



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Conferences and Symposia

Sixth Military Vision Symposium of Ocular and Vision Injury

In March 2017, staff from the Vision Center of Excellence (VCE) participated on the organizing committee and a presented at 6th Military Vision Symposium on Ocular and Vision Injury, which is organized and sponsored by Schepens Eye Research Institute, Massachusetts Eye and Ear Infirmary, and Harvard Medical School. Attendees, including vision researchers, ophthalmologists, and military subject matter experts, discussed the latest advancements in eye research and military vision care with focus on blast injuries. The presentations ranged from the areas of blast physics to consequences of blast eye injury, and the rehabilitation and restoration of visual function after exposure to blast. VCE staff made two presentations:

1. Blast Physics and Blast Consequences (*Mazzoli 2017b*) - The signature weapon of the current conflict is said to be the Improvised Explosive Device, which, fundamentally, is a high-energy explosive detonated in the proximity of ground-based personnel. This creates a dramatic injury pattern of complex and devastating polytrauma, including ocular polytrauma. In reality, however, explosions of this sort are not limited to military battlefields, as domestic terrorism and industrial accidents become increasingly commonplace. In this light, an understanding of blast physics and injury mechanisms is germane to ophthalmologists and researchers in all segments of society. This introductory talk will discuss fundamentals of high-energy blast physics as well as blast injury mechanisms. It will also touch on characteristics of low-energy and thermobaric munitions. The talk set the stage for subsequent symposium presentations that will discuss these aspects in greater detail.
2. Overview of Public Health Aspects of Eye Injuries in Mass Casualties (*Mazzoli 2017c*) - Ocular injuries represent a significant component of domestic mass casualty events, regardless of the nature or setting of the incident. Whether the result of industrial accident, domestic terrorism, natural disaster, or other calamity, eye and vision injuries will affect both the casualties and those attempting to care for them. Recent examples include Hurricane Katrina, the Reno Air Show crash, the Boston Marathon Bombing, the West, Texas fertilizer plant explosion, and the New Jersey commuter train crash. Public health considerations span from disaster response planning to prevention, mitigation at the pre-ophthalmic points of care, and treatment.

The symposium—the first of its kind to focus on blast consequences and effects on the eye—introduced the audience to the spectrum of ocular injuries likely to ensue from high energy blasts. Because these incidents are no longer exclusive to the military, civilian clinicians and researchers will be more prepared to address these injuries, and will understand the challenges faced by these ocular casualties.





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REFERENCES:

Mazzoli, R. A. 2017. "Blast Physics and Blast Consequences." 6th Military Vision Symposium on Ocular & Vision Injury, Boston, MA, March 30-31, 2017.

Mazzoli, R. A. 2017. "Overview of Public Health Aspects of Eye Injuries in Mass Casualties." 6th Military Vision Symposium on Ocular & Vision Injury, Boston, MA, March 30-31, 2017.

