

Pass It On®...

Curing Cancer, One Bar of Soap at a Time.

14-year-old Heman Bekele awarded the 3M Young Scientist Award for developing a soap that activates skin cells to fight cancer.

Heman Bekele was born in Ethiopia. He's always had a scientist's curiosity, that insatiable desire to know how the physical world works and how to improve the lives of its inhabitants. Before he moved to the United States at age 4, he remembers watching people working in the hot sun all day. In middle school, he began to wonder if they knew the risk of skin cancer associated with sun exposure.

Skin cancer is one of the most common forms of cancer. Untreated, it can spread beneath the skin's surface to the lymph nodes and blood. The key to preventing complications and even death due to skin cancer is early treatment.

Sometimes, the simplest answers solve the most complex problems. That's where Heman's curious mind comes in. Heman developed Melanoma Treating Soap (MTS), a daily soap that uses a compound to treat skin cancer by reviving dendritic cells — an important part of the immune system — attacked by cancer. Once revived, the healthy cells fight against the cancer cells. Deborah Isabelle, a product engineering specialist from 3M and Heman's mentor, describes the product this way: "The soap reminds the body how to defend itself."

The simple solutions are often the most effective because they are the ones people will use. Soap is a daily ritual for most people, and for those at risk in sun-drenched areas, using soap is an easy and affordable solution. "I wanted to make my idea something that not only was great in terms of science but also could be accessible to as many people as possible," Heman says. "No matter where you live, I think you know and trust soap in comparison to other medicinal products."

Making soap with the right compounds to hold it together and still be effective took months of work creating prototypes. To speed up the process, Heman used computer modeling to test and refine combinations of compounds.

In the journey of pursuing a passion, multiple disciplines are needed: a little knowledge of chemistry, marketing, software and computer skills, and even social science to see how people will respond to a new product. But when we educate ourselves with a purpose, we learn much faster. And Heman started with a goal in mind and learned the skills along the way.

"There's still a lot to do," Heman says. He has plans to start a nonprofit to distribute the soap to places in the world that need it most. That means learning about distribution and supply chains as well as international relations. That's a tall order for a 14-year-old. But to Heman, that's the advantage of starting young. He has dreams of building something life-changing. His vision is to turn the cancer-fighting soap into a "symbol of hope, accessibility, and a world where skin cancer treatment is within reach for all."

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