

make high-risk communities like people living here aware of the signs and symptoms, things to look for to get screened,” she adds. “We do have good treatments, but we don’t have ideal treatments, and we certainly don’t have a cure, but that’s what we’re working on in the research realm.”

Kamen first developed an interest in lupus while a student at Northwestern University in Evanston, Ill. Her roommate had the disease, and Kamen’s first job following graduation was as a study coordinator in lupus research projects. After earning her medical degree from the University of Kansas School of Medicine, she became a resident and fellow at MUSC, working with her mentor Gary Gilkeson, MD, professor of medicine and microbiology/immunology, and a leading authority on lupus.

Connecting the dots in determining the origins of lupus is, at the very least, a daunting experience. Environmental factors play a major role in lupus, Kamen says, but there is a genetic component as well. “If you have a family history of autoimmune diseases, lupus is one of those autoimmune diseases, and they tend to run together in some families,” she says. “But we certainly see a lot of people with lupus who have no known family history.”

Where the genetics and the environment intersect is unknown, but slowly the picture may be becoming clear. Much of Kamen’s focus involves African-Americans living along South Carolina’s Sea Islands, where the potential for lupus is higher. A common finding among lupus patients is vitamin D deficiency, which was especially notable among the Sea Islanders. Adding to this mystery is the fact that the people of the West African nation of Sierra Leone, the ancestral home of many of the Sea Islanders, possess normal vitamin D levels and a much lower incidence of lupus, according to Kamen.


Vitamin D is just one environmental factor under study. Exposure to persistent organic pollutants (POPS) and other environmental contaminants is also being closely studied.

Marine biologists have found dysfunctional immune systems and high levels of these pollutants in the bloodstreams of dolphins frequenting Charleston Harbor. “Many of these POPs are waste byproducts of the textile industry, and they used to be dumped fairly freely into our waters,” Kamen says. “They don’t biodegrade for many, many years.”

As these contaminants make their way into the food chain, she adds, they could become hazardous to humans.


Water-borne toxins are not the only source of the study, however. Common chemicals in the home, such as fabric protectors and flame retardants used on clothing, carpets and furniture, are also being evaluated.

---



Where the genetics and the environment intersect is unknown, but slowly the picture may be becoming clear. Much of Kamen’s focus involves African-Americans living along South Carolina’s Sea Islands, where the potential for lupus is higher. A common finding among lupus patients is vitamin D deficiency, which was especially notable among the Sea Islanders.

---



“We have a large research team with a wide range of expertise to bring everything together, trying to figure out what it is that is making certain people prone to autoimmune disease,” she says, adding that some of today’s household chemicals may have the potential to adversely affect immune systems. “Believe me, when I went into medicine, I knew our work would be interdisciplinary but never imagined that would include marine biologists and spatial statisticians.”

In the process, MUSC researchers have amassed a huge database that continues to expand as they gather information on even the most minute details of their subjects’ lives – exposures to chemicals at work or at

home, proximity to any contaminated groundwater, air pollution, anything that may become a catalyst in the development of lupus. Kamen says there are “billions of data points” to consider.

Does she feel overwhelmed at times?

“I think I would if we weren’t getting some answers,” she explains. “Every time we look we find a little bit more, so rather than overwhelmed, maybe I would use the term ‘invigorated’ because it makes us just want to know more.”



Boneyard Beach, Edisto Island, SC