

Testimony of Dr. Remington Nevin, MD, MPH  
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to the  
Senate Committee on Appropriations  
Subcommittee on Defense

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Good morning Mr. Chairman and members of the Committee. My name is Dr. Remington Nevin. I am a board certified Preventive Medicine physician, epidemiologist, and medical researcher. I am a graduate of the Uniformed Services University School of Medicine; the Johns Hopkins Bloomberg School of Public Health; and the residency program in Preventive Medicine at the Walter Reed Army Institute of Research, where I was awarded the distinguished George M. Sternberg Medal. I have published extensively in medical and scientific journals, and my research has informed and broadly influenced military public health policy for the past seven years.

I am here today to testify on an important issue which I fear may become the 'Agent Orange' of our generation: a toxic legacy that affects our troops, and our veterans. This is a critical issue that is in desperate need of research funding.

I am referring to the harmful effects of the antimalarial drug mefloquine, also known as Lariam®, which was first developed over 40 years ago by the Walter Reed Army Institute of Research.

Mefloquine causes a severe intoxication syndrome, characterized by vivid nightmares, profound anxiety, aggression, delusional paranoia, dissociative psychosis, and severe memory loss. Experience has shown that this syndrome, even if rare, can have tragic consequences, both on the battlefield, and on the home front.

My recent research has helped us understand this syndrome as a toxic encephalopathy that affects the limbic portion of the brain. With this insight, we now understand the drug's strong links to suicide, and to acts of seemingly senseless and impulsive violence. Yet new research suggests that even mild mefloquine intoxication may also lead to neurotoxic brain injury

associated with a range of chronic and debilitating psychiatric and neurologic symptoms.

It is unknown how many of the hundreds of thousands of troops previously exposed to mefloquine may be suffering from the devastating effects of this neurotoxicity. However, I can tell you that I am contacted nearly every day by military patients and veterans, from the United States, and from around the world, seeking diagnosis and care for their symptoms. Their compelling and often heart-wrenching stories can be found regularly in media reports worldwide. Invariably, these patients are frustrated by a lack of resources and information specific to their condition.

A recent publication by the Centers for Disease Control suggests that the side effects of mefloquine may even confound the diagnosis and management of posttraumatic stress disorder and traumatic brain injury.

Given our research commitments to posttraumatic stress and traumatic brain injury, the first two signature injuries of modern war, this observation calls for a similarly robust research agenda into mefloquine neurotoxic brain injury, to ensure that patients with these conditions are receiving accurate diagnosis and the very best medical care.

Some concrete actions for facilitating this research include:

1. Expanding the scope and mission of the Defense Centers of Excellence and the National Intrepid Center of Excellence to include the evaluation and care of patients suffering side effects from mefloquine; and
2. Funding a dedicated mefloquine research center at a civilian medical school or school of public health, to attract the very best minds to this problem, and to coordinate broad investigations into the pathophysiology, epidemiology, clinical diagnosis, and treatment of mefloquine intoxication and neurotoxic brain injury.

A commitment to this research, roughly commensurate with our initial investment in mefloquine's development, will allow us to mitigate the effects of the toxic legacy it has left behind. If this issue is left unaddressed, mefloquine could become our next 'Agent Orange', but it does not have to. With appropriate

action, mefloquine neurotoxic brain injury could join posttraumatic stress and traumatic brain injury as the third recognized signature injury of modern war, and as a result, receive the same level of commitment shown for these first two conditions.

I would again like to thank you Mr. Chairman, and members of the Committee, for the opportunity to appear before you and bring this issue to your attention. I should emphasize in closing that the opinions I expressed today are my own and do not necessary reflect those of the U.S. Army. This concludes my prepared statement and I am happy to answer any questions that you may have.

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