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Diabetes' Pain-Free Test

VeraLight aims to take the blood out of diabetes screening tests.

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When it comes to diabetes monitoring, many a company has tried to deliver a pain-free, no-needle test. After spouting procurements for more than a decade to take the blood out of diabetes blood tests, company efforts—and at times entire businesses—have fallen by the wayside trying to bring such a device to market.

But when it comes to screening for the disease, VeraLight is out to prove that it has a non-invasive solution. The company, spun off of Albuquerque-based InLight Solutions in 2004, has created a device that can detect diabetes with a ray of light shot harmlessly at the arm. If it's approved by the U.S. Food and Drug Administration, it could trump the dominating blood screening test, which requires patients to fast the night before, get their arm pricked by a needle, and then wait until the next day before a laboratory determines the amount of glucose in their blood.

While past glucose monitoring attempts focused on a non-invasive version of the same blood test—a feat that proved a lot tougher than researchers had anticipated—VeraLight poured its resources into a different diabetes indicator found in the skin.

The device, called Scout, weighs about 10 pounds and “looks like a tanning bed... for Barbie,” says VeraLight CEO David Van Avermaete. Scout cradles the forearm and shoots a ray of light at the skin to measure a well-known biomarker of diabetes called advanced glycation endproducts—patches of nearly imperceptibly stiff skin caused by abnormally high levels of glucose. Scout can give a quantitative result in less than 60 seconds, according to Mr. Van Avermaete.

Opening Another Door

With Scout, Albuquerque-based VeraLight hopes to tap into the United States' \$115-million diabetes diagnostic market—not a huge draw, especially considering the meager compound annual growth rate of 1.2 percent, according to Frost & Sullivan analyst Nathan Cohan. But diabetes screening goes hand-in-hand with glucose monitoring, a \$2.5-billion market in the U.S. alone that many companies—[Abbott Laboratories](#) and Roche among them—are actively pursuing.

“Most diabetes companies focus their R&D efforts into glucose monitoring,” says Mr. Cohan. Some focus on monitoring technology with the belief that it might cross over to screening for the disease. VeraLight appears to be doing the opposite. Yet for a startup trying to dislodge a dominant medical practice, starting small may be a good strategy.

Mr. Van Avermaete says Scout will be as easy to use as the blood pressure testing chairs found in drug stores. VeraLight also plans to make it portable, so that it can be used in pharmacies, doctors' offices, or even in mobile vans. VeraLight plans to sell Scout directly to doctors and hospitals, as

well as pharmacies, optical chains, and pharmaceutical companies with diabetes products. Mr. Van Avermaete declined to disclose Scout's cost.

Industry analysts and medical professionals are intrigued by the company's technology, but trepidation remains high. The device is currently in mid-stage clinical trials, and VeraLight hopes it will reach market in about two years.

The arduous federal approval process is just the first hurdle. The medical industry is known for its aversion to new technology, and convincing doctors to use Scout and forgo the reliable blood test will be the ultimate obstacle for the device and the company that developed it.

Breaking the Standard

For Mr. Van Avermaete, a 20-year veteran of the diabetes industry, VeraLight's technology was compelling enough to bring him out of retirement. He called it quits in January 2004 at the age of 52, after working 13 years, including two years as president, for LifeScan, a Johnson & Johnson company that manufactures diabetes monitoring products. Before that, he spent three years at Roche Diagnostics as the director of marketing for home blood glucose monitoring products. While at LifeScan, Mr. Van Avermaete grew the company's annual sales from under \$100 million to over \$1 billion.

VeraLight will need market-savvy leadership. The diabetes diagnostic tool industry "can be a difficult market to penetrate due to the reliability of the fasting glucose test" and a few other blood tests, such as the oral glucose tolerance test, that have shown success, says Mr. Cohan. "The laboratory market is still pretty strong. Costs have been highly optimized in a laboratory," he adds.

The most recent figures available show that in 2002, the U.S. spent an estimated \$132 billion on diabetes treatment and complications, or approximately 10 percent of all national healthcare expenditures, according to the National Diabetes Information Clearinghouse, a government organization.

Diabetes rates in North America have increased substantially over the past 20 years. In the U.S., 20.8 million people—roughly 7 percent of the population—have diabetes, according to the American Diabetes Association. And an estimated 6.2 million people have the disease but remain undiagnosed.

VeraLight believes that a more convenient screening method could dramatically reduce the costs and morbidity associated with diabetes complications, allowing patients to halt or reverse disease progression. The company convinced several investors, including Spring Capital, Wasatch Venture Fund, **Dow Chemical** Company, and the Southern Ute Growth Fund, to dole out a total of \$5 million in funding last September. But the bigger question is whether VeraLight will be able to break the domination of the laboratory-based fasting glucose test, or beat those tests that might come from diabetes management with its ray of light.

Superior to Other Tests

Some think it's only a matter of time before big companies' research into next-generation glucose monitoring products creates better diagnostic tests. "Meter accuracy has improved quite a bit. It may well be getting accurate enough to replace laboratory-based tests," says Darrell Wilson, chief of pediatric endocrinology and diabetes at the Lucile Packard Children's Hospital at Stanford University. As Dr. Wilson sees it, "Glucose screening and management are two sides of the same coin."

That means VeraLight could have tough competition down the road. But Mr. Van Avermaete is pushing ahead to bring his company's non-invasive screening test to the masses—a test that he says is superior to others. He claims Scout works using a more accurate indicator that can also diagnose pre-diabetic patients—something that current blood tests don't do very well. But \$5 million

in funding will only take the company so far through FDA trials; it will need an additional \$15 million to get Scout to market.

Established with the help of a National Institutes of Health grant and seed funding from InLight, VeraLight is the third of four spin-offs of InLight, a privately held company that develops non-invasive light measurement systems for life science applications. InLight also holds a research partnership with J&J, which funds the bulk of InLight's research and owns rights within its non-invasive glucose monitoring technology. The company receives additional funding from other corporations, government grants, and private investors.

VeraLight could benefit from InLight's relationship with J&J down the road. When asked whether his company could become a J&J acquisition target, Mr. Van Avermaete replies: "J&J would fit the profile of a potential acquirer," though he also lists several other big pharma and medical device companies, including Abbott Laboratories and Roche.

Would VeraLight be open to acquisition? "Of course," says Mr. Van Avermaete. If VeraLight succeeds, his second retirement could be a little more comfortable than the first.