CB2 Receptor Therapy Using the FDA-Approved Drug Raloxifene to Mitigate Visual Deficits after Mild TBI and/or Ocular Trauma

**Principal Investigator:** REINER, ANTON J  
**Institution Receiving Award:** TENNESSEE, UNIVERSITY OF, HEALTH SCIENCE CENTER  
**Program:** PH-TBI  
**Proposal Number:** MR141242  
**Award Number:** W81XWH-16-1-0076  
**Funding Mechanism:** Neurosensory and Rehabilitation Research Award - Applied Research Option  
**Partnering Awards:**  
**Award Amount:** $1,346,882.00

**PUBLIC ABSTRACT**

Head trauma from a blast, blow, or collision is an extremely common injury among military personnel deployed in recent wars. Although the vast majority survives these injuries, traumatic brain injury (TBI) from the blast event, even when mild, and/or non-rupturing ocular trauma can harm the visual system and impair visual functioning. The symptoms observed often include reductions in visual acuity and contrast sensitivity, retinal thinning, optic nerve neuropathy, and painful light sensitivity. The visual deficits can impair military performance, prevent redeployment, and greatly mar post-military functioning. The impaired military functioning adversely affects military capacity and preparedness. The diminished job-related functioning and dependence resulting from TBI or ocular trauma place particularly great financial and personal stress on the warriors themselves, and on their families, after military their service. Visual impairment from head trauma has become endemic among present and past warriors, and no treatments are known that can prevent or reduce their adverse consequences for visual functioning. The studies we propose here offer the promise of a therapy that can soon be used to curtail visual deficits after head trauma in warriors.