but to cardiovascular disease, and maybe some cancers, Ginde suggested.

“Vitamin D has roles we didn’t know about 10 years ago,” Ginde freely admits. “Even today, most doctors only associate vitamin D with treating rickets and osteoporosis.”

His findings, reached in conjunction with his mentor, Carlos Cargano, a physician and public health expert at Harvard, spawned dozens of stories in the scientific press and mainstream media. National Public Radio called to talk. So did the *Los Angeles Times*, *Chicago Tribune*, *Boston Globe*, *Denver Post*, *Prevention Magazine*, *Men’s Health Magazine*, *Ladies Home Journal*, Denver’s NBC-TV affiliate, CNN, Reuters, Bloomberg News and others.

Ginde suddenly found himself answering questions from journalists, some of whom wanted him to take a leap of faith, not science.

Reasons exist to be enthusiastic about the power of vitamin D, Ginde says. “But as a scientist, you have to follow the data. Being a ‘fan’ doesn’t fit that model. You don’t want to introduce bias.”

On the other hand, Ginde finds it perfectly appropriate to introduce a scientific debate and tests of the recommended daily doses of vitamin D that U.S. public health officials prescribe to the citizenry. Based on Ginde’s findings, those recommended doses could be four or five times too low.

Ginde understands why people pay attention to his analyses.

“Most adults get three to five respiratory infections per year,” he says. “Vitamin D offers the prospect of a relatively simple intervention to prevent them.”

That prospect has become slightly controversial. People can get more vitamin D by increasing exposure to the sun, by eating certain foods and by taking vitamin tablets. But one official at the National Institutes of Health dietary supplements office called Ginde’s conclusions “exaggerated.” On the other hand, pediatricians’ groups already have recommended doubling the recommended dose for kids and another medical researcher recently called the current guidelines “grossly inadequate.”

People can absorb vitamin D from sunlight and certain foods. But Ginde, who got his MD at Washington University in St. Louis and his masters of public health at Harvard, hypothesizes that they may need large supplements to reach levels that will improve their health. In any case, he will let the data do the talking.

“We have a grant to do a pilot clinical trial in nursing home residents,” Ginde says. “We’ll give some of them vitamin D supplements in high doses – 100,000 international units per month, roughly 3,000 units per day.”

U.S. public health officials currently recommend only 600 units per day for people over age 70 and 400 units per day for people 51-70 and just 200 units for people 50 and under. Ginde plans to supplement vitamin D in 200 nursing home residents for a year, record the number of respiratory infections diagnosed by their health providers and compare the results with nursing home residents who did not take supplements.”

He hopes the experiment is the first in an increasingly detailed series of studies to determine whether vitamin D supplements have “a meaningful impact throughout the body.” Vitamin D, Ginde explains, is a hormone that circulates through the body and regulates 1,000 human genes. He’s currently at work with his mentor Camargo to see if vitamin D helps prevent heart disease, asthma and food allergies.

“As a junior investigator,” says Ginde, “this is how you build a career.”

In research perhaps, but while the Colorado Clinical and Translational Sciences Institute passed along an NIH grant so he can spend three-quarters of his professional time as a researcher, Ginde still works shifts in the emergency room because “the emergency room is a tremen-

dous place to understand the need for preventive medicine.”

What Ginde often sees in the ER is critical illness from lack of healthcare access and prevention. He saw the same thing as an undergraduate at Rice University where he helped start a student emergency medical program and rode as an emergency medical technician on ambulances in Houston.

“There were lots of stabbings and shootings in Houston,” he says. “Sometimes we had to wait to treat people until police secured the scene.”

As an emergency room physician, Ginde lives in a “relatively informal, down to earth, intense, high stress environment” where each level of employee interacts with every other on a first-name basis and independence and individual responsibility extends down the chain of command. The chaotic teamwork that emergency medicine demands offers Ginde a yin to the yang of data crunching.

“You have to be able to take care of everything that walks in the door,” he explains. “And you have the ability to make a difference in a short period of time.”

Ginde sees his work on vitamin D making a difference, too, but in a much different time frame than staunching the flow of a gunshot wound. He calls his ongoing analyses “incremental science” in a niche that has room for a junior researcher.

“A scientist is like an inventor,” Ginde says. “You need some new avenue of discovery where you can test hypotheses.”

Eventually, though, he wants to do the same thing he does each time he walks into the emergency room:

Save lives and improve the public’s health.



Physician researcher Adit Ginde, left, analyzes data gathered from roughly 19,000 human tissue and blood samples collected by the U.S. Centers for Disease Control. Soon, in a nursing home study, he will test his conclusion that higher levels of vitamin D will produce better health.