

Lea Steele, Ph.D. Scientific Director, Research Advisory Committee on Gulf War Veterans' Illnesses
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Testimony to the U.S. Senate Committee on Veterans Affairs

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Good morning and thank you for inviting me today. I'm Dr. Lea Steele, an epidemiologist and associate professor at Kansas State University. I have conducted research on the health of Gulf War veterans for the past 10 years and am privileged to serve as Scientific Director of the Research Advisory Committee on Gulf War Veterans' Illnesses. This public advisory body of distinguished scientists and veterans was mandated by Congress and charged with reviewing scientific research on the health of Gulf War veterans. Our members include Dr. White, who will be testifying today, other leading experts, a former president of the American Academy for the Advancement of Science, and the head of CDC's Molecular Neurotoxicology Laboratory. The Committee Chair, Mr. Jim Binns, will also be testifying today.

The Committee has now reviewed and assessed the extensive amount of scientific research and government investigations on the Gulf War and the health of Gulf War veterans. We will release a major report on Gulf War illness in the next several months. My purpose today is to share with you some highlights of what the Committee has learned in the course of our scientific work.

First, I want to distinguish between the condition known as Gulf War illness and other health issues related to the 1991 Gulf War. By Gulf War illness I am referring to the multisymptom condition that affects Gulf War veterans at high rates, but is not explained by standard diagnoses or medical tests. Veterans with Gulf War illness typically experience some combination of severe headaches, memory and concentration problems, persistent pain throughout the body, and profound fatigue. Other difficult symptoms include gastrointestinal problems—we know veterans who have had diarrhea for 16 years. Respiratory problems are also common, and unusual skin lesions and rashes. Gulf War illness is real, it was not caused by stress, it is not the same thing that happens after every war, and it is widespread among Gulf War veterans.

There are also other health issues related to Gulf War service. These include ALS, or Lou Gehrig's Disease, which a large VA study has shown affects twice as many Gulf War veterans as other veterans of that period. Brain cancer has also become a Gulf War health issue. You may be familiar with a well-known incident near Khamsiyah, Iraq, in March of 1991. The Pentagon has estimated that about 100,000 U.S. military personnel were potentially exposed to low-level nerve agents with the destruction of a large weapons depot that contained sarin and cyclosarin. Recent studies have identified diverse neurological problems in relation to that incident, including findings that veterans downwind from the demolitions have died from brain cancer at twice the rate of veterans in other areas of theater.

There may also be problems with other diagnosed diseases, but studies are lacking. The Research Advisory Committee has recommended studies to assess conditions such as multiple sclerosis, Parkinson's disease, and cancer in Gulf War veterans. All of these issues are important, but far fewer Gulf War veterans have ALS or brain cancer than the very large number affected by Gulf War illness. So I will focus now on what we have learned from the many scientific studies on this condition. Here are some of the highlights:

! Gulf War illness is real and affects a large number of veterans. You might have heard in media stories or from government agencies that there is no Gulf War illness or no "unique Gulf War syndrome". There is unquestionably a condition that resulted from service in the 1991 Gulf War, documented in epidemiologic studies of Gulf War veterans from around the U.S. and some allied countries. No studies have found otherwise. The "no unique syndrome" comment refers more to a semantic point about what does or does not constitute a "unique syndrome." Our Committee has never considered it particularly important whether the condition is or is not called a unique syndrome. The point is that a lot of veterans are sick with a condition caused by their service in the Gulf War.

How many are sick? Studies consistently find that 25-30 percent of Gulf War veterans have this condition, in relation to their service in the war. This includes VA's most recent large follow-up study. That means that Gulf War illness affects between 175,000 and 200,000 of the 700,000 Americans who served in the Gulf War.

! Gulf War illness was not caused by psychological stress. The most comprehensive and well-analyzed studies have found no connection between Gulf War illness and serving in combat. In fact, rates of psychiatric conditions like PTSD are considerably lower in Gulf War veterans than veterans of other wars. This stands to reason since, unlike current deployments, severe trauma was relatively uncommon in the 1991 Gulf War. A decisive victory was achieved after six weeks of intensive air strikes and a ground war that lasted just four days. Most troops did not see combat and were never in areas where battles took place.

! Research studies consistently identify links between Gulf War illness and neurotoxic chemicals. Many different Gulf War exposures have been suggested as causes of Gulf War illness. These include the smoke from over 600 burning Kuwaiti oil wells, multiple vaccines, depleted uranium munitions, and low-dose exposure to chemical weapons.

The most consistent and extensive evidence implicates chemicals that can have toxic effects on the brain. These chemicals include pills (pyridostigmine bromide, or PB) that were given to protect troops from effects of nerve agents, excessive use of pesticides, and low levels of nerve gas in theater. Many of these chemicals have a similar type of action; they affect levels of a particular brain chemical, the neurotransmitter acetylcholine. Studies also show that these brain toxins can act synergistically, that is, combined exposures are worse than any single exposure by itself.

A link between Gulf War illness and neurotoxic chemicals is also compatible with what we know from studies of biological abnormalities in Gulf War veterans. Diverse studies have identified abnormalities in the brain and the autonomic nervous systems of sick Gulf War veterans, using different types of sophisticated brain scans and other testing methods.

! Effective treatments for Gulf War illness are urgently needed. Studies show that few veterans with Gulf War illness have recovered or even substantially improved over time. As a result, many Gulf War veterans have been sick for as long as 16 years. Effective treatments for Gulf War illness have not been found—very few have even been studied. The Research Advisory Committee continues to give highest priority to research that leads to effective treatments for sick Gulf War veterans.

In short, Gulf War illness is real, it is serious, and it is still widespread among veterans of the 1991 Gulf War. It is not the result of psychological stress and is not the same thing that happens after every war. Progress has been made in understanding "big picture" questions about Gulf War illness. The Research Advisory Committee believes that remaining questions can and must be

addressed. It is our obligation, not only to assist 1991 Gulf War veterans who are still sick as a result of their wartime service, but also to ensure that similar problems do not affect future American troops deployed to war.