Navy Optometry Research Update

CDR Hong Gao, OD, PhD, FAAO
LCDR Micah Kinney, OD, PhD, FAAO
LCDR Adam Preston, OD, PhD, FAAO

4 June 2021
1400-1500 (ET)

Tri-Service Vision Conservation and Readiness

CDR Hong Gao, OD, Ph.D, FAAO

04 JUN, 2021

Presenter

Hong Gao, OD, PhD, FAAO

Aerospace Optometrist

CDR, MSC(AsO), USN

Navy Section Chief

Tri-Service Vision Conservation & Readiness Branch

U.S. Army Public Health Center

Aberdeen Proving Ground, MD

CDR Hong Gao, OD, Ph.D

- 2003-2006: Staff Optometrist and Dept. Head at the Naval Branch Health Clinic Mayport, NS Mayport, FL.
- 2006-2009: Received a Ph.D in Vision Science degree under the Navy's FTOST/DUINS program.
- 2010: Completed Navy Flight Surgeon/Optometrist TH-57B and T-34C primary pilot instruction and successfully designated as a Naval Aerospace Optometrist. Had accumulated over 400 hours of military fixed and rotary wing flight time as 2nd pilot and aircrew 2009-2018.
- 2010-2014: Naval Aerospace Medical Research Laboratory, NS Pensacola, FL and Naval Medical Research Unit-Dayton, WPAFB, OH.
- 2014-2018: Research Director and Division Head at the Navy Warfighter Refractive Surgery Center, NMC San Diego, CA.
- 2018-present: Navy Section Chief, TSVCR Branch, Army Public Health Center, MD.

Disclosures

- Dr. Hong Gao has no relevant financial or non-financial relationships to disclose relating to the content of this activity.
- The views expressed in this presentation are those of the presenter(s) and do not necessarily reflect the official policy or position of the Department of Defense, nor the U.S. Government.
- This continuing education activity is managed and accredited by the Defense Health Agency J-7 Continuing Education Program Office (DHA J-7 CEPO). DHA J-7 CEPO and all accrediting organizations do not support or endorse any product or service mentioned in this activity.
- DHA J-7 CEPO staff, as well as activity planners and reviewers have no relevant financial or non-financial interest to disclose.
- Commercial support was not received for this activity.

Learning Objectives

At the conclusion of this activity, participants will be able to:

1. Summarize military vision readiness policy and regulation.
2. Show military vision and optical readiness.
3. List Navy & Marine Corps vision conservation and eye injury projects.

Vision Readiness – Purpose

- Ensure performance, protection, safety
  - ❑ Train-as-you-fight ethos
- Reduce pre-deployment demands
  - ❑ Eye examination services
- Optical fabrication services
  - ❑ Reduce in-theater demands

*A visually and optically **ready** Force*

Vision Readiness – Medical Requirements

- DODI 6490.07 Deployment-Limiting Medical Conditions for Service Members and DoD Civilian Employees
  - Best corrected visual acuity must meet job requirements to perform duties safely
- DODD 6200.04 Force Health Protection
  - Ensure appropriate utilization of effective personal protective equipment (PPE) and measures
- DODI 6490.03 Deployment Health
  - Combatant Commanders responsible for enforcing the use of PPE
  - Specific PPE requirement based on health threat
  - Issue PPE as required

Individual Medical Readiness

- DODD 6200.04 Force Health Protection (FHP) (2007)
  - To provide a healthy and fit force, the DoD components shall -
    - Provide health assessments / wellness interventions to include:
      - Routine annual health… assessments
      - Annual IMR assessment
      - Pre- and post- deployment health assessments
- DODI 6200.05 Force Health Protection Quality Assurance Program
  - Establishes readiness metrics
  - 75% of DOD personnel at IMR Classification 1
  - 90% of DOD personnel in IMR Classification 1 or 2

IMR - This is a minimum requirement for readiness

DoD Vision Readiness

DODI 6025.19 Individual Medical Readiness (IMR)

- Direct command responsibility for IMR
- 6 Elements
  - PHA
  - Deployment-limiting medical and dental conditions
  - Dental assessment
  - Immunization status
  - Medical readiness and laboratory studies
  - Individual medical equipment

DOD "core" Requirement: One pair GMI (gas mask inserts)

Services may specify additional medical equipment such as "2 pairs of prescription spectacles, laser eye protection, hearing aid batteries, etc."

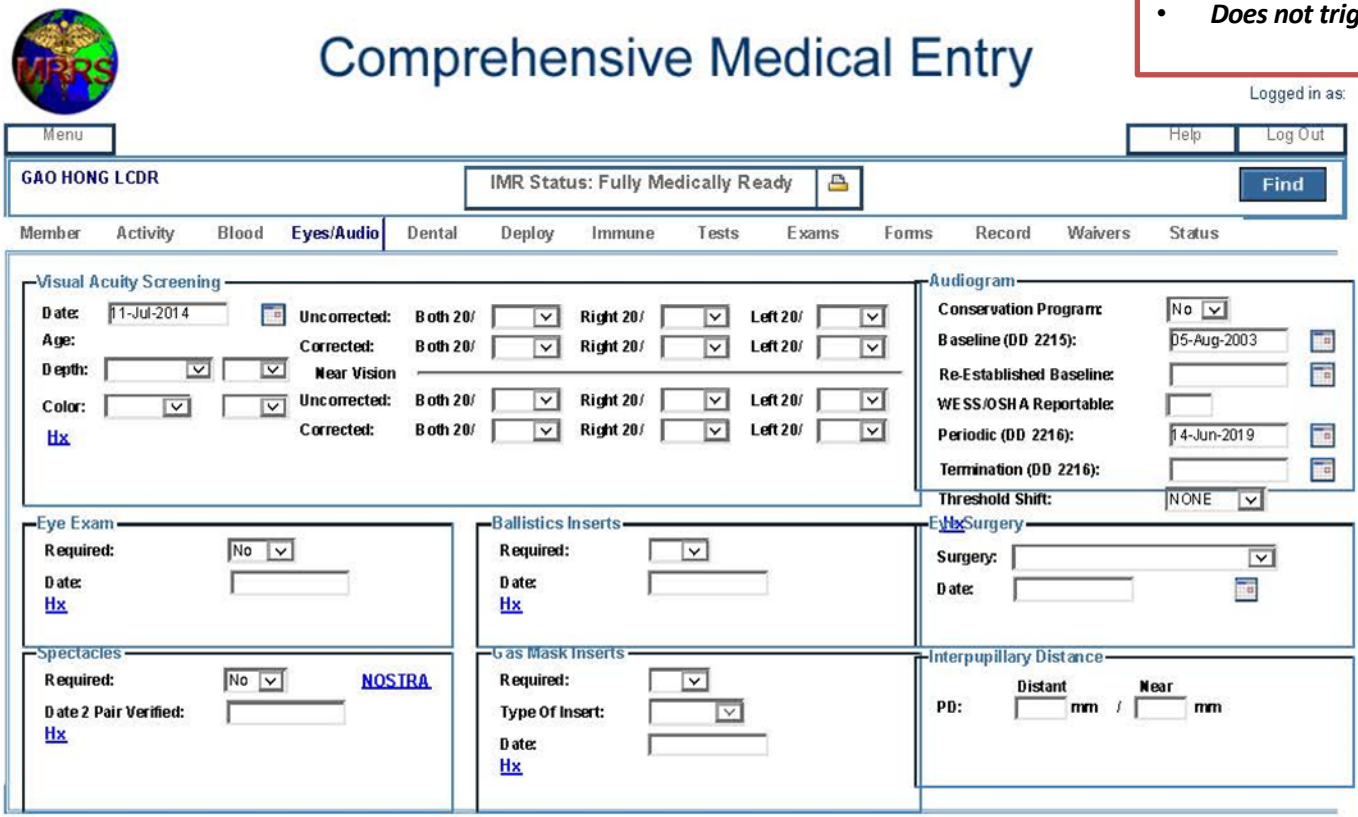
Navy Vision Readiness

SECNAVINST 6120.3A Periodic Health Assessment for Individual Medical Readiness (2019)

- Vision screening is not a PHA component
- Requires "individual medical equipment" if require vision correction
  - 2 pairs of eyeglasses
  - Deployment:
    - 2 Ballistic protective optical inserts
    - Protective mask insert (PMI) or gas mask insert (GMI)

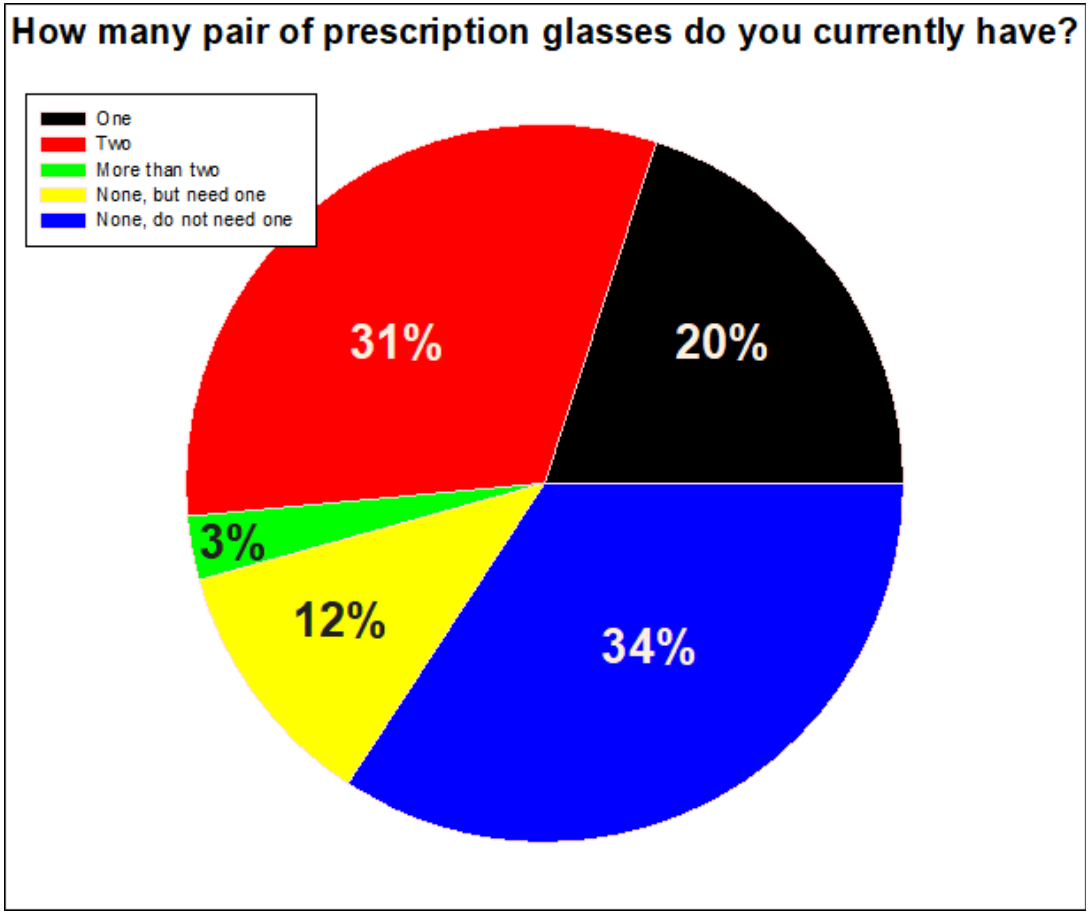
Navy – Medical Readiness Reporting System (MRRS)

- *System defaults assume no defects*
- *Blank VA field assumes no defects*
- *Does not trigger an incomplete PHA*



"Medically Ready Force…Ready Medical Force"

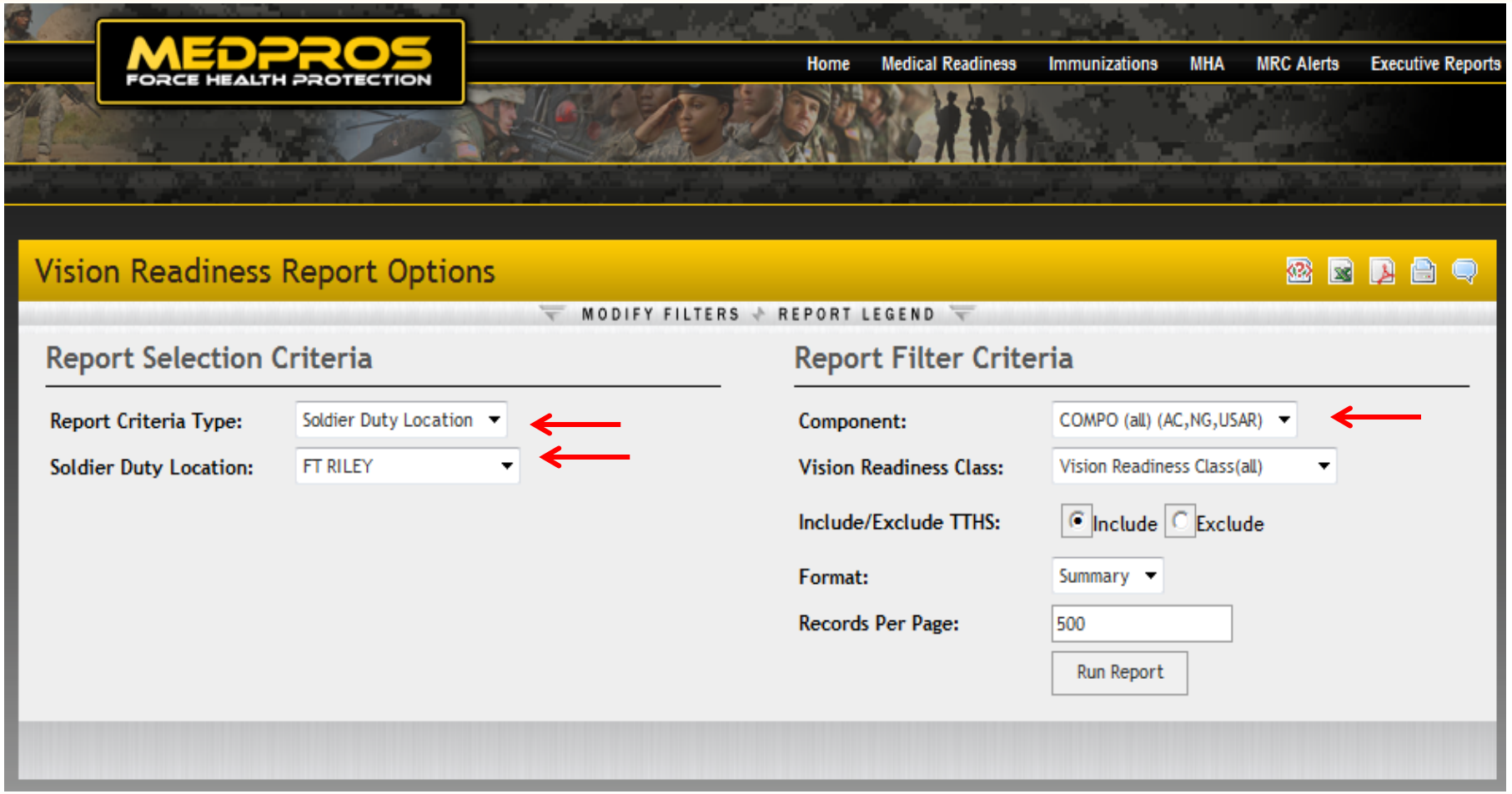
Are we Vision & Optical ready?



Ship company survey (FY19):

- 32% of sailors are NOT optical ready
  - *"1 pair of glasses"*
  - *"No glasses but need one"*
- 12% of sailors are NOT vision ready
  - *"No glasses but need one"*

Army Vision Readiness – MEDPROS



Army – Vision Readiness

DA Pam 40-502 Medical Readiness (JUN2019)

MRC-1

- *Vision Readiness Class 1 (VRC 1)*
  - *20/40 – binocular at distance, and near (if age 45 or older) or have a medical waiver*
  - *Rx less than 4 years old*
  - *2 pairs of glasses, 1 APEL approved MCEP, one PMI*
  - *Referral to optometry is recommended if best vision is worse than 20/20*
- *VRC 2*
  - *Only does not meet the spectacle requirement above*
  - *Medically ready*

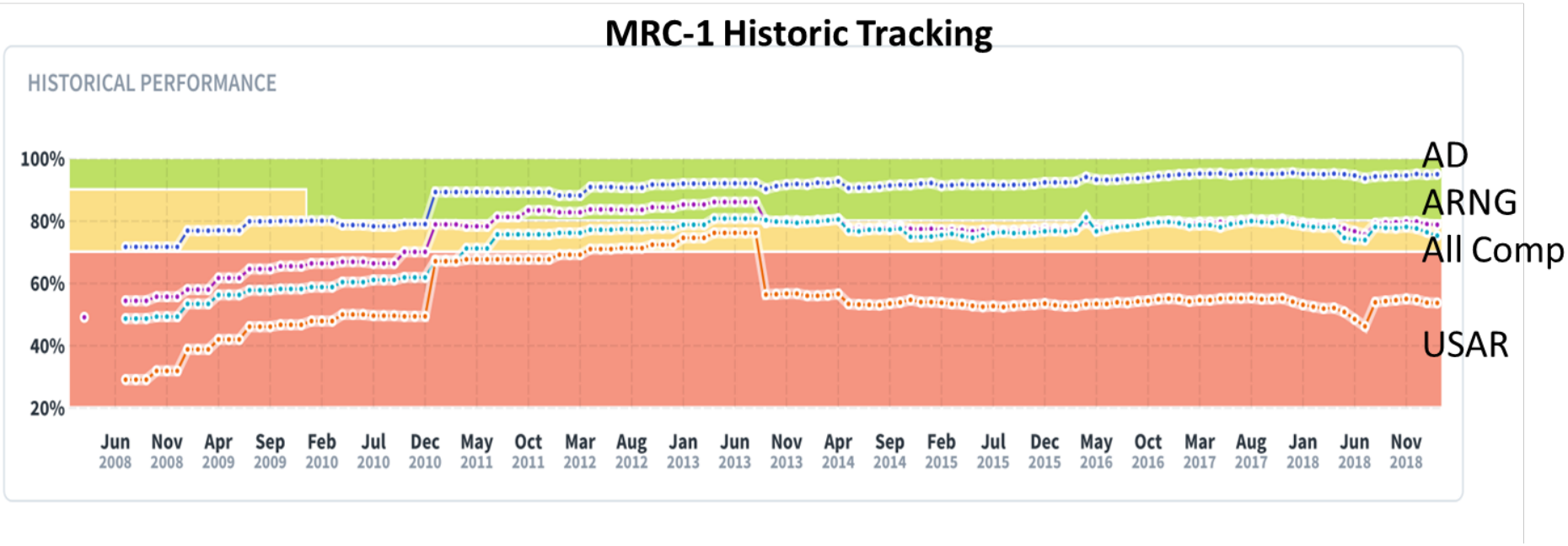
MRC-3

- *VRC 3*
  - *Worse than 20/40 or Rx older than 4 years*
  - *Not visually and/or optically ready, not medically ready*

MRC-2

- *VRC 4*
  - *Vision screening older than 15 months or no documentation*
  - *Partially medically ready*

Army –
Strategic Management System (SMS)



Air Force- ASIMS

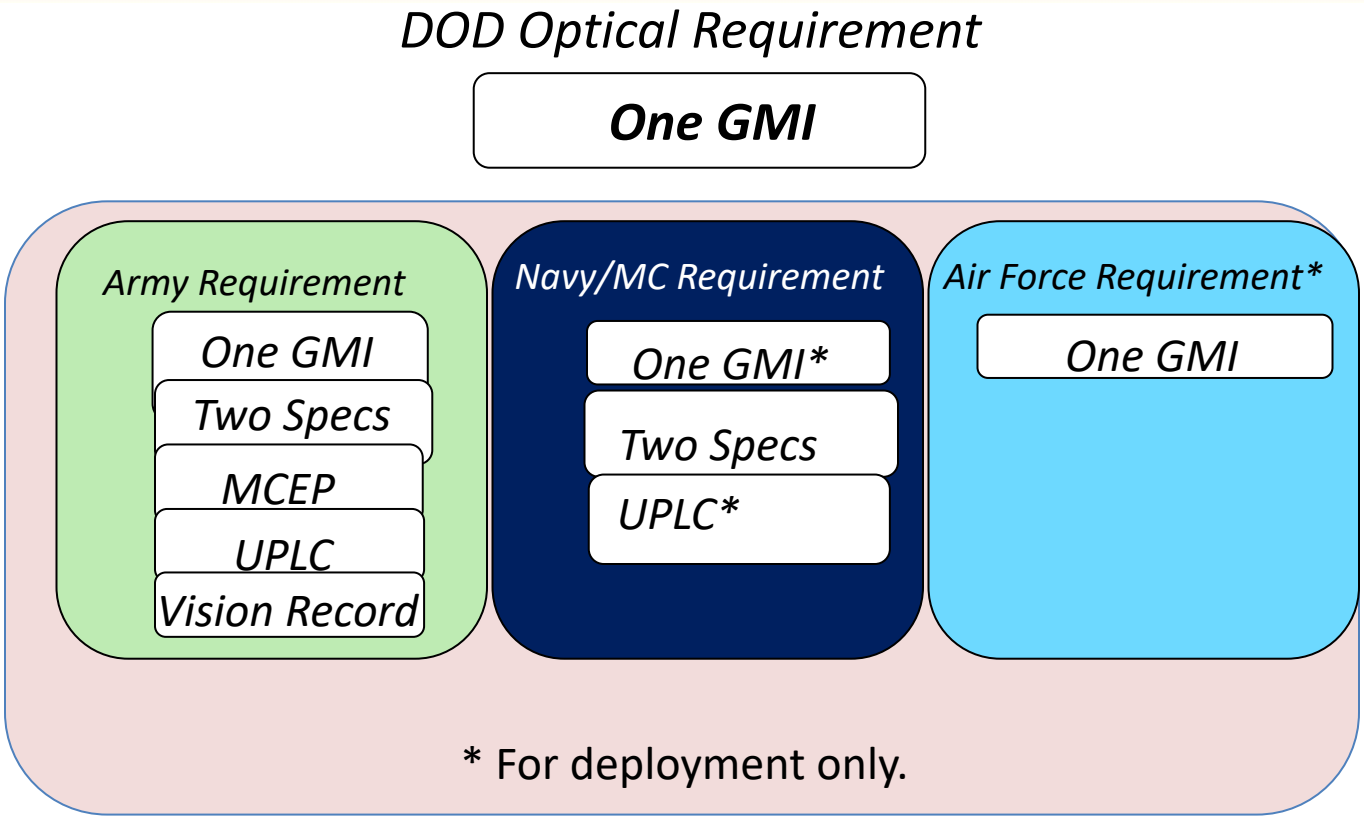
- Aeromedical Services Information Management System (ASIMS)
  - ❑ Uses established PHA rules
  - ❑ Flags physical exam requirements and clinical preventive services
  - ❑ Tracks DoD IMR requirements
  - ❑ GMI possession is tied to the IMR Calculation
    - Driven by distant visual acuity
    - ASIMS pulls GMI date from spectacle ordering system (SRTS)

Aviation – Vision Readiness

- Aeromedical Electronic Resource Office (AERO)
  - A web-based DOD system used jointly by the U.S. Army, Coast Guard, and Navy
  - Linkage with the Air Force AIMWTS electronic waiver system is being investigated

- Aeromedical Information Management Waiver Tracking System (AIMWTS)
  - US Air Force plight physicals, Medical waivers, etc.

Vision Readiness – Summary



Military Combat Eye Protection

- The Army's Program Executive Office – Soldier (PEO-Soldier):
  - Certifies all MCEP items -COTS Products approved for military use
    - American National Standards Institute Z87 Safety Eyewear standard
    - U.S. Military ballistic fragmentation standards
      - 5-7 times greater ballistic fragmentation protection for the eyes than standard Z87 approved eyewear
- APEL approved eyewear
  - Authorized for use in deployments and military training for ground troops since 2005

***AUTHORIZED PROTECTIVE EYEWEAR LIST* (APEL) = PPE**

Military Combat Eye Protection - APEL

- *As of **02 July 2019***

"Medically Ready Force…Ready Medical Force"

Navy & Marine Corps MCEP

Optical Inserts

⇦ GMI

⇦ UPLC

DEPARTMENT OF THE NAVY
BUREAU OF MEDICINE AND SURGERY
2300 E STREET NW
WASHINGTON DC 20372-5300

MAY 18 2007

MEMORANDUM FOR COMMANDER, NAVY MEDICINE EAST
COMMANDER, NAVY MEDICINE WEST
COMMANDER, NAVY MEDICINE NATIONAL CAPITAL AREA
COMMANDER, NAVY MEDICINE SUPPORT COMMAND

SUBJECT: Military Combat Eye Protection

This memorandum clarifies and identifies Navy Medicine's responsible agency for providing refractive inserts for Military Combat Eye Protection (MCEP). This eyewear is for protection against combat ballistic threats and is not synonymous with industrial protective eyewear worn for protection against industrial or blood-borne pathogen hazards.

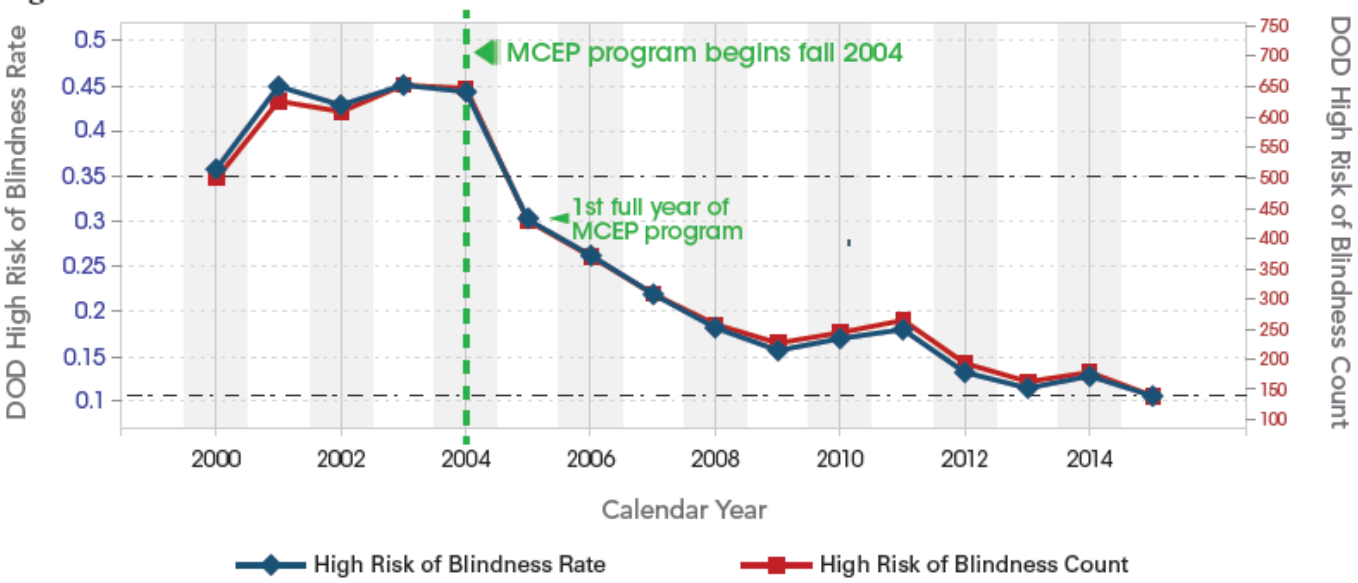
MCEP must pass independent testing prior to fielding with Navy and Marine Corps units. MCEP must have provisions for refractive correction. The Navy Expeditionary Combat Command (NECC) and Marine Corps Systems Command are responsible for the MCEP program.

Naval Ophthalmic Support and Training Activity (NOSTRA) is responsible for developing, maintaining, and posting on their website the current authorized protective eyewear list (APEL). MCEP listed on the APEL is supported by NOSTRA for corrective inserts. All MCEP for Navy Medicine units must be purchased in accordance with the APEL.

Strategic Outcome

DOD Overall Risk of Blindness Injury Trend, CY 2000–CY 2015

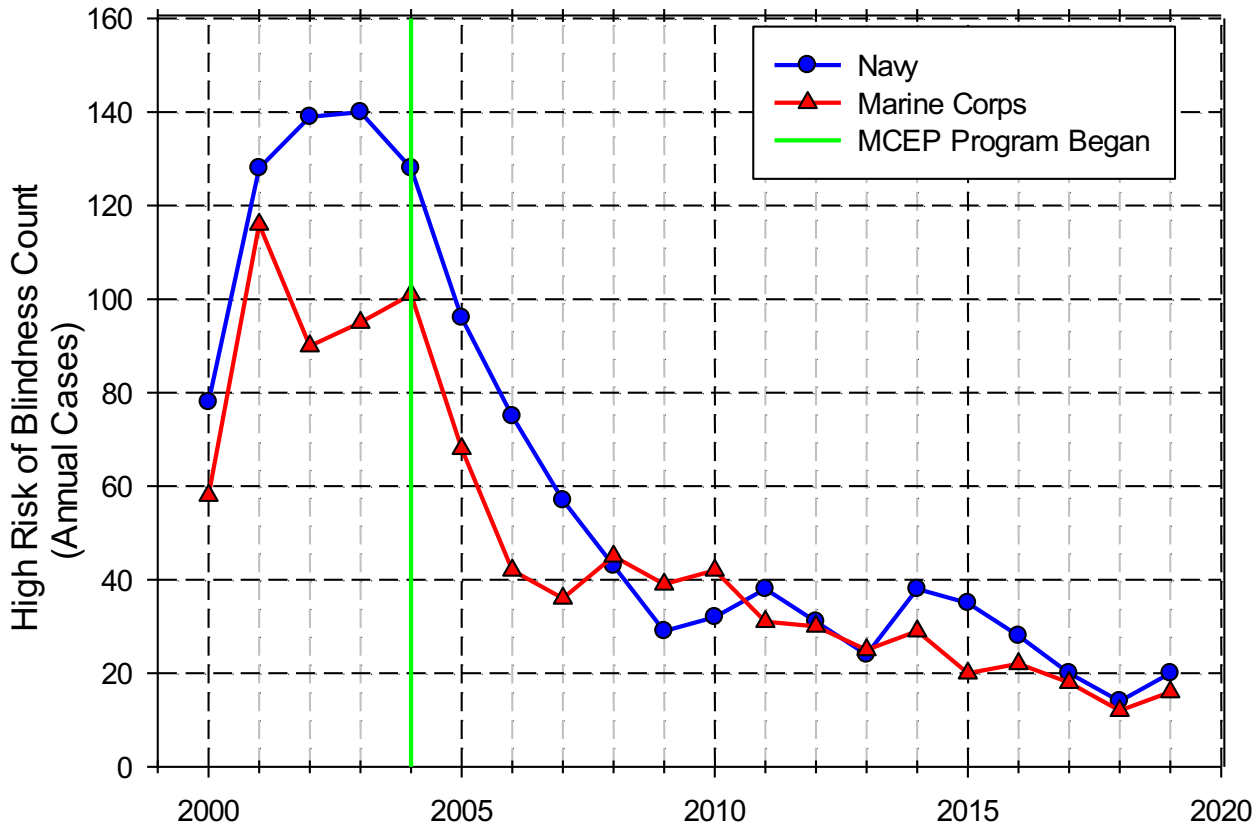
Figure 1.



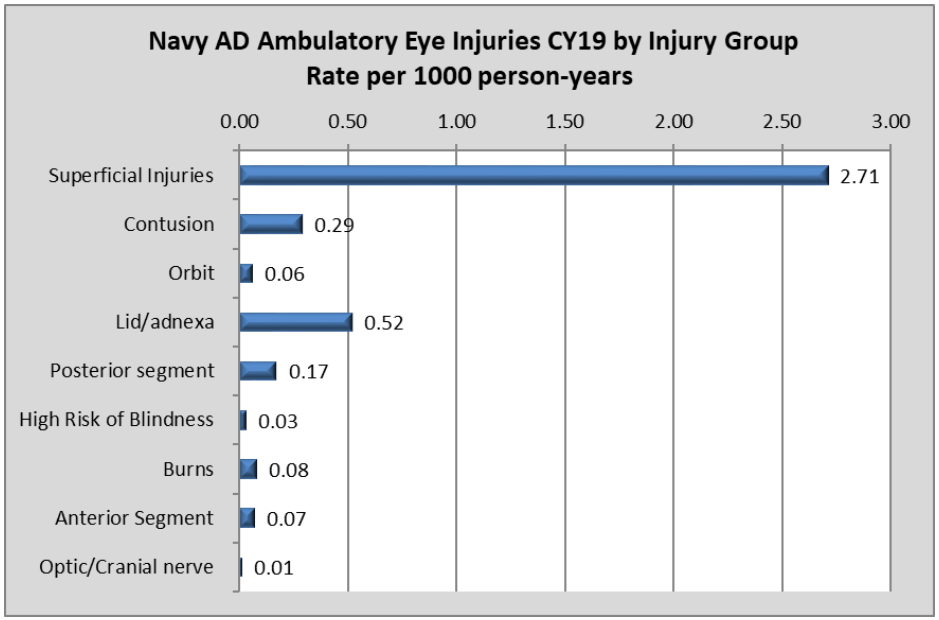
(Army Public Health Center, 2016)

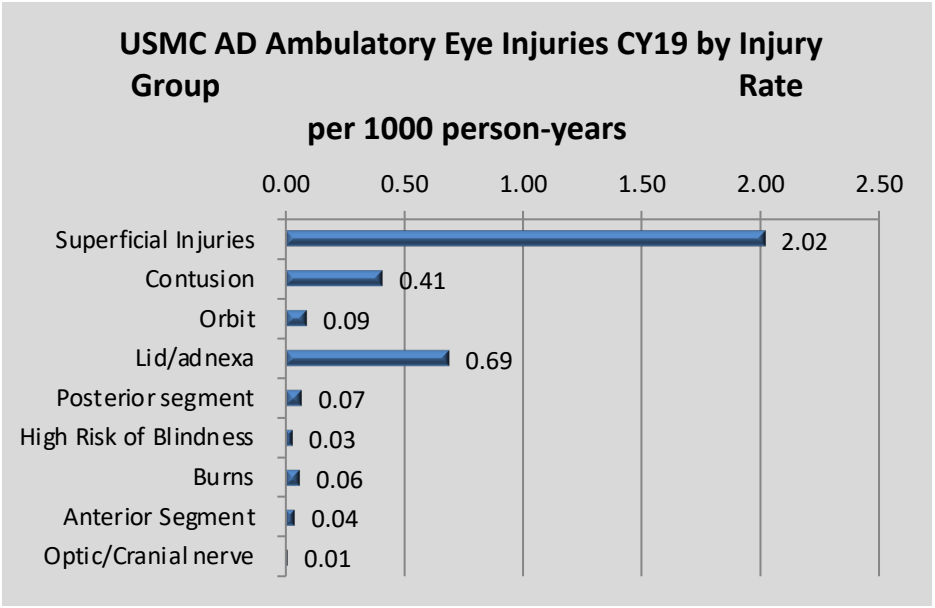
2019 DoD High Risk of Blindness:
Rate: 0.04 per 1,000 person-year
Count:111 cases

Navy & Marine Corps – High Risk of Blindness



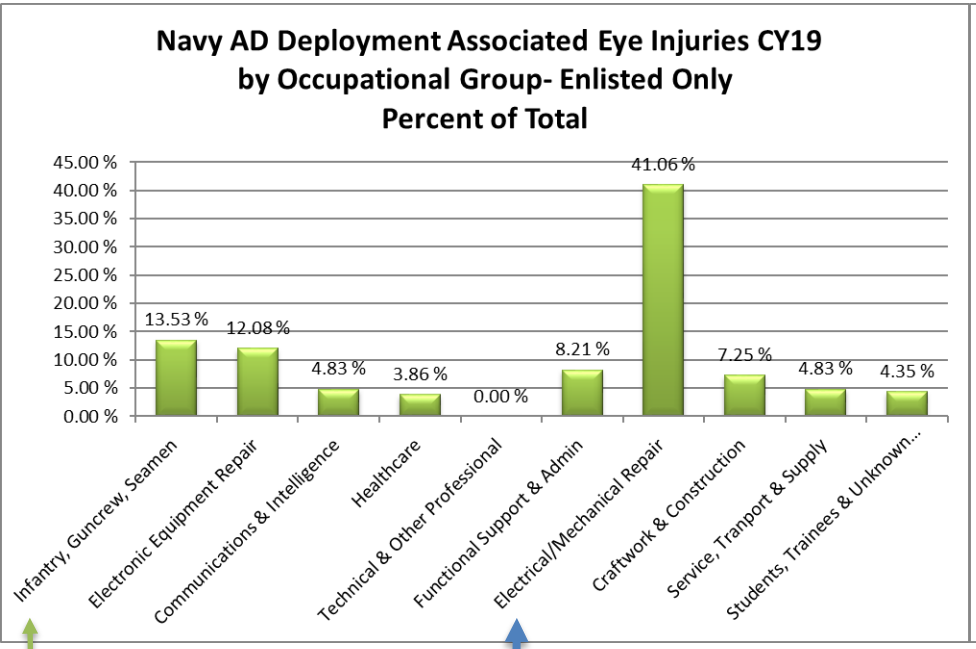
Navy & Marine Corps – Eye Injuries

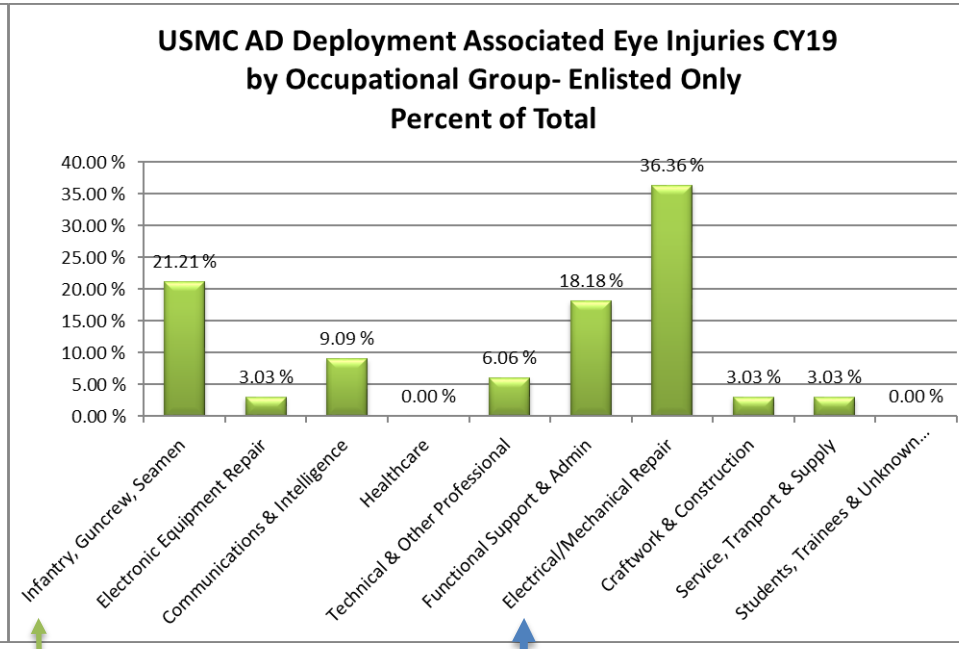




(Tri-Service Vision Conservation and Readiness Program, 2019)

Navy & Marine Corps – Deployment Associated Eye Injuries



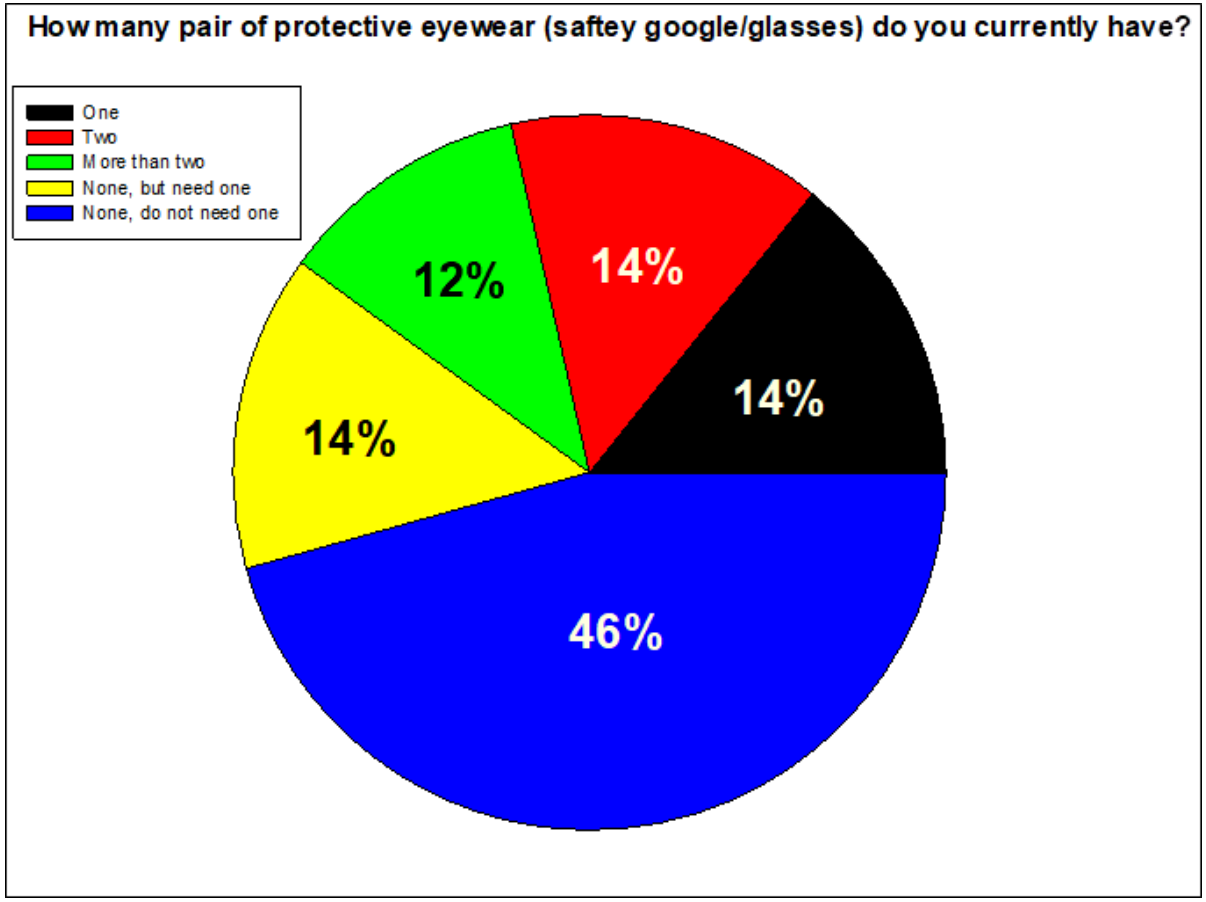


(Active Duty Annual Eye Injury Report, 2019)

Navy Protective Eyewear

Ship company survey (FY19):

- 14% of the sailors reported “no protective eyewear but need one”



Marine Corps MCEP

(Gao H, Clasing JE, Kang RN, Kinney MJ.,2020)

Intermediate-Tinted Lenses in Marksmanship Performance

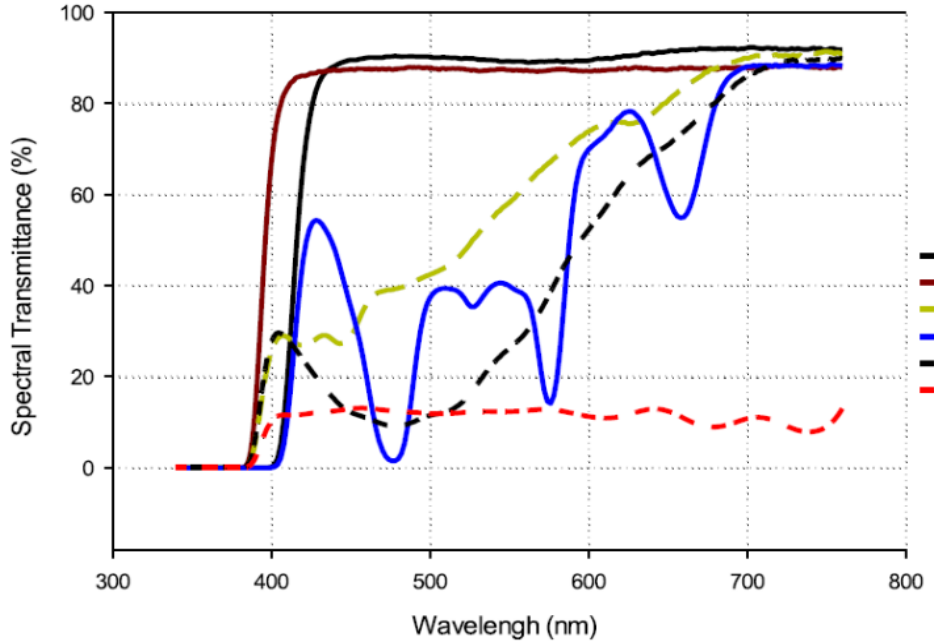


FIGURE 1. Spectral characteristics of Eye Safety Systems (ESS) Bronze, Oakley Prizm TR45, and ESS Copper lenses. Each showed unique spectral characteristics with visible light transmittance (VLT) between the standard issue clear (ESS Clear and Oakley Clear) and sun (ESS Smoke Gray) lenses. Each line represents a moving average of three randomly selected right lenses measured by Lambda 1050 UV/Vis/NIR spectrophotometer (PerkinElmer, USA). Light transmittance starts at 380 nm for ESS lenses and 400 nm for Oakley lenses, which indicates that Oakley lenses offer a slightly wider UV protection range.

Performance: Intermediate Tinted Lenses

Intermediate-Tinted Lenses in Marksmanship Performance

TABLE I. Visual and Pistol Marksmanship Performance of Intermediate-Tinted Lenses Expressed as Mean ± SD (ESS Clear Served as a Baseline for Comparison)

	ESS Clear (baseline) VLT 90%	ESS Bronze VLT 62%	Oakley Prizm TR45 VLT 44%	ESS Copper VLT 32%
Visual ACUITY—CSF ACUITY				
LogMAR	−0.016 (0.122)	0.001 (0.115)	0.018 (0.118)	0.030 (0.118)[a]
(Snellen equivalent)	(~20/19)	(~20/20)	(~20/21)	(~20/21)
Visual quality—AULCSF				
(log unit)	1.76 (0.26)	1.74 (0.27)	1.69 (0.24)[a]	1.66 (0.25)[a]
Pistol marksmanship				
(Z-score)[b]	0.12 (1.02)	0.04 (1.11)	−0.04 (0.87)	−0.13 (1.03)

[a]Post hoc test with Bonferroni correction: $P < .05$ relative to the baseline (ESS Clear).
[b]Z-score = (raw marksmanship scores per second−the group average)/the group SD.
Abbreviations: AULCSF = area under a log contrast sensitivity function; CSF = contrast sensitivity function; ESS = Eye Safety Systems; VLT = visible light transmittance; SD = standard deviation; and LogMAR = logarithm of the Minimum Angle of Resolution.

(Gao H, Clasing JE, Kang RN, Kinney MJ., 2020)

Vision Readiness- Military Optometry

- Vision Requirement
  - Service member has the minimum visual function to perform the appointed mission in a deployed environment
- Optical requirement
  - Service member has the required optical devices for deployment that correct his/her vision
- Vision record is current
  - Visual acuity
  - Rx
- Safety eyewear/MCEP are provided by each unit

Optical Inserts

GMI

UPLC

Naval Medical Research Unit Dayton

LCDR Adam Preston, OD, MHA, Ph.D, FAAO

04 JUN, 2021

Presenter

Adam Preston, OD, MHA, PhD, FAAO
Aerospace Optometrist
LCDR, MSC(AsO), USN

Department Head, Acceleration and Sensory Sciences
Naval Medical Research Unit Dayton
Wright-Patterson AFB, OH

LCDR Adam Preston, OD, PhD, FAAO

- NAMRU-Dayton APR 2021-Present
- AMO Training Pensacola, FL 2020-2021
- PhD Pacific University 2016-2020
- NBHC Bahrain 2014-2016
- NHC Quantico 2011-2013
- OD Pacific University 2007-2011
- BS Biology Ohio State - 2007
- Ohio Air National Guard 2002-2007

Disclosures

- Dr. Preston has no relevant financial or non-financial relationships to disclose relating to the content of this activity.
- The views expressed in this presentation are those of the presenter(s) and do not necessarily reflect the official policy or position of the Department of Defense, nor the U.S. Government.
- This continuing education activity is managed and accredited by the Defense Health Agency J-7 Continuing Education Program Office (DHA J-7 CEPO). DHA J-7 CEPO and all accrediting organizations do not support or endorse any product or service mentioned in this activity.
- DHA J-7 CEPO staff, as well as activity planners and reviewers have no relevant financial or non-financial interest to disclose.
- Commercial support was not received for this activity.

Learning Objectives

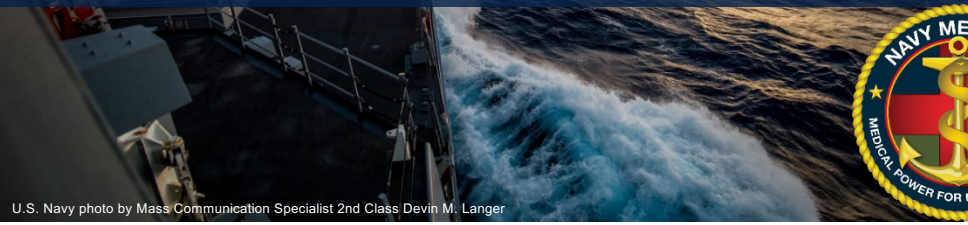
At the conclusion of this activity, participants will be able to:

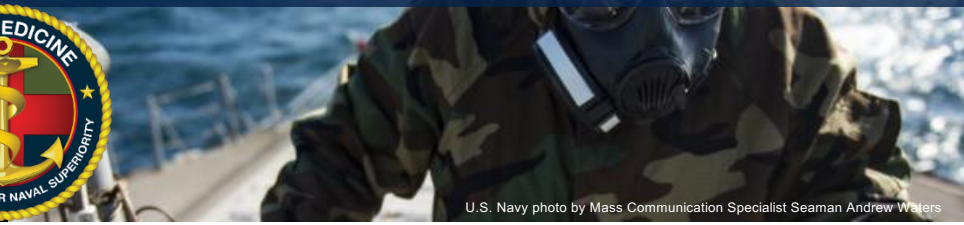
1. Outline the research capabilities of NAMRU-Dayton..
2. Know NAMRU-Dayton's role within the DON/DOD
3. Identify some of the recent and current vision-science projects ongoing at NAMRU-D.

NAVAL MEDICAL RESEARCH UNIT DAYTON
Aeromedical Research Programs

LCDR Adam Preston, Department Head, Acceleration and Sensory Sciences
NAVAL MEDICAL RESEARCH UNIT DAYTON

USNAC 2021



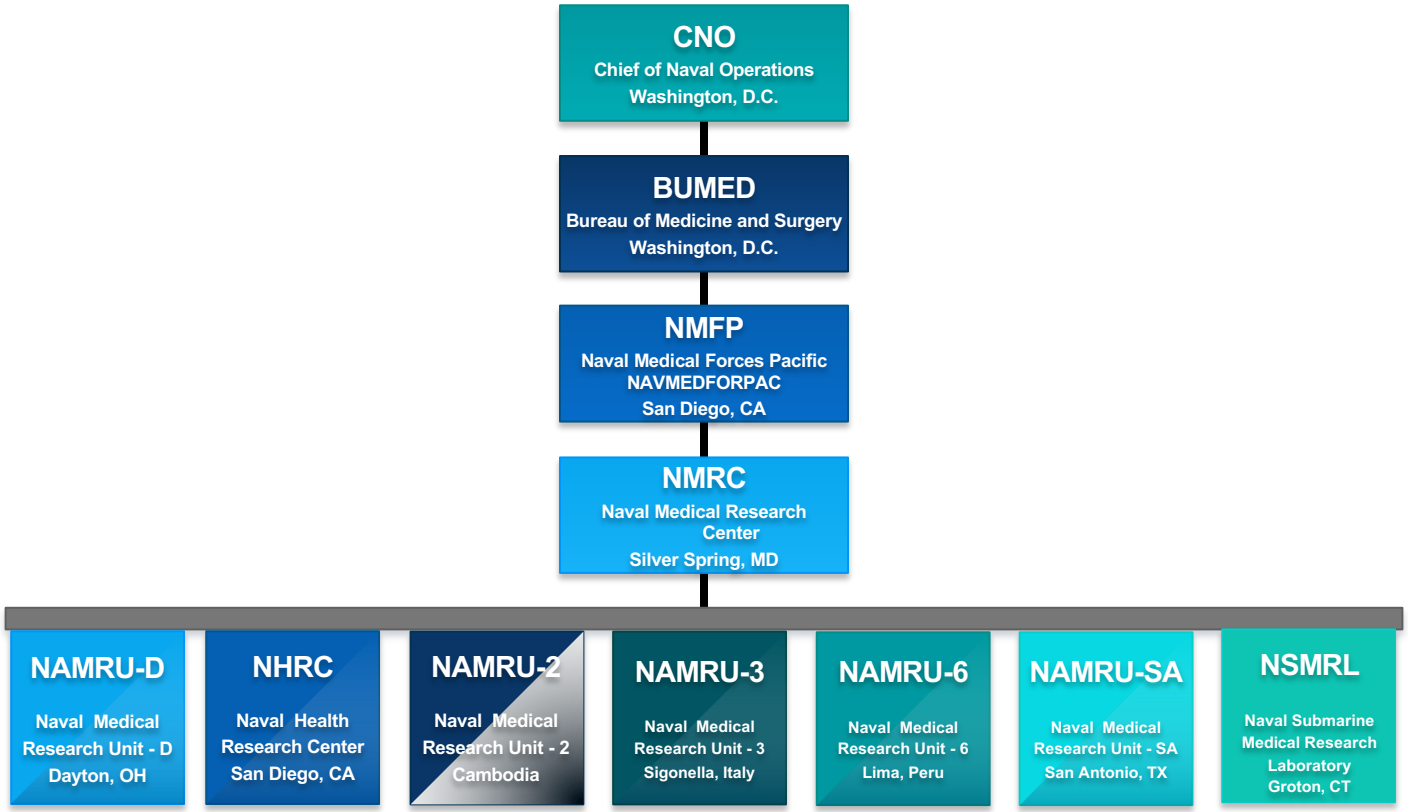


Legal Statements

Distribution
Distribution A: Approved for public release; distribution is unlimited.

Disclaimer
The views expressed in this article reflect the results of research conducted by the author and do not necessarily reflect the official policy or position of the Department of the Navy, Department of Defense, nor the United States Government.

Navy Medicine Research & Development



Navy Medicine Research & Development

NAMRU-D	NHRC	NAMRU-2	NAMRU-3	NAMRU-6	NAMRU-SA	NSMRL
Naval Medical Research Unit - D Dayton, OH	Naval Health Research Center San Diego, CA	Naval Medical Research Unit - 2 Cambodia	Naval Medical Research Unit - 3 Sigonella, Italy	Naval Medical Research Unit - 6 Lima, Peru	Naval Medical Research Unit - SA San Antonio, TX	Naval Submarine Medical Research Laboratory Groton, CT

NAMRU Dayton Mission & Vision

Mission

NAMRU Dayton protects and optimizes the readiness, performance, and survivability of the naval and joint warfighter by conducting operationally relevant environmental health effects, toxicology, and aerospace medical research.

Vision

NAMRU Dayton will be the premier environmental health effects, toxicology, and aerospace medical laboratory delivering world-class medical research in support of naval and joint warfighter superiority.

Naval Medical Research Unit Dayton

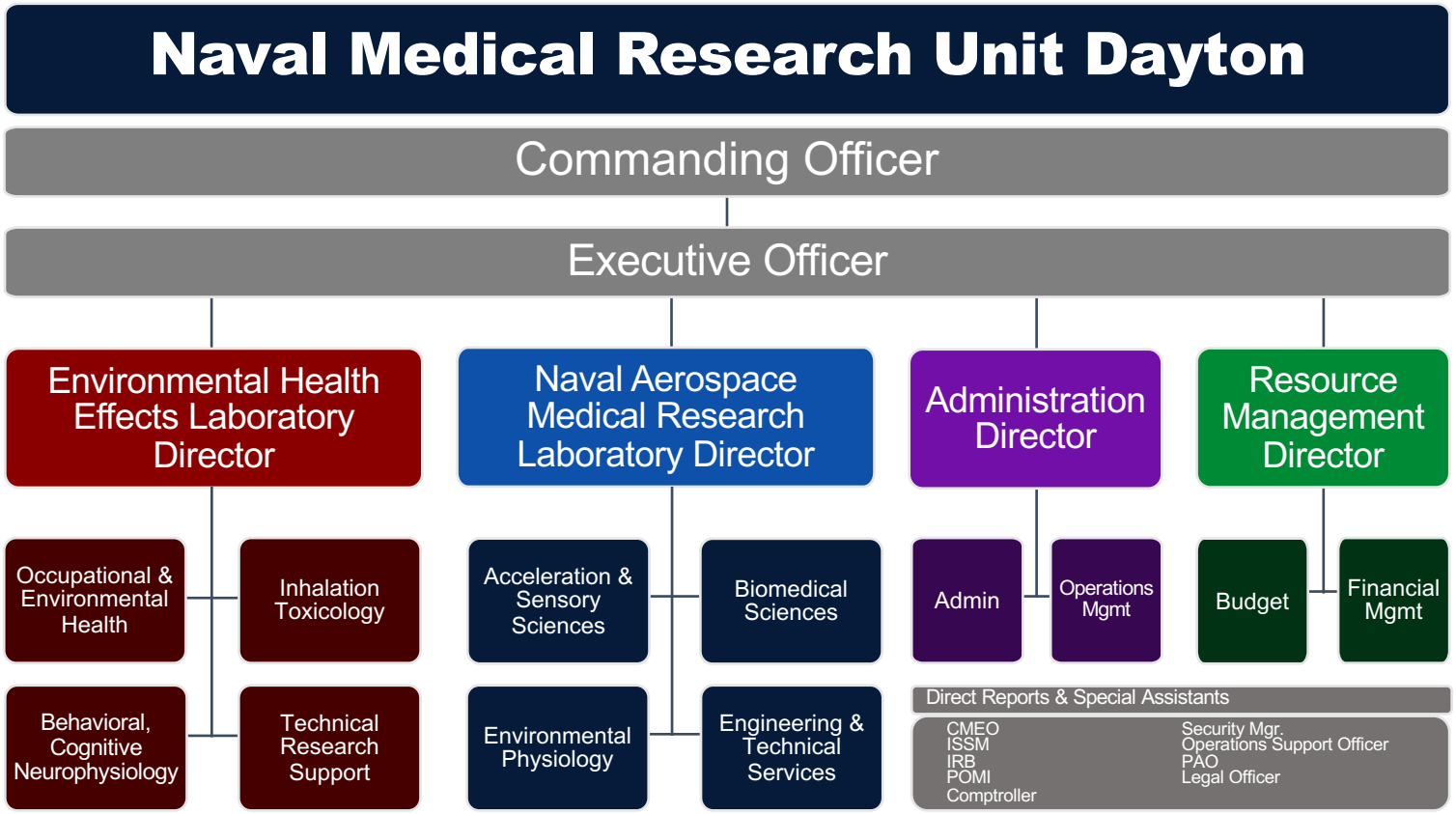
- **1 mission; 2 unique science labs**

Environmental Health Effects Laboratory

Naval Aerospace Medical Research Laboratory

- **2010 Command established at Wright-Patterson AFB & collocated with Air Force Research Laboratory**

Naval Medical Research Unit Dayton



Workforce

SPECIALTIES

SCIENTISTS & ENGINEERS

Behavioral & Cognitive Sciences
Engineering
Life Sciences
Math/Computer Science

OFFICERS

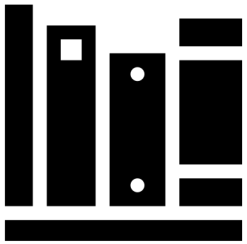
Medical Service Corps
Medical Corps
Veterinary Corps

MISSION ENABLING EXPERTISE

- Contracting
- Facilities
- Info Technology
- Institutional Animal Care and Use (Air Force)
- Institutional Review Board
- Resource Management
- Security

Collaborations and Partners

23
Cooperative Research and Development Agreements



3
Educational Partnership Agreements

28
Support Agreements

Environmental Health Effects Laboratory

Health effects of environmental hazards/stressors.

Chemical stressors

National Guard photo by Tech Sgt. Jorge Intriag

Physical stressors

U.S. Navy photo by MC3 Macadam Weissman/Released

Combinations/Co-stressors

U.S. Navy photo by Oliver Cole/Released

Environmental Health Effects Laboratory

Core Capabilities:

- *In vivo* exposures; unique expertise in inhalation toxicology
- *In vitro* exposures
- Determinations of health effects of exposure
  - General/gross tissue changes
  - Hematology & clinical chemistry
  - Ex vivo tissue analyses
  - Hearing testing
  - Microbiological/microbiome alterations
  - Chemical & analytical testing
  - Pulmonary assessments
  - Cognitive & behavioral testing
  - Neurophysiology evaluation
  - Reproductive & developmental effects
- Risk Assessment


U.S. Navy photo by PO3 Joseph C Boggio


U.S. Navy photo by Petty Officer 2nd Class Felicito Rustique/Released

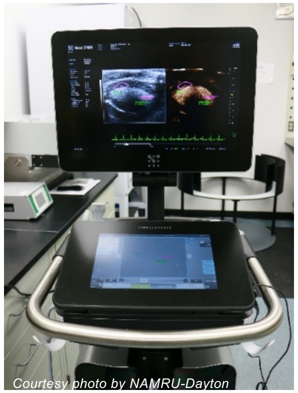
U.S. Navy photo by Mass Communication Specialist 3rd Class

Environmental Health Effects Laboratory

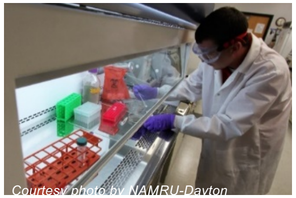
Science Facilities:

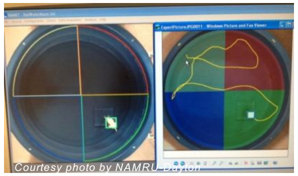
- Analytical/Chemistry
- Animal Exposure Facility
- Animal Hearing Assessment
- Animal Imaging
- Animal Pulmonary Assessment
- Cell/Tissue Culture (In vitro)
- Pre-clinical Assessment
- DoD Animal Facility (AFRL operated)
- Animal Behavioral/Cognition
- Neuroelectrophysiology
- Physical Performance
- Molecular Biology
- Rodent Centrifuge

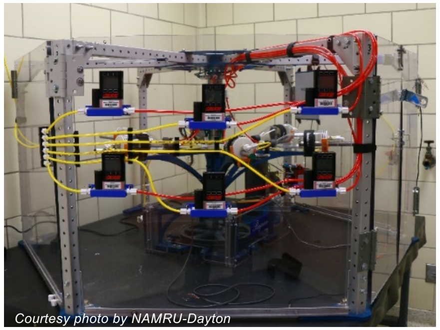

Courtesy photo by NAMRU-Dayton


Courtesy photo by NAMRU-Dayton


Courtesy photo by NAMRU-Dayton


Courtesy photo by NAMRU-Dayton


Courtesy photo by NAMRU-Dayton


Courtesy photo by NAMRU-Dayton

Naval Aerospace Medical Research Laboratory

Mitigate and prevent leading factors associated with aviation mishaps. Protect and enhance the health, readiness, and performance of aircrew.

Acceleration & Sensory Sciences

U.S. Navy photo by Mass Communication Specialist 3rd Class Wyatt L.

Biomedical Sciences


U.S. Navy photo by Mass Communication Specialist 3rd Chris Cavagnaro/Released

Environmental

Engineering & Technical Services


U.S. Navy photo by Mass Communication Specialist 2nd Class Z.A. Landers/Released

Naval Aerospace Medical Research Laboratory

Core Capabilities:

- Altitude effects
- Fatigue assessment & mitigation
- Acceleration & motion effects
- Motion sickness countermeasures
- Spatial disorientation mitigation
- Aircrew neck/back pain & injury
- Vision standards & performance
- Aviation personnel selection testing
- En route care

U.S. Navy photo by Mass Communication Specialist 3rd Class Justin Whitley/Released

U.S. Navy photo by MC1 Daniel Barker/Released

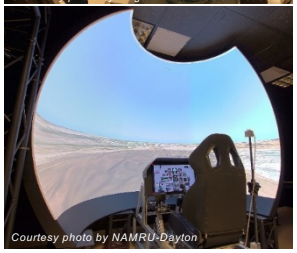
U.S. Navy photo by Mass Communication Specialist 1st Class Anderson C. Bomjardim/Released

Naval Aerospace Medical Research Laboratory

Science Facilities:

- Electroencephalography
- Fatigue Assessment & Countermeasures
- Fabrication Shop
- Human-rated Motion Platforms
- Hypoxia
- Mixed Reality Simulation
- MV-22 Osprey
- Physiologic Sensors
- Respiratory Physiology
- Spine Biodynamics
- Spatial Disorientation Simulator
- Vision Science
- Wet Lab


U.S. Navy photo by Megan Mudersbach/Released


Courtesy photo by NAMRU-Dayton


U.S. Navy photo by Megan Mudersbach/Released

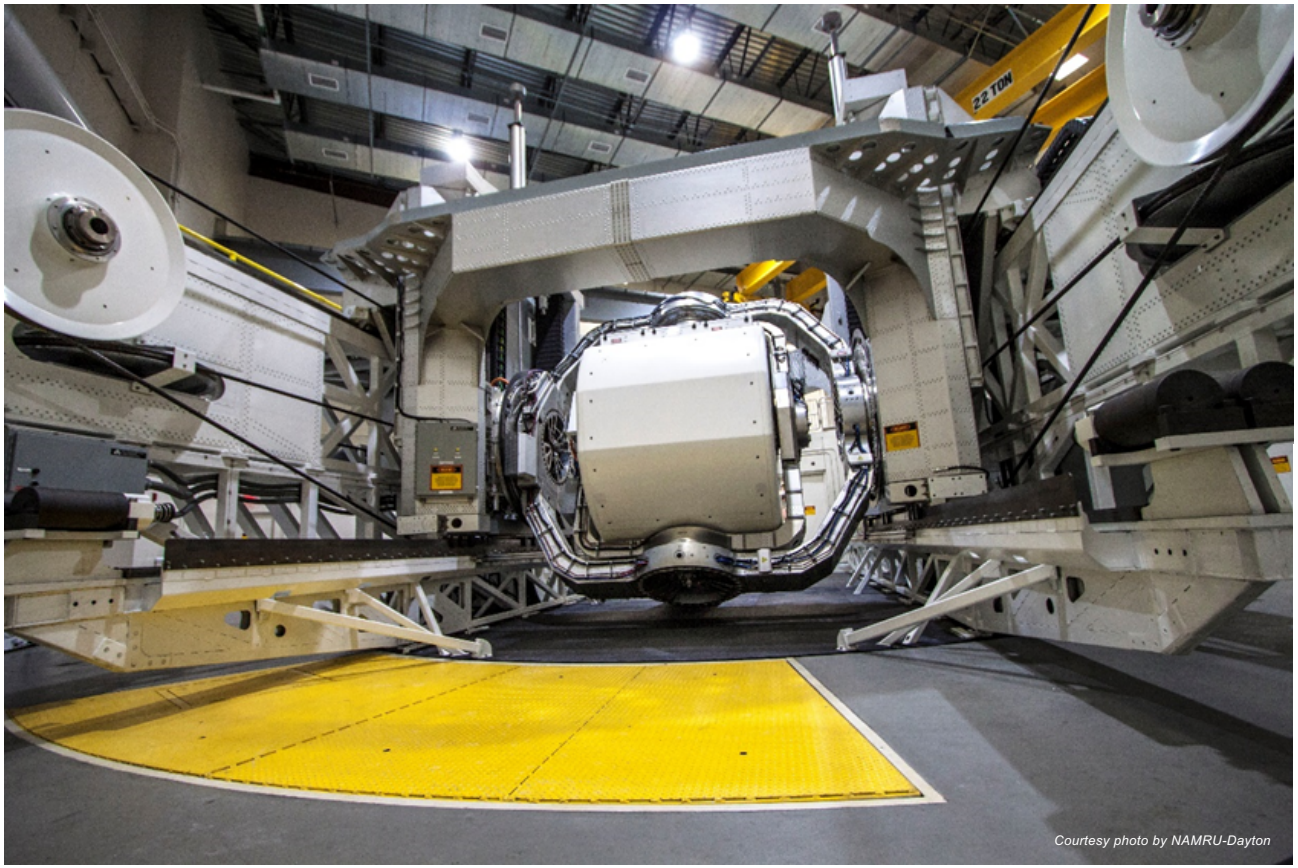

U.S. Navy photo by Megan Mudersbach/Released


Courtesy photo by ETC


U.S. Navy photo by Megan Mudersbach/Released

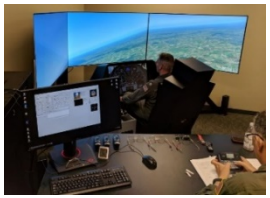

Courtesy photo by NAMRU-Dayton

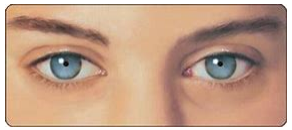
The Kraken



Applied Vision Science

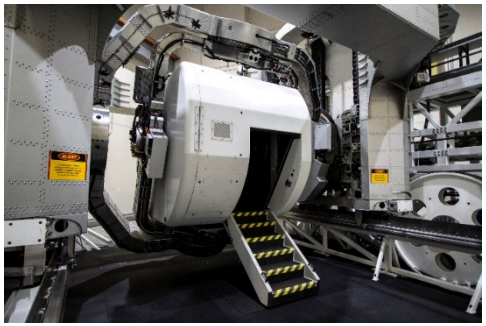
- **Monocular Reduced Vision in Pilot Performance**
  - Current policy: NPQ for DIFOPS if vision is mildly reduced in one eye
  - NAMRU-Dayton & NAMI effort to update USN/USMC waiver policy for mild reductions in one eye of visual acuity less than 20/20-0
- **Adaptive Display Technology to Mitigate Color Vision Anomalies**
  - Setting on MFD or HMD to adjust display colors to be more compatible with LEP or mild color vision deficiencies
  - Industry partner: Collins Aerospace
- **Evaluation of Laser-Induced Fluorescence as an Artifact of Dye-Polycarbonate Laser Eye Protection**
  - Study outcomes will supplement current USAF/AFRL psychophysical glare models
- **Impact of Low-level Weaponized Neurotoxin Exposure on Pilot Performance**
  - DTRA-funded minimal risk simulation studies using an FDA approved surrogate to safely induce miosis and accommodative spasm similar to GB nerve agents





Spatial Disorientation (SD) Projects

- ***Volitional Influences on Vestibular Perception***
  - **DRD (roll axis)**: Comparison of perception of vertical under subject-controlled or experimenter-controlled motion
  - Incorporate body and head motion with and without feedback
  - Data collection to begin Summer 2021



- ***Visuospatial attentional training and SD mitigation***
  - **Fixed-base flight simulator**: Develop and validate a training paradigm to improve attention allocation during periods of high mental workload to mitigate SD risk
  - Pilots fly scenarios designed to induce black hole and false horizon illusions
  - Data collection to begin Spring 2021

Spatial Disorientation (SD) Projects

- ***Effects of Hypoxia on SD Susceptibility***
  - **Fixed-Base Flight Simulator**: Pilots fly a series of maneuvers and unusual attitude recoveries in a degraded visual environment
  - Compare performance in normoxic and hypoxic conditions
  - 12 of 20 participants complete

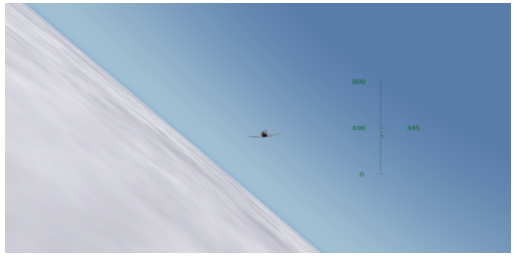
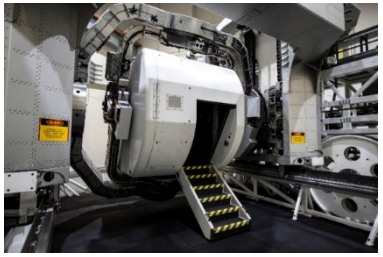




Photo Source: NAMRU-Dayton

- ***SD Modeling: Workload & Motion as Contributing Factors***
  - **DRD 6 DOF + Planetary**: Pilots flew a series of maneuvers in a degraded visual environment
  - Compared performance in 3 cockpit workload conditions, with and without flight-realistic motion
  - Variable Following Distance Task resulted in 2X increase in CREs
  - Motion increased realism ratings from 4.0 to 7.6 (10 point scale).

Spatial Disorientation (SD) Projects

- ***HMD Symbology & Spatial Audio Cueing for SD Prevention***
  - **<u>In-Flight Study</u>**: Compared 3 HMD symbology formats, with/without spatial-audio attitude-cueing
  - F-35 representative, Gen IV OLED HMD
  - Military pilots flew air-to-air search & track task
  - Data collection complete; analyses underway

Photo Source: University of Iowa Operator Performance Lab

Naval Air Warfare Center Aircraft Division

LCDR Micah Kinney, OD, Ph.D, FAAO
04 JUN, 2021

Approved for public release; distribution unlimited.

Presenter

Micah Kinney, OD, PhD, FAAO

Aerospace Optometrist

LCDR, MSC(AsO), USN

Project Officer, Human Systems Engineering

Naval Air Warfare Center Aircraft Division

NAS Patuxent River, MD

LCDR Micah Kinney, OD, PhD, FAAO

Photo courtesy of LCDR Micah Kinney

- Aerospace Research Optometrist at NAWC-AD 2020-Present
- NAMRU-D 2017-2020
- NAMI 2016-2017
- DUINS PhD at UAB 2013-2016
- NAS Oceana 2010-2013
- OD from UAB 2010

Disclosures

- Dr. Micah Kinney has no relevant financial or non-financial relationships to disclose relating to the content of this activity.
- The views expressed in this presentation are those of the presenter and do not necessarily reflect the official policy or position of the Department of Defense, nor the U.S. Government.
- This continuing education activity is managed and accredited by the Defense Health Agency J7 Continuing Education Program Office (DHA J-7 CEPO). DHA J-7 CEPO and all accrediting organizations do not support or endorse any product or service mentioned in this activity.
- DHA J-7 CEPO staff, as well as activity planners and reviewers have no relevant financial or non-financial interest to disclose.
- Commercial support was not received for this activity.

Learning Objectives

At the conclusion of this activity, participants will be able to:

1. Comprehend how optometry is enabling the US Naval Aviation Enterprise.
2. Generate a familiarity with human systems engineering and how optometry fits within that domain.
3. Discover how vision science is critical to warfighter performance.

Navy Aerospace Optometry: Supporting the Fleet

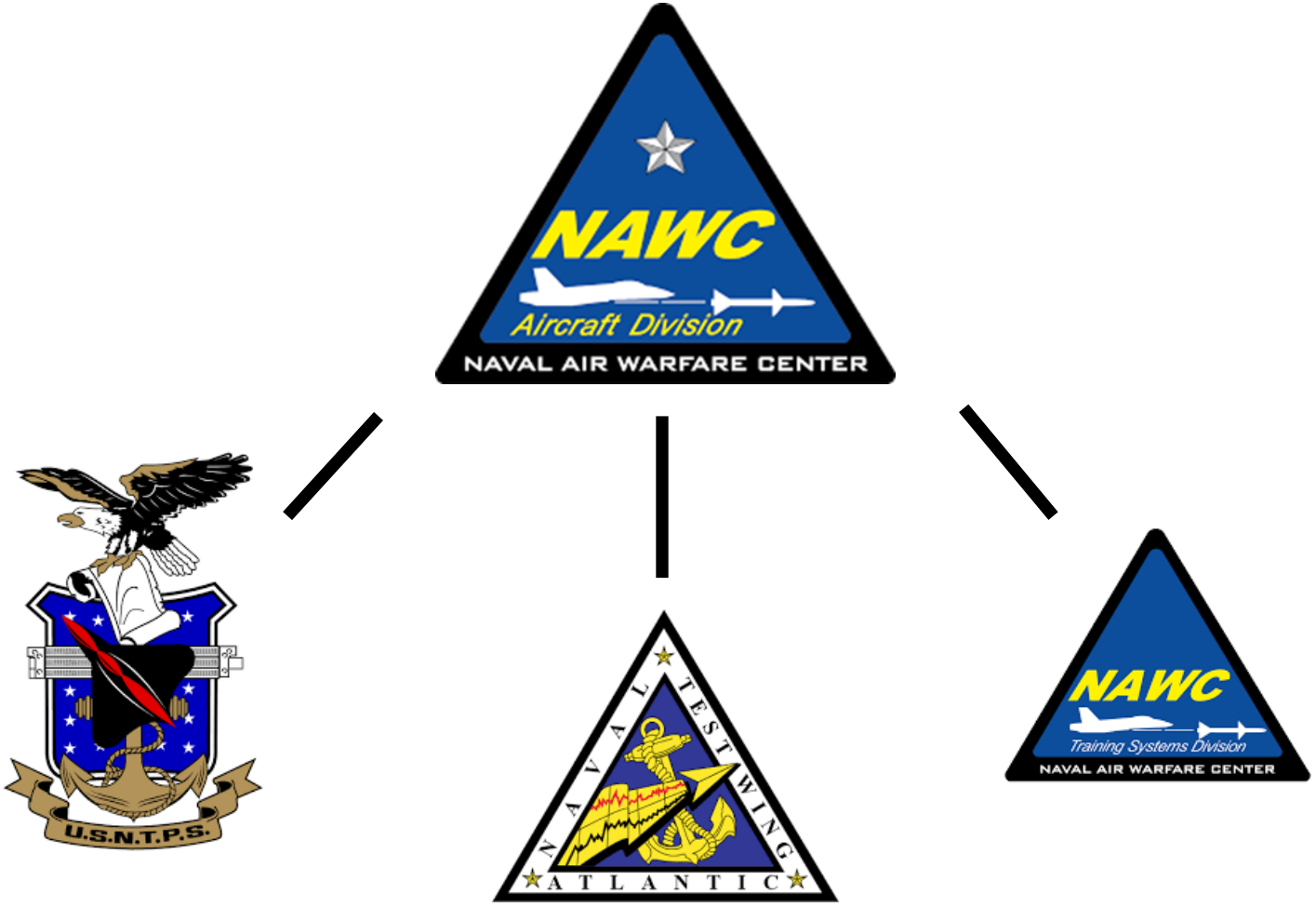
5 June 2021

Presented to: Navy Operational Optometry Conference

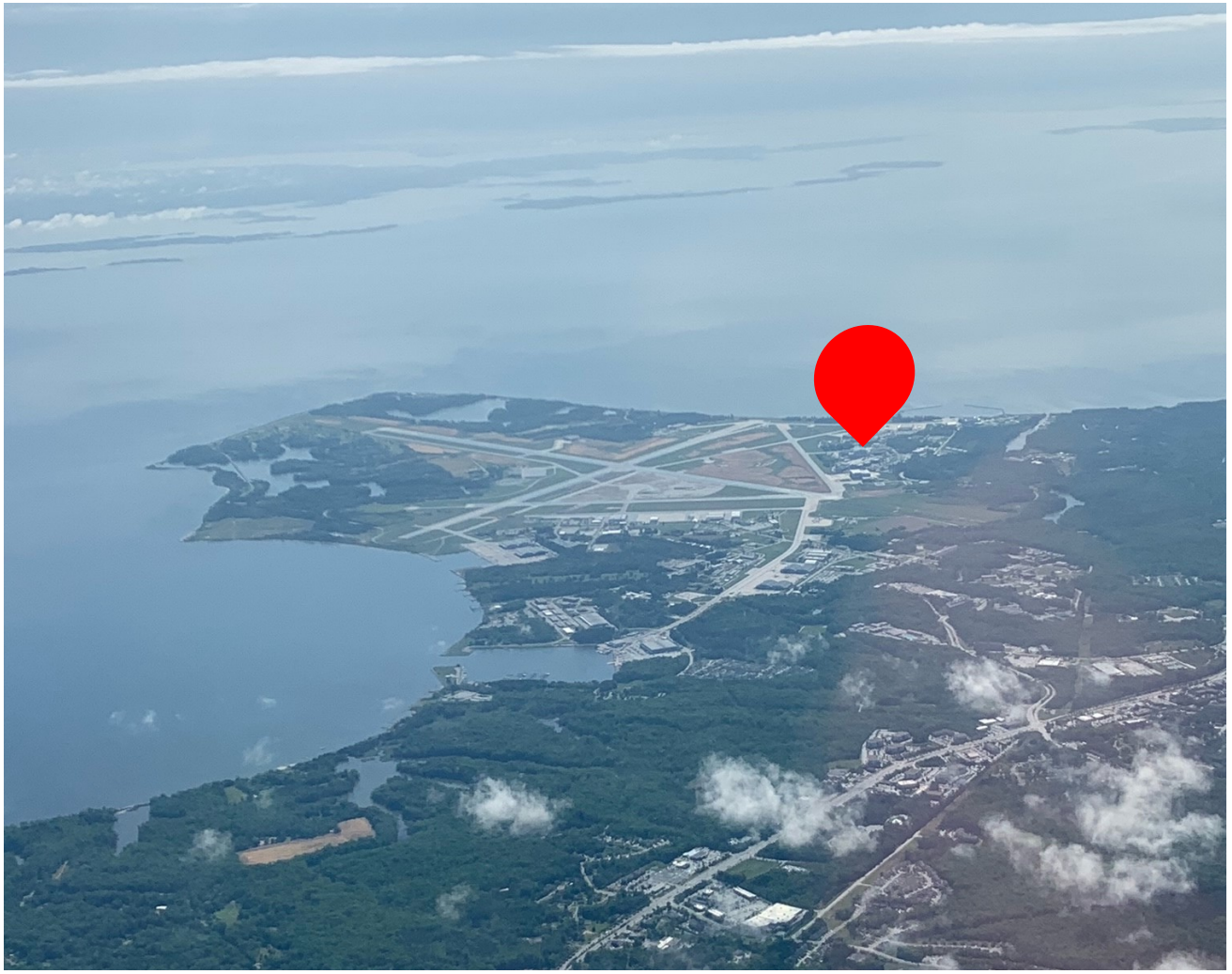
Presented by: LCDR Micah Kinney

Naval Air Warfare Center Aircraft Division

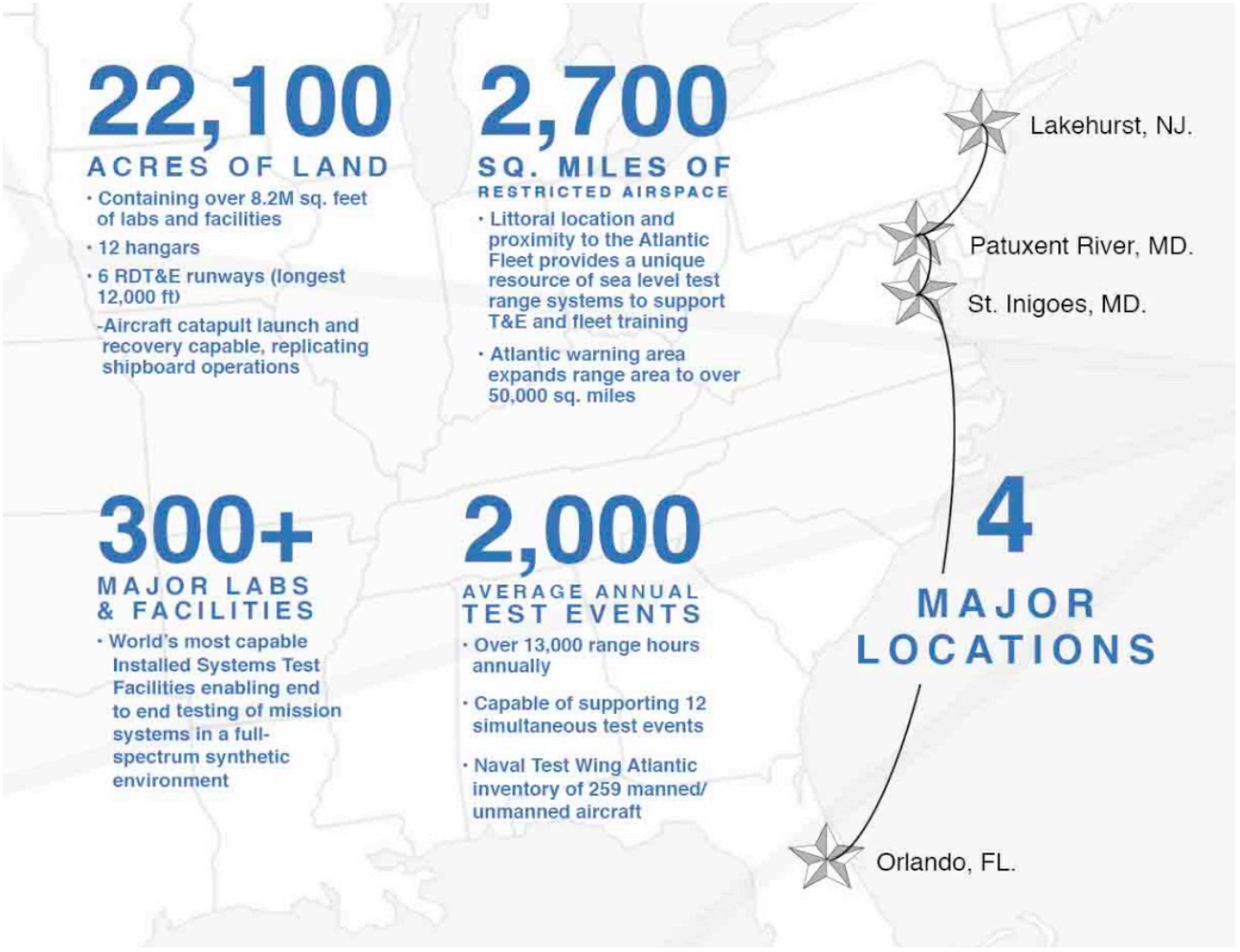
Naval Air Warfare Center Aircraft Division



NAS Patuxent River



Naval Air Warfare Center Aircraft Division



Naval Air Warfare Center Aircraft Division

AT AT GLANCE: WHAT WE DO & WHAT WE HAVE

RDT&E AND LIFECYCLE SUSTAINMENT


Aircraft Launch & Recovery


Air Vehicle Engineering


Air Vehicle Modification & Instrumentation


Avionics


Human Systems


Integrated Battlespace Simulation & Test


Propulsion & Power


Manned & Unmanned Aircraft Systems and Flight Test


Warfare Analysis

FACILITIES


300+ Labs


Manned Flight Simulator


Anechoic Chamber & Facility Antenna RCS Measurement


Joint Simulation Environment


Surface/Aviation Interoperability Lab


Electromagnetic Pulse Facility


Atlantic Test Ranges


Naval Test Wing Atlantic


U.S. Naval Test Pilot School

Human Systems Engineering

FY20 New Aeromedical Billets

- Aeromedical Monitoring and Analysis Branch
  - 6 new billets
    - Branch Head
    - Flight Surgeon
    - Audiologist
    - Research Physiologist
    - Aerospace Experimental Psychologist
    - Aerospace Research Optometrist **

First U.S. Navy Optometry Fleet Billet

Human Systems Engineering

- Aeromedical Monitoring and Analysis Branch
  - Physiological Episodes
  - Human Performance in Environmental Extremes
  - Operator Monitoring
- Electro-Optics Branch
  - Laser Eye Protection
  - Night Vision Systems
  - Helmet Mounted Displays
  - Eye Protection
  - Displays
  - VR/AR

QUESTIONS?

Key Takeaways

- Eye protection and the prevention of ocular injuries are critical to the warfighter mission
- Vision is a key component to spatial orientation
- Navy Optometry actively supports the Naval Aviation Enterprise both clinically and with applied research.

References

Gao, H., Clasing, J. E., Kang, R. N., & Kinney, M. J. (2020). Effects of Intermediate-Tinted Lenses on Pistol Marksmanship and Visual Performance. Military Medicine. http://www.doi.org/10.1093/milmed/usaa517

Tri-Service Vision Conservation and Readiness Program. (2019). Active Duty Annual Eye Injury Report.

U.S. Army Public Health Center. (2016). Health of the Force, Army Public Health Center, Military Combat Eye Protection: A Force Protection Success Story, 67-68. http://phc.amedd.army.mil/PHC%20Resource%20Library/2016HealthoftheForcereport.pdf

How to Obtain CE/CME Credits

To receive CE/CME credit, you must register by 1000 ET on 5 June 2021 to qualify for the receipt of CE/CME credit or certificate of attendance. You must complete the program posttest and evaluation before collecting your certificate. The posttest and evaluation will be available through 18 June 2021 at 2359 ET. Please complete the following steps to obtain CE/CME credit:

1. Go to URL https://www.dhaj7-cepo.com/
2. Search for your course using the **Catalog**, **Calendar**, or **Find a course** search tool.
3. Click on the REGISTER/TAKE COURSE tab.
   a. If you have previously used the CEPO CMS, click login.
   b. If you have not previously used the CEPO CMS click register to create a new account.
4. Follow the onscreen prompts to complete the post-activity assessments:
   a. Read the Accreditation Statement
   b. Complete the Evaluation
   c. Take the Posttest
5. After completing the posttest at 80% or above, your certificate will be available for print or download.
6. You can return to the site at any time in the future to print your certificate and transcripts at https://www.dhaj7-cepo.com/
7. If you require further support, please contact us at dha.ncr.j7.mbx.cepo-cms-support@mail.mil