



## UofSC scientists find solution to Gulf War Illness in FDA-approved antiviral drugs

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A recent study led by scientists at the University of South Carolina's Arnold School of Public Health has shown that adjusting GI tract viruses by repurposing existing FDA-approved antiviral drugs offers a route for effective treatment for Gulf War Illness and its myriad of symptoms. Their findings were published in the journal, [Viruses](#).

Previously, UofSC researchers have determined that chemical exposure from the Gulf War altered the balance between the viruses and bacteria that naturally occur in the human GI tract, resulting in Gulf War Illness.

Symptoms of Gulf War Illness include gastrointestinal disturbances, chronic fatigue, widespread pain, chronic headaches, respiratory/sleep problems and neurological problems in memory and learning. This illness has plagued more than 200,000 Persian Gulf veterans over the past three decades.

"Our own viruses interact with bacteria in the gut to maintain a healthy body and mind," says [Saurabh Chatterjee](#), associate professor of environmental health sciences and director of the [Environmental Health & Disease Laboratory](#), who led the study. "If we can tweak our own host viruses and their interactions with gut bacteria, then we can treat the disease symptoms of Gulf War Illness. With our most recent research, we have shown that antiviral drugs that are already in use can be a great starting point for curing the disease and helping thousands of veterans improve their quality of life."

Previous research has already established the link between military deployment during the 1990-1991 Persian Gulf War and numerous chronic health symptoms and disorders. Even today, GWI affects 25-33 percent of the 700,000 United States veterans who served in the first Gulf War. Soldiers deployed in subsequent wars have also reported similar immune system or neurological disorders. The chronic persistence and/or worsening of these individuals' symptoms has proven challenging for both patients and clinicians to fully understand and manage.

By utilizing existing antiviral drugs for treatment, clinicians can begin testing these FDA-approved medications in patient cohorts at an accelerated pace compared to the lengthy timeline associated with traditional pharmaceutical drug trials. This novel approach (i.e., restoring the balance between viruses and bacteria in the GI tract in order to improve symptoms throughout the body) also offers hope to the general population, who may suffer from GI disturbances, such as irritable bowel syndrome, or neurological problems, such as learning or memory deficits.

Other co-authors include Ratanesh K. Seth, Rabia Maqsood, Ayan Mondal, Dipro Bose, Diana Kimono, LaRinda A. Holland, Patricia Janulewicz Lloyd, Nancy Klimas, Ronnie D. Horner, Kimberly Sullivan, Efrem

S. Lim. Dr. Lim's laboratory was instrumental in unravelling the virome sequences that formed an integral part of the study.

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#### **Additional Resources**

- [Saurabh Chatterjee receives \\$2.4 million VA Merit Award to study treatment implications for veterans with Gulf War Illness](#)
- [Arnold School's Saurabh Chatterjee secures a nearly \\$1 million grant to advance treatment and understanding of relationship between gut-microbiome and Gulf War Illness](#)
- [Research links Gulf War Illness to gastrointestinal disturbances and uncovers pathways to how this condition causes neuroinflammation](#)
- [Researchers find 600 percent increase in sleep disorders among U.S. Veterans](#)
- [VA invites Ronnie Horner to join Research Advisory Committee on Gulf War Veterans' Illnesses](#)

#### **About the Arnold School of Public Health**

The Arnold School of Public Health was established in 1975 and has an enrollment of more than 3,000 student majors including more than 700 graduate students and 2350 undergraduates. The Arnold School currently employs 155 tenure, research and clinical-track faculty members with doctoral degrees. Based at the University of South Carolina's main campus in Columbia, South Carolina, the Arnold School is one of 66 schools of public health fully accredited by the Council on Education for Public Health and is accredited through 2024. The School's primary mission is to expand, disseminate and apply the body of knowledge regarding prevention of disease, disability and environmental degradation; promotion of health and well-being in diverse populations; and provision of effective, efficient and equitable health services.

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