



## Psychological Effects of the Long War and Mitigation and Treatment

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Sciences

#### **Objectives**

- Know the symptoms of PTSD and other psychological effects of war
- Learn about both evidence based and new and innovative forms of treatment
- Understand how to reduce barriers to care, including negative side-effects of treatment.

#### OUTLINE

- Background and History
- 2. 9/11 at the Pentagon
- 3. Post-Traumatic Stress Disorder
- 4. Therapies for PTSD
  - 1. Including dogs!

- 5. Suicide in the US Army6. Mefloquine (Lariam)7. Emerging strategies to Care for veterans
- 8. Women at War
- 9. Discussion



#### A Brief History of Psychological Reactions to War

- World War I--"shell shock", over evacuation led to chronic psychiatric conditions
- World War II--ineffective pre-screening, "battle fatigue", lessons relearned, 3 hots and a cot
- The Korean War---initial high rates of psychiatric casualties, then dramatic decrease

Principles of "PIES" (proximity, immediacy, expectancy, simplicity)



### A Brief History of Psychological Reactions to War

- Vietnam War 1960s
  - Drug and alcohol use, misconduct
  - Post Traumatic Stress Disorder not yet defined
- Desert Storm/Shield
  - "Persian Gulf illnesses", medically unexplained physical symptoms
- Operations Other than War (OOTW)
  - Combat and Operational Stress Control, routine front line mental health treatment



#### 9/11/2001 in Washington DC

- Beautiful clear fall day
- New York attack
- Pentagon burning
- Reports of bombs elsewhere
- Are We at War?





#### **Combat Stress Control Principles Applied**

- Proximity, Immediacy, Expectancy. Simplicity
- DiLorenzo Medical Clinic at the Pentagon
  - Army, Air Force, Navy personnel operations for medical and mental health services
- Groups
  - People more open to talk in workplace or at 'coffee rounds"





# Development of A Sustained Response

- Family Assistance Center
- Operation Solace





### The Pentagon Family Assistance Center

- Tended to families of all victims
- The Sheraton in Crystal City
  - Extended family, children
  - Most lived there for up to a month
- Services
  - Informational briefings
  - Red Cross
  - Department of Justice, FBI
  - Counseling
  - Childcare
    - recreation
  - Medical care
  - DNA collection





**The Pentagon Memorial at the Dedication** 

-

# Operation Enduring Freedom/ Operation Iraqi Freedom/Operation New

Dawn

- Numerous stressors
  - Multiple and extended deployments
  - Battlefield stressors
    - IEDs, ambushes, severe sleep deprivation,
  - Medical
    - Severely wounded Soldiers, injured children, detainees
- Changing sense of mission
- Strong support of American people for Soldiers
- Major Focus of senior US Army Staff
- Numerous new programs developed to support Soldiers and Families

#### The US Army since 9/11

- Volunteer Army
  - Know they are going to war
  - Seasoned, fatigued
  - Large Reserve Component
  - Reserve, National Guard
- Elevated suicide rate
- Wounded Soldiers
- Effects on Families
  - Continuous deployments
  - Families of deceased
  - Families of wounded
- Difficult Economy
  - Recruiting easier



#### Range of Deployment-Related Stress Reactions

- Mild to moderate
  - Combat Stress and Operational Stress Reactions (Acute)
  - Post-traumatic stress (PTS) or disorder (PTSD)
  - Symptoms such as irritability, bad dreams, sleeplessness
  - Family / Relationship / Behavioral difficulties
  - Alcohol abuse
  - "Compassion fatigue" or provider fatigue
  - Suicidal behaviors
- Moderate to severe
  - Increased risk taking behavior leading to accidents
  - Depression
  - Alcohol dependence
  - Completed suicides



#### PTSD DSM IV Diagnostic Concept

- Traumatic experience leads to:
  - Threat of death/serious injury
  - Intense fear, helplessness or horror
- Symptoms (3 main types)
  - Reexperiencing the trauma (flashbacks, intrusive thoughts)
  - Numbing & avoidance (social isolation)
  - Physiologic arousal ("fight or flight")
- Which may cause impairment in
  - Social or occupational functioning
- Persistence of symptoms

mTBI (mild Traumatic Brain injury) may be associated with PTSD, especially in the context of Blast or other weapons injury



#### **DSM 5 Definition of PTSD**

- Removes Criterion A-2
- Additional criteria
  - Somatic reactions
  - Sleep
  - Depressive symptoms
  - Anger and irritability



#### **Evidence Based Approaches for PTSD**

- Psychotherapy
  - Cognitive behavioral therapy
    - Cognitive processing therapy
  - Prolonged exposure
- Pharmacotherapy
  - Selective Serotonin Re-uptake Inhibitors (SSRIs)

Problem: Soldiers do not like these approaches



EMDR (eye-movement desensitization) is also considered evidence-based

#### **Psychotherapy**

- "Manualized" therapies have been shown effective in research trials.
  - Cognitive behavioral therapy (and a variant called cognitive processing therapy)
  - Prolonged exposure.
- CPT and PE usually delivered by psychologists and social workers.
- Available in military and Veteran's Affairs settings, less so in the civilian setting.
- "Virtual reality".
  - self-administered via computer.
  - "Virtual Iraq" is simulated.



#### **Pharmacotherapy**

- SSRIs sertaline (Zoloft) and paroxetine (Paxil)
  - Only these two are FDA approved.
- Other SSRIs are commonly used for PTSD.
- Bupropion (Wellbutrin) is often well tolerated without the weight gain. It helps reverse sexual side-effects.
- Second generation (atypical) anti-psychotics are often used as augmentation both for depression and PTSD
  - While politically controversial, clinicians find low doses useful.
  - quetiapine (Seroquel) is commonly used for trauma induced nightmares at low doses of 25 to 50 mgs.
  - However these medications may cause unacceptable weight gain, so use sparingly.
- Prazosin (Minipress), a blood pressure medication, is used to decrease nightmares.

#### **Sexual Health**

- May be compromised in PTSD, TBI, more severe injuries (amputations, genito-urinary injuries)
  - Bomb signature weapon of the war
- Sexual side-effects are common with SSRIs
  - Anorgasmia, erectile dysfunction, ejaculatory delay,
  - consider bupropion daily or ciproheptadine (Periactin) prn
- Needs to be discussed by primary care, mental health

Phosphodiasterase inhibitors (Viagra, Cialis,

Levitra) useful

#### Sleep medications

- Insomnia is extremely common in PTSD.
- Improving sleep is critically important to recovery.
- Consider standard sleep medications,
  - Trazodone 50 to 100 mgs (warn re priapism).
  - Zolpidem (Ambien) 5-12.5 mg (warn about sleepwalking)
  - Eszopiclone (Lunesta) 1-3 mgs (warn about unpleasant taste)
  - Warn about interactions with alcohol, other sedating medications.
- Avoid benzodiazapines,
  - especially alprazolam (Xanax) because of the short half-life.



#### Clinical pearls

- The following are not yet FDA approved, but helpful strategies.
- If PTSD related anxiety, try propranolol (Inderal).
- Again quetiapine and prazosin are helpful to decrease nightmares.
- Combine medication, psychotherapy and innovative approaches.
- Focus on therapeutic alliance.



## New and Innovative Approaches

- Integrative therapies
  - Acupuncture
  - Stellate ganglion block
  - Yoga
  - Canine therapy
  - Mindfulness/meditation
  - Technology
    - Virtual reality





Common denominator: help to engage the patient

#### **Innovative Approaches**

- Anecdotally very helpful but not yet evidence based.
- Do not require the patient to talk
- Available at some military, veterans affairs but few civilian facilities.
- Acupuncture probably has the best evidence base for use in PTSD
- Stellate ganglion block is an anesthetic technique for pain, which seems to relieve PTSD symptoms.
- Other strategies include
  - art therapy
  - yoga
  - marital arts
  - exercise
  - meditation and/or mindfulness and
  - canine therapy
  - fish oil (omega three fatty acids)



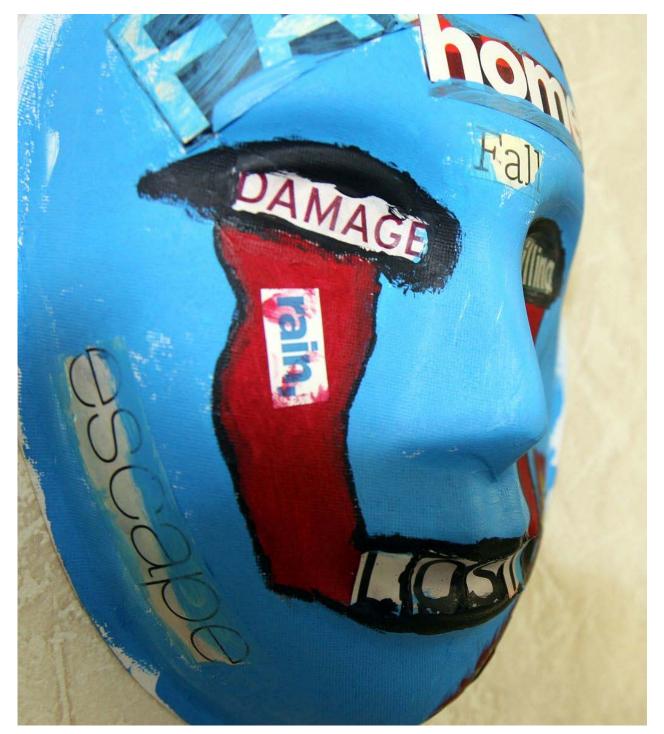
# How training service dogs addresses PTSD symptoms

Training dog as biofeedback

#### PTSD Symptom Clusters

- Re-experiencing (B)
- Avoidance and Numbing (C)
- Increased Arousal (D)





http://en.wikipedia.org/wiki/Posttraumatic\_stress\_disorder

#### **Co-morbidities**

- The following are all very common with PTSD:
  - substance use
  - depression
  - TBI
  - physical injuries
  - pain
  - unemployment and
  - homelessness.



#### **Traumatic Brain Injury**

- Signature wound of Operations Enduring and Iraqi Freedom (OEF/OIF)
- "Invisible Wound"
- 80% of TBIs are rated as "mild" in severity
- mTBI = concussion
  - Brief Loss of Consciousness or Alteration of Consciousness
  - Brief, if any, period of amnesia
  - Expectation of rapid and full recovery



#### What is TBI?

- Traumatic brain injury (TBI) is a disruption of function in the brain resulting from a blow or jolt to the head or penetrating head injury.
- TBI can be caused by:
  - Falls
  - Motor vehicle and motorcycle crashes
  - Assaults
  - Explosions
  - Sports injuries
- Mild to severe
- Mild TBI=concussion
- Even mild TBIs may have long lasting side effects



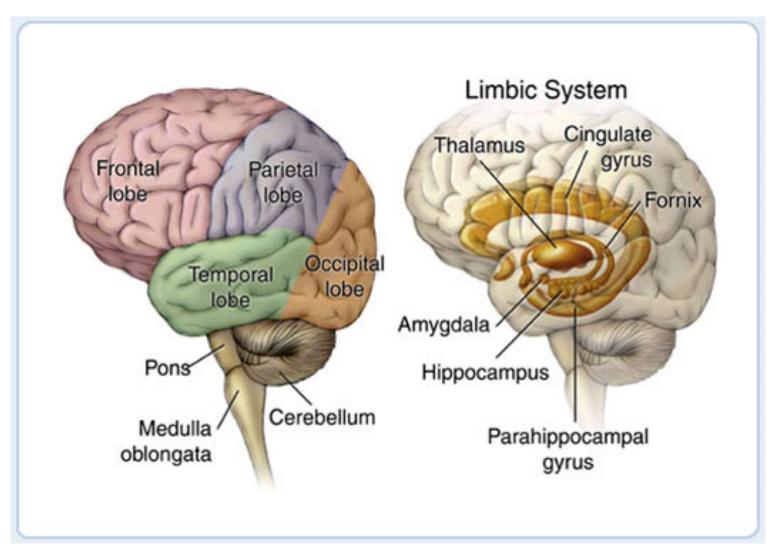
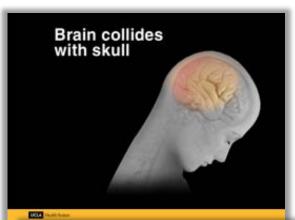


Illustration provided courtesy of Alzheimer's Disease Research, a program of the American Health Assistance Foundation. © 2012 http://www.ahaf.org/alzheimers/about/understanding/anatomy-of-the-brain.html

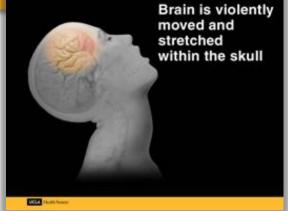
#### Traumatic Brain Injury (TBI)....















#### **Behavioral Aspects of TBI**

Changes in cognitive abilities

Poor impulse control

Acting out behavior



http://en.wikipedia.org/wiki/2009\_Fort\_Hood\_shooting

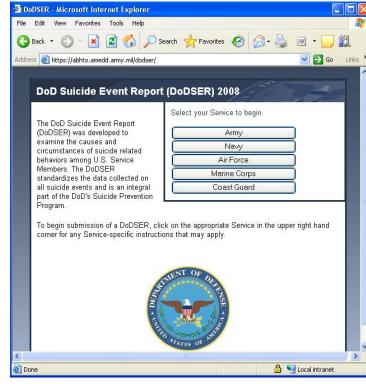
#### Risk Factors for Suicide in Army Personnel

- Major Psychiatric Illness Not a Significant Contributor
  - Adjustment disorders, substance abuse common
- Relationships
- Legal/Occupational Problems
- Substance Abuse
- Pain/Disability
- Weapons
  - 70% with firearm
- Recent Trends
  - Older, higher rank, more females



### Screening and Surveillance The DoD Suicide Event Report

- The Department of Defense implemented the DoD Suicide Event Report (DoDSER) based on the Army Suicide Event Report (ASER), which was validated by the U.S. Army Medical Research and Materiel Command.
- DoDSERs are submitted for suicide behaviors that result in death, hospitalization or evacuation from theater.
- Data collected from standardized records (e.g., medical records, CID).
- Army DoDSERs due w/in 60-days.
- Objective, detailed, and standardized information collected:
- Comprehensive data (method, location, fatality)
  - Extensive risk factor data
    - Dispositional or personal
    - Historical or developmental
    - Contextual or situational
    - Clinical or symptom factors



#### **Past Suicide Mitigation Approaches**

- Analysis of Incident Suicides
  - DOD Suicide Event Report (DODSER)
  - Epidemiologic Consultations (EPICONS)
- Clinical interventions to identify and treat high risk individuals

Training Soldiers, Leaders and Family Members to recognize and

respond

- ASSIST
- ACE
- Battlemind
- Beyond the Front
- Stand-Down Training



Ask your buddy · Have the courage to ask the question, but stay calm · Ask the question directly, e.g. Are you thinking of killing yourself? Care for your buddy · Remove any means that could be used for self-injury · Calmly control the situation; do not use force · Actively listen to produce relief Escort your buddy · Never leave your buddy alone . Escort to the chain of command, a Chaplain, a behavioral health professional, or a primary care provider

### **Screening and Surveillance Annual and Post Deployment Screens**

- The Department of Defense has mandated annual and postdeployment screening for PTSD and depression
  - Post-deployment Health Assessment (PDHA): Conducted within 30 days of service members returning from deployment (begun 1998, s/p first Gulf War)
  - Post-deployment Health Re-assessment (PDHRA): Conducted within 3-6 months for service members returning from deployment (began 2005 in Army)
  - Periodic Health Assessment (PHA): Conducted annually (2009)
- Screening is based on an interview with a behavioral health care provider using a standardized interview guide. Service members at risk will received immediate intervention or a mental health referral.



## **Suicide Risk Assessment**

- Improve suicide assessment and evaluation (primary care, behavioral health clinic, VA).
- Train behavioral health and medical care providers at all levels
- Improve engagement and retention in behavioral health care employing motivational interviewing techniques.
- Involve close family members and friends where ever possible.
- Inform and educate unit leaders as appropriate.
- Enhanced focus on postvention efforts (maintain vigilance post crisis), including cases of completed suicides.



# Factors Associated with Physical Aggression Among U.S. Army Soldiers

Surveys collected six months post-deployment measuring overt aggressive behavior

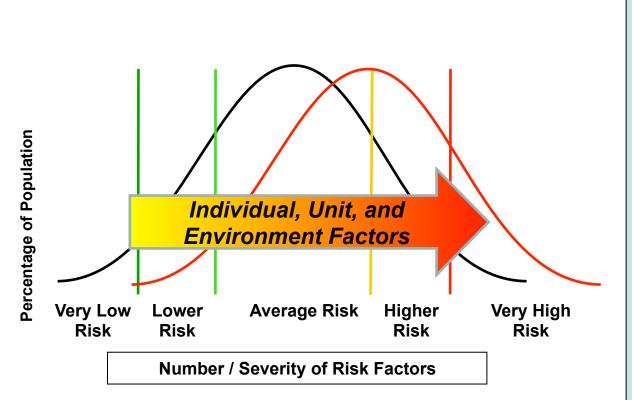
Aggressive behavior associated with:

- highest level of combat intensity
- misuse of alcohol
- diagnosis of PTSD
- diagnosis of TBI
- prior altercation w/significant other
- lower rank (E1-E4)



### **Causal Factors for Violence Among Soldiers**

•Multiple individual, unit, and community factors appear to have converged to shift the population risk to the right



#### **Facts**

#### Individual

- Criminality/Misconduct
- Alcohol / Drugs
- BH Issues (untreated/under-treated)

#### Unit

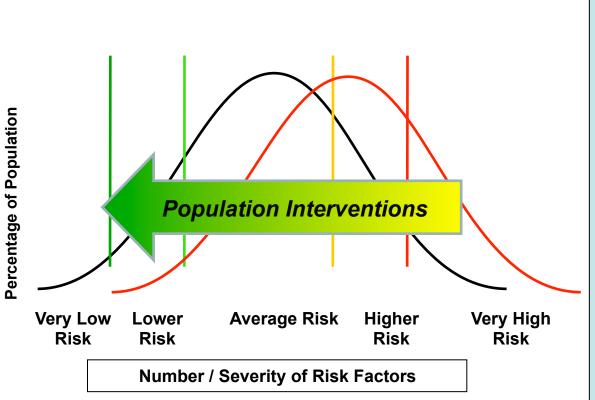
- Turnover
- Leadership (Stigma)
- Training / Skills

#### **Environment**

- Turbulence
- Family Stress / Deployment
- Community
- Stigma

### **Strategies to Decrease Violence**

- While it is important to identify and help individual Soldiers, the biggest impact will come from programs that shift the overall population risk back to the left
- Effective medical treatment can prevent individuals from increasing in risk or decrease their risk, but it cannot shift overall population risk very much



#### **Army Campaign Plan:**

- Health Promotion, Risk Reduction, and Suicide Prevention
- Increase Resiliency
- Decrease Alcohol/Drug Abuse
- Decrease Untreated/Undertreated BH
- Decrease Stigma to Seeking Care
- Decrease Relationship/Family Problems
- Decrease Legal/Financial Issues

#### Installation:

- Reintegration (Plus)
  - Mobile Behavioral Health Teams
  - Mental Toughness Training
  - Resiliency Training
  - Military Family Life Consultants
  - Decompression Reintegration
  - Warrior Adventure Quest
- Consistent Stigma Reduction themes

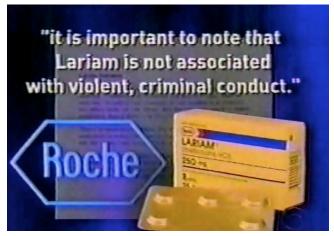


lasma drug levels. In a large study of tourists recarious prophylactic antimalarials, the rate of subjecorting adverse events on Lariam was similar to th ourists on chloroquine.

he most frequently reported adverse events are na omiting, dizziness or vertigo, loss of balance, head omnolence, sleep disorders (insomnia, abnormal drecose stools or distribute and abdominal pain.

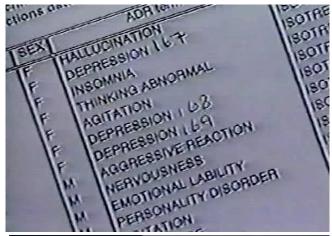
"...depression, hallucinations, psychotic or paranoid reactions...aggression..."

y, agitation, aggression, confusion, forgetfuln apairment, restlessness, sensory and motor neared cluding paresthesia), tinnitus and vestibular dis















Mefloquine may cause neuropsychiatric adverse reactions that can persist after mefloquine has been discontinued. Mefloquine should not be prescribed for prophylaxis in patients with major psychiatric disorders. During prophylactic use, if psychiatric or neurologic symptoms occur, the drug should be discontinued and an alternative medication should be substituted (see WARNINGS).

#### Psychiatric Adverse Reactions

Psychiatric symptoms ranging from anxiety, paranoia, and depression to hallucinations and psychotic behavior can occur with mefloquine use. Symptoms may occur early in the course of mefloquine use. In some cases, these symptoms have been reported to continue for months or years after mefloquine has been stopped. Cases of suicidal ideation and suicide have been reported. Mefloquine should not be prescribed for prophylaxis in patients with active depression, generalized anxiety disorder, psychosis, or schizophrenia or other major psychiatric disorders. Mefloquine should be used with caution in patients with a previous history of depression.

During prophylactic use, the occurrence of psychiatric symptoms such as acute anxiety, depression, restlessness or confusion suggest a risk for more serious psychiatric disturbances or neurologic adverse reactions. In these cases, the drug should be discontinued and an alternative medication should be substituted.

#### **Neurologic Adverse Reactions**

Neurologic symptoms such as dizziness or vertigo, tinnitus, and loss of balance have been reported. These adverse reactions may occur early in the course of mefloquine use and in some cases have been reported to continue for months or years after mefloquine has been stopped. Dizziness or vertigo, tinnitus, and loss of balance have been reported to be permanent in some cases. During prophylactic use, if neurologic symptoms occur, the drug should be discontinued and an alternative medication should be substituted.

The most frequently reported adverse events are nausea, vomiting, loose stools or diarrhea, abdominal pain, dizziness or vertigo, loss of balance, and neuropsychiatric events such as headache, somnolence, and sleep disorders (insomnia, abnormal dreams). These adverse reactions may occur early in the course of mefloquine use. It has been reported that dizziness or vertigo, tinnitus and hearing impairment, and loss of balance may continue for months after discontinuation of the drug and may be permanent in some cases.

More severe neuropsychiatric disorders have been reported such as: sensory and motor neuropathies (including paresthesia, tremor and ataxia), convulsions, agitation or restlessness, anxiety, depression, mood swings, panic attacks, memory impairment, confusion, hallucinations, aggression, psychotic or paranoid reactions and encephalopathy. Cases of suicidal ideation and suicide have been reported.



Available online at www.sciencedirect.com

#### **ScienceDirect**





## Acute and long-term psychiatric side effects of mefloquine: A follow-up on Danish adverse event reports



Åsa Ringqvist a,b,\*, Per Bech c,d, Birte Glenthøj d,e, Eskild Petersen f

**Table 5** Subjects' estimation of duration of physical symptoms, nightmares, cognitive dysfunction, and symptoms in response to mefloquine in the SCL-90-R. The study population consisted of 73 cases reported for adverse side effects to mefloquine.

	Cases indicating symptoms	1-2 days	3 days – 3 weeks	1—3 months	4-8 months	9 months — 3 years	Still symptoms
Nightmares	43	2	11	12	5	4	9
Cognitive dysfunction	42	2	10	7	3	6	14
SCL-90-R	68	2	18	12	6	13	17

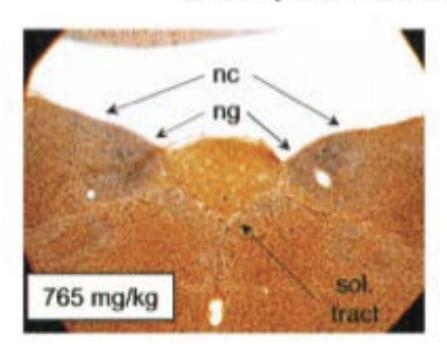
Ringqvist Å, Bech P, Glenthøj B, Petersen E: Acute and long-term psychiatric side effects of mefloquine: A Follow-up on Danish adverse event reports. Travel Med. 2015;13(1):80-88.

## Mefloquine Induces Dose-Related Neurological Effects in a Rat Model

G. Dow,<sup>1\*</sup> R. Bauman,<sup>2</sup> D. Caridha,<sup>1</sup> M. Cabezas,<sup>3</sup> F. Du,<sup>4</sup> R. Gomez-Lobo,<sup>3</sup> M. Park,<sup>2</sup> K. Smith,<sup>1</sup> and K. Cannard<sup>1</sup>

Divisions of Experimental Therapeutics, <sup>1</sup> Military Casualty Research, <sup>2</sup> and Psychiatry and Neuroscience, <sup>3</sup> Walter Reed Army Institute of Research, 503 Robert Grant Avenue, Silver Spring, Maryland, 20910, and FD Neurotechnologies, Inc., P.O. Box 785, Ellicott City, Maryland 21041<sup>4</sup>

Received 5 August 2005/Returned for modification 22 August 2005/Accepted 18 November 2005



"...It is also important to point out that the mefloquine-induced brain stem injury revealed by silver staining is permanent in nature...."

Dow G et al. Mefloquine induces dose-related neurological effects in a rat model. Antimicrob Agents Chemother. 2006 Mar;50(3): 1045-53.

## Time

Vivid Dreams, Malaise
Sleep Disturbance,
Nightmares, Personality
Change, Disinhibition,
"Anxiety,
Depression, Restlessness or
Confusion", Mania,
Psychosis, Disorientation,
Amnesia, Neurological
Symptoms

Chronic Neurological Symptoms, Behavioral, Mood, and Cognitive Changes

#### Psychiatric Side Effects of Mefloquine: Applications to Forensic Psychiatry

Elspeth Cameron Ritchie, MD, MPH, Jerald Block, MD, and Remington Lee Nevin, MD, MPH

Mefloquine (previously marketed in the United States as Lariam®) is an antimalarial medication with potent psychotropic potential. Severe psychiatric side effects due to mefloquine intoxication are well documented, including amorter, panic attacks, paranols, persecutory delusions, disociative psychosis, and anterograde amnesta. Exposure to the drug has been associated with acts of violence and suicide. In this article, we discuss the history of mefloquine use and describe plausible mechanisms of its psychotropic action. Mefloquine intoxication has not yet been successfully advanced in legal proceedings as a defense or as a midigating factor, but it appears likely that it eventually will be. Considerations for the application of claims of mefloquine intoxication in forensic settings are discussed.

J Am Acad Psychiatry Law 41:224-35, 2013

Mefloquine is a 4-quinolinemethanol antimalarial first synthesized in the early 1970s<sup>1</sup> by researchers affiliated with the United States military's Walter Reed Army Institute of Research (WRAIR).<sup>2</sup> The drug's development was the culmination of a 10-year drug discovery effort, during which time more than 300,000 compounds were screened for their antimalarial properties.<sup>2</sup> Of a handful of compounds active against chloroquine-resistant strains of Plasmodium falciparum malaria that demonstrated seemingly favorable toxicity profiles,<sup>2</sup> mefloquine (initially known as WR 142490) was selected for further development and testing in humans.<sup>3</sup>

To secure the drug's commercial manufacture and its continued availability, intellectual property rights and research related to melloquine were transferred at no cost to F. Hoffman-La Roche Ltd. (Roche).

Dr. Rinchie in Chief Medical Officer, Department of Mental Health, Datrice of Columbia Department of Health, Washington, D.C. Dr. Block is Medical Director, Department of Rural Mental Health, Pornland Veterans Affairs Medical Center, Portland, OR. Dr. Nevin is a decreased window in the Department of Mental Health, Johan Hopkins Bloomberg School of Public Health, Baltimore, Maryland, The views expressed air those of the authors alsons and do not necessarily reflect the views of the District of Columbia Department of Mental Health, the Department of Veterans Affairs, or the U.S. Gevernment. Address correspondence to: Elspeth Cameron Rinchie, MD, MPH, 699 H Server NE, Room 325, Washington, DC 20002, E-mail: elspeth.htmhe@de.gov.

Disclosures of financial or other potential conflicts of interest: Dr. Nevin has served as paid and pro how consultant to attorneys representing litiganes advancing claims of harm from exposure to mefloquine. The company pursued regulatory approval and marketed the drug to civilian travelers in the United States under the trade name Lariam<sup>50</sup> after its initial Food and Drug Administration (FDA) licensure in 1989.<sup>5</sup> Owing to its efficacy, presumed safety, and convenient dose schedule that facilitated prophylactic use, metloquine was soon identified as the drug of choice<sup>6-7</sup> for use by U.S. travelers to areas of chloroquine-resistant malaria at a dose of one 250-mg tablet weekly <sup>8-9</sup>

Early prelicensure studies on mefloquine were conducted predominantly among male prisoners, \$\frac{1}{2}\text{ in third-world} military personnel, \$\frac{5}{2}\text{ i.1.12}\text{ and subjects in third-world} countries, \$\frac{1}{2}\text{ i.1.5.14}\text{ Although vertigo and nausea were commonly reported in these early trials, in the absence of sensitive and unbiased prospective reporting \$\frac{1}{2}\text{ the drug was considered to be largely free of the severe psychiatric side effects that had characterized the related antimalarial compounds chloroquine \$\frac{1}{2}\text{ i.17}\text{ and quinacrine, \$\frac{1}{2}\text{ i.19}\text{ in the subduction of the second of the se

The purported safety of mefloquine was so well established that when reports of severe psychiatric side effects, including amnesia, confusion and psychosis, first emerged in the literature following the drug's early European licensure, 20–23 these symptoms were frequently dismissed as coincidental 24 or were later attributed by influential authors to the stresses of overseas travel, recreational drug use, or pre-existing or latent mental illness. 25–27 Despite

#### Chapter 19

## MEFLOQUINE AND POSTTRAUMATIC STRESS DISORDER

REMINGTON L. NEVIN, MD. MPH"

INTRODUCTION

THE DEVELOPMENT OF MEFLOQUINE

THE HISTORY OF MEFLOQUINE USE IN US MILITARY POPULATIONS

CLINICAL FEATURES OF MEFLOQUINE INTOXICATION

CHRONIC EFFECTS OF MEFLOQUINE TOXICITY

CONFOUNDING OF DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS-IV POSTTRAUMATIC STRESS DISORDER DIAGNOSTIC CRITERIA

FORENSIC APPLICATIONS

SUMMARY

\*Doctoral Student, Johns Hopkins Bloomberg School of Public Health, Department of Mental Health, 624 North Broadcoq, Room 782, Baltimore, Maryland 21205; formerly Major, Medical Corps, US Army

The Journal of the American Academy of Psychiatry and the Law

Ritchie EC, Block J, Nevin RL. Psychiatric Side Effects of Mefloquine: Applications to Forensic Psychiatry. Journal of the American Academy of Psychiatry and the Law. 2013;41(2):224-235; Nevin RL. Mefloquine and Posttraumatic Stress Disorder. In: Ritchie EC, ed. Textbook of Military Medicine. Forensic and Ethical Issues in Military Behavioral Health. Washington, DC: Borden Institute; 2015.

## **Veterans and Law Enforcement**

- Veterans courts
- Training police officers about PTSD







## The Crisis Intervention Officer Program

- A forty-hour training for law enforcement officers
  - Basic info. about mental illnesses, recognizing signs and symptoms; public mental health system and local laws
  - Verbal de-escalation training and role-plays
  - Site visits to provider agencies & hospitals
  - Graduation and certification as a CIO (pin)



2013 CIO of the Year – M. Pulliam

## **Schools and Veterans**





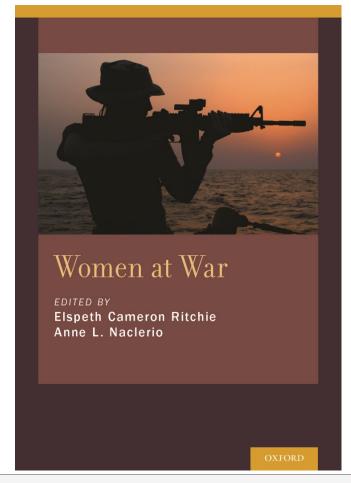
Increasing number of Veterans organizations in schools





http://commons.wikimedia.org/wiki/File:AmericanSoldierIraq.jpg

#### OXFORD UNIVERSITY PRESS



Women at War reviews the epidemiology, changes in policy, and demographics of women in the services; the factors affecting their health and health care while serving in austere environments; issues related to reproductive and urogenital health; and how health care providers can help prepare and prevent illness.

## **Special Issues for Female Soldiers**

- Deployment Health
  - Urinary tract infections
  - Dehydration
  - Menstruation
- Reproductive
  - Pregnancy
  - Breastfeeding
- Musculoskeletal
  - Stress fractures
- Psychological reactions
- Sexual assault



## **Deployment Health**

- Genito-urinary issues
  - Lack of clean bathrooms
  - Bombs by the side of the road
  - Fluid restriction
  - Dehydration
- Menstruation
  - Regulating
  - Suppressing
- Birth control





## Reproductive Issues

- Pregnancy
  - Physical training
  - Deployment
  - Exposure to toxins
- Breast-feeding
  - Maintenance of breast feeding
  - Exposure to petroleum products



## Musculoskeletal issues

- Heavy personal equipment
  - Kevlar helmets
  - Body armour
- Stress fractures
  - Pelvic
- Personal strength



## Psychological Issues

- Stressors of deployment
- Balancing family and deployment
- Combat
- Military sexual assault



## Psychological Reactions to Sexual Assault

- Shame
- Guilt
- Loneliness
- Secrecy
- "Rape-syndrome"
- "Accommodation-syndrome".



## **Questions/Discussion**









Combat and Operational
Behavioral Health 2011
Forensic and Ethical
Issues in Military
Behavioral Health 2015
www.bordeninstitute.army.
mil Slide 60

## **Back-Up Slides**