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Shedding light on Gulf War ills

By [Kevin Lamb](#)

Dayton Daily News

The goal was to explain a serious medical condition affecting thousands of Gulf War veterans, whose symptoms have been dismissed and ridiculed for lack of understanding them.

When they finished, researchers at Wright State University's medical school also shed important new light on another serious medical condition affecting millions of civilians whose symptoms have also been dismissed and ridiculed.

Gulf War syndrome and multiple-chemical sensitivity both are a baffling and often debilitating collection of diverse symptoms.

Both can leave people with cloudy thinking, unable to concentrate or remember.

Both can cause weakness, pain or numbness in the muscles and joints.

Both can lead to headaches, dizziness, rashes, diarrhea or persistent fatigue.

And victims of both have specific biochemical peculiarities, it turns out. Those discoveries, by more than a dozen Ph.D.-level researchers over four years, will help identify those who have either affliction, explain why they have it and raise a realistic hope of finding ways to treat it.

Everybody has enzymes that help break down small amounts of toxic chemicals and chase them harmlessly out of their bodies. Chemically sensitive people, who have significantly lower levels of those enzymes, can become seriously ill from mere traces of some commonplace chemicals.

"We were able to clearly discriminate between normal and sensitive groups," said Gerald Alter, who did much of the enzyme research. Just by analyzing blood samples, colleague Steven Berberich said, he could tell a sensitive patient from someone else.

"It doesn't necessarily take high levels of chemicals," said Daniel Organisciak, who chairs the department of biochemistry and molecular biology. "Not just the levels that we already knew might cause problems, but relatively low levels that might be in the environment all the time."

That makes sense to Dr. Heather Morgan, who treats chemical sensitivity in her Centerville practice. Chemicals also could be causing genetic abnormalities that lead to the enzyme deficiency, she said.

Follow-up research will try to tease out the roles of both inherited genes and environmental contacts, Berberich said. He hopes it will lead to a diagnostic test that could identify chemically sensitive people before their symptoms overwhelm them.

"From a patient's standpoint, it's wonderful to have this validation," said Jackie Barton of Centerville.

"It's good that people understand this is a legitimate problem, and that when I ask people not to wear perfume, I'm not doing it just to be difficult or controlling. I have a very uncomfortable, sometimes long-term reaction to things like fragrances, paint, new carpeting, even the chemicals thrown off by fluorescent lights."

The Department of Defense gave Wright State \$7.2 million toward the cost of the study and the establishment of its Center for Genomics Research. With support from Rep. David Hobson, R-Springfield, and Springfield philanthropist Mary Petticrew, Organisciak said, the researchers explored the similarities between Gulf War veterans and the broader chemically sensitive population, which the National Academy of Sciences has estimated at up to 15 percent of Americans.

Gulf War syndrome appears to be at least partly a heightened sensitivity to low doses of sarin, a chemical weapon known to damage the brain and nervous system in higher amounts. While it's impossible to trace directly to the estimated 80,000 veterans with symptoms, evidence indicates microscopic sarin exposure could be at least one of the causes.

"We can't be so cavalier in terms of low-dose exposure," said Mariana Morris, who chairs the pharmacology and toxicology department. Although the damage from small amounts isn't easily measured, "that doesn't mean you're not having an effect."

Alter's group specifically tested organo-phosphates and formaldehyde. They both "pervade modern homes and workplaces," he said, the former in insecticides and the latter in a vast array of synthetic products that include Perma-Press clothing, construction pressboard and carpeting.

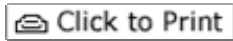
"We live in a toxic soup, let's face it," Morgan said.

"We've been eating pesticides and herbicides laced into our foods, albeit in very low concentrations, since the late 1940s. It's a huge chemical experiment that needs to be looked at, as to why we're seeing so much more chemical sensitivity over the last 25 years."

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