RESURRECTING LIVES FOUNDATION

A 501(c)(3) Nonprofit Organization

Dr. Chrisanne Gordon, MD,

Founder

Physical Medicine & Rehabilitation Physician

PURPOSE

- **Organizing force** focused on Traumatic Brain Injury (TBI) – the signature wound
- **Collaborating with the DOD/VA/VSO's, and private sector to provide the best opportunities for an injured veteran's future through…**
  - TBI Diagnosis & Treatment
  - Recovery – Cognitive Rehabilitation
  - Reintegration- Education/Employment
  - Resurrection- Re-Birth- The "New Normal"

SIGNATURE WOUND

Traumatic Brain Injury - TBI is the signature wound of post 9/11 wars.

20-25% of the 2.7 Million Deployed will experience TBI - 500,000 estimated

10-15% with Post Traumatic Stress Disorder, a form of TBI - 250,00 Estimated

TBI vs. Concussion

- TBI – insult to the brain from external mechanical force.
- Concussion – injury due to shaking, spinning
- BLAST –DAI – Diffuse Axonal Injury
- MVA -Hemorrhage, Emboli
    - Playing field injury is NOT a battlefield injury.

Etiology of Brain Injuries

- IED Blast – Improvised Explosive Device
- Vehicular Accidents – Humvee vs. MRAP
- Falls – Terrain in training and in combat
- Night Raids
- Boxing/Altercations
- MST – Military Sexual Trauma

The Additive Factor

- The #1 predictor of a TBI is a previous TBI
- Effects are Additive
- Second Impact Syndrome may be FATAL

Pathology of TBI

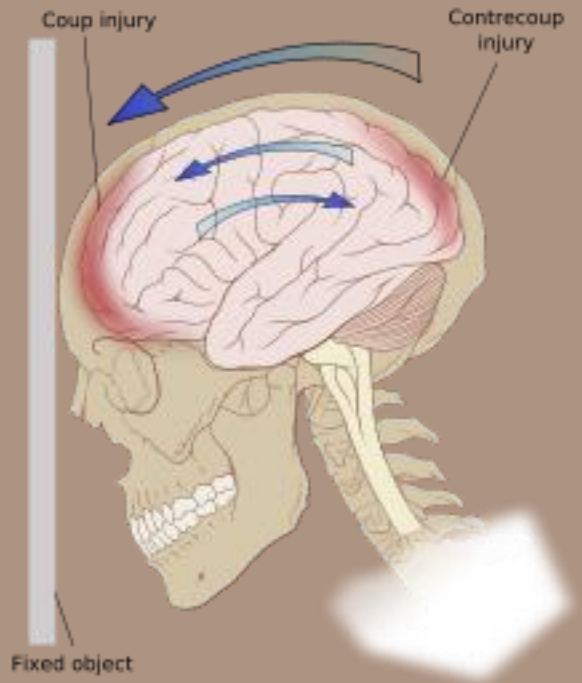
Falls/Hits/ Altercations – more localized

May exhibit contra coup injury

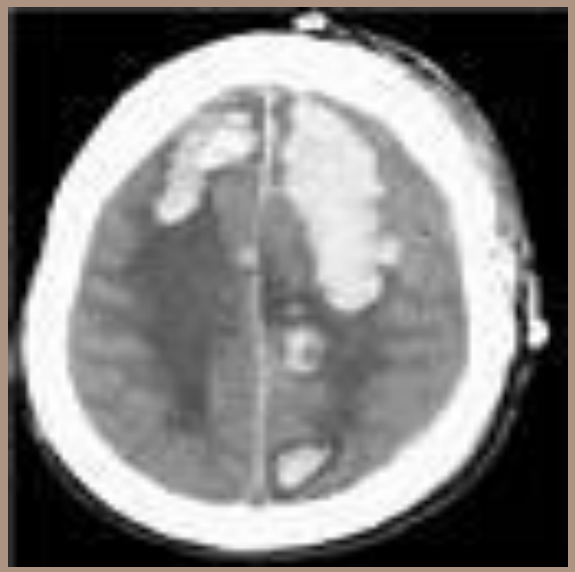
MVA- more generalized injury may occur

IED Blast – GLOBAL injury to the Brain

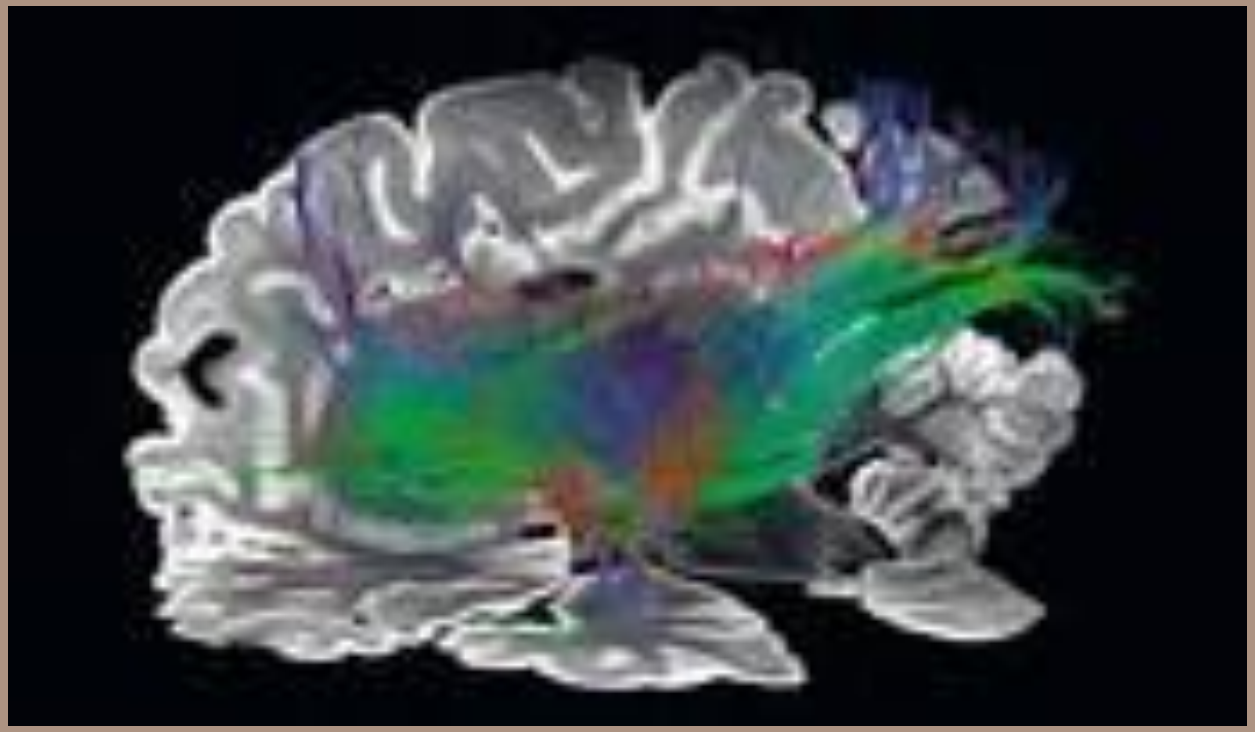
Blow to Brain



MVA – Bleed/Fracture

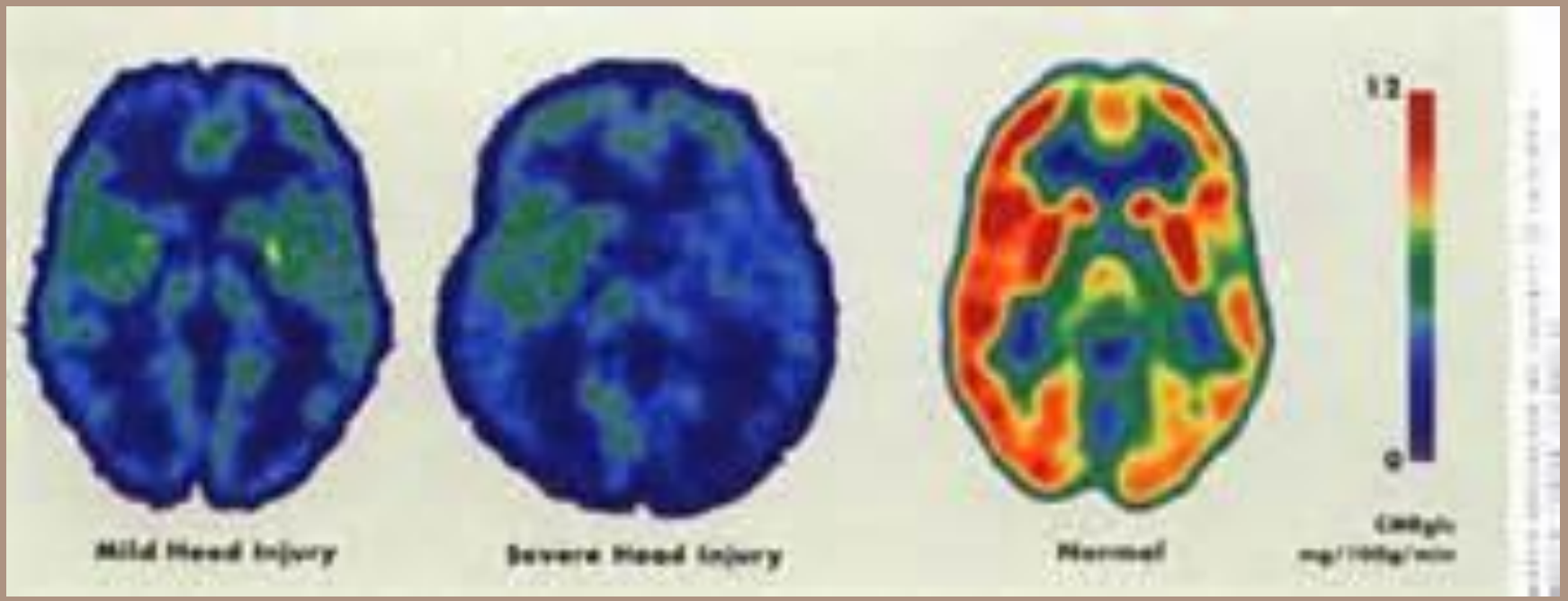


IED – Diffuse Axonal Injury



Normal DTI

General Chiarelli's PET TBI Tool



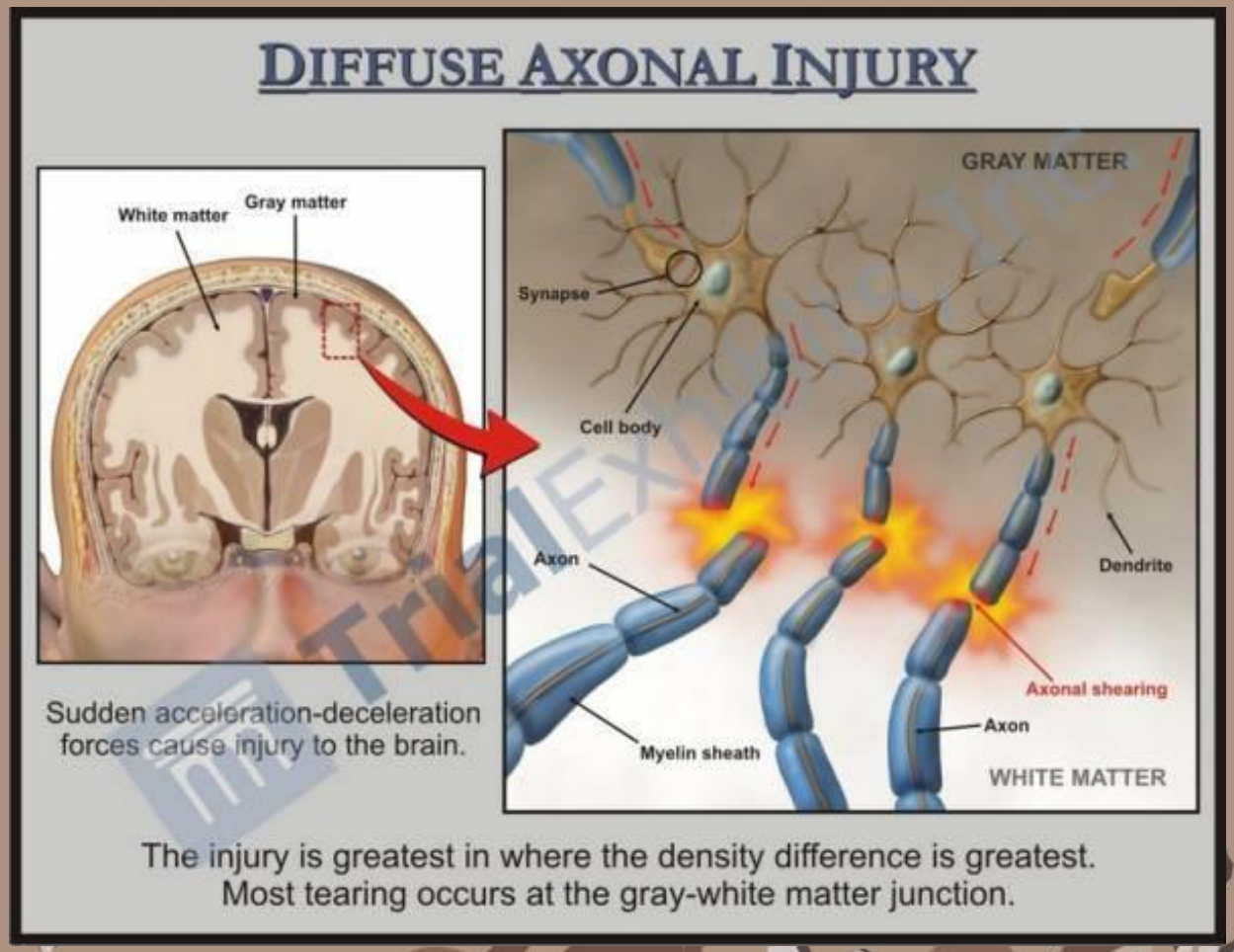
mTBI – MILD TBI?

- NOTHING is MILD about a BRAIN INJURY
- NOTE the diffuse injury in PET Scan where comatose patient and mTBI are so very similar in function

Micro Pathology

- IED blast causes diffuse axonal injuries –
- Nerve cells are literally ripped apart in a very disorganized fashion affecting many parts of the brain
- Each injury is different depending on force, distance from blast, predisposing brain injuries, head protection, medications, etc.

DAI – Hallmark of IED Blast



HALLMARKS of TBI

1. Sensory processing alterations
    a. Photophobia
    b. Hyperacusis –
    c. Sensory overload – Big Box Syndrome
2. Loss of Mapping skills and Memory
3. Pituitary Dysfunction
4. Chronic Headaches
5. Balance issues

Rapid Downward Spiral

- 1. Self Medication – 50-70%-

  Slow Brain Down –ETOH, Opiates, Marijuana

  Speed Brain Up – Caffeine, Amphetamine

2. Leads to Unemployment
3. Leads to Homelessness
4. Incarceration
5. SUICIDE

THE PROBLEM

Due to the lack of an integrative approach to treatment of TBI, the following co-morbidities prevail:

- 45% resort to substance abuse within a year
- Higher than average unemployment
- Homelessness: 13,000 Iraq and Afghanistan Veterans in 2014 – and rising
- Veteran Incarceration: Majority with TBI

THE SILENT STATISTIC

- Suicide : **1.3 Iraq/Afghanistan veterans commit suicide daily**

- Successful Suicide – Thomas Joiner, PhD.

  Intent

  Means

  Burden

Suicide

- 2nd leading cause of death in military
- Young, White, Unmarried Male Junior Enlisted Active Duty
- Drugs/alcohol
- Firearm
- No psychiatric history (Washington Post, 2008, per CDP)
- 1.2% Army Post-Deployment survey had suicidal ideation (Miliken et al., 2007 per CDP)
- Of completed suicides, most saw a healthcare provider within one month before suicide (USUHS, 2009)
- 19% of patients with PTSD will attempt suicide (CDP, 2009)

Diagnosis of mTBI

Listen to the Patient: He is telling you the diagnosis.

Sir William Osler

TBI Diagnosed by HISTORY.

Radiologic Studies

- Radiologic Studies: Timing/Technique
  1. CT/MRI – Notoriously Negative – VA standard
  2. Diffusion Tensor Imaging – Gold Standard
     Lipton et al. Radiology Aug. 2009 (DAI)
  3. PET- SPECT - Hovda UCLA -2007
  4. fMRI –brain mapping

  Most veterans tested 1-4 yrs. after last TBI

Remember the Pituitary

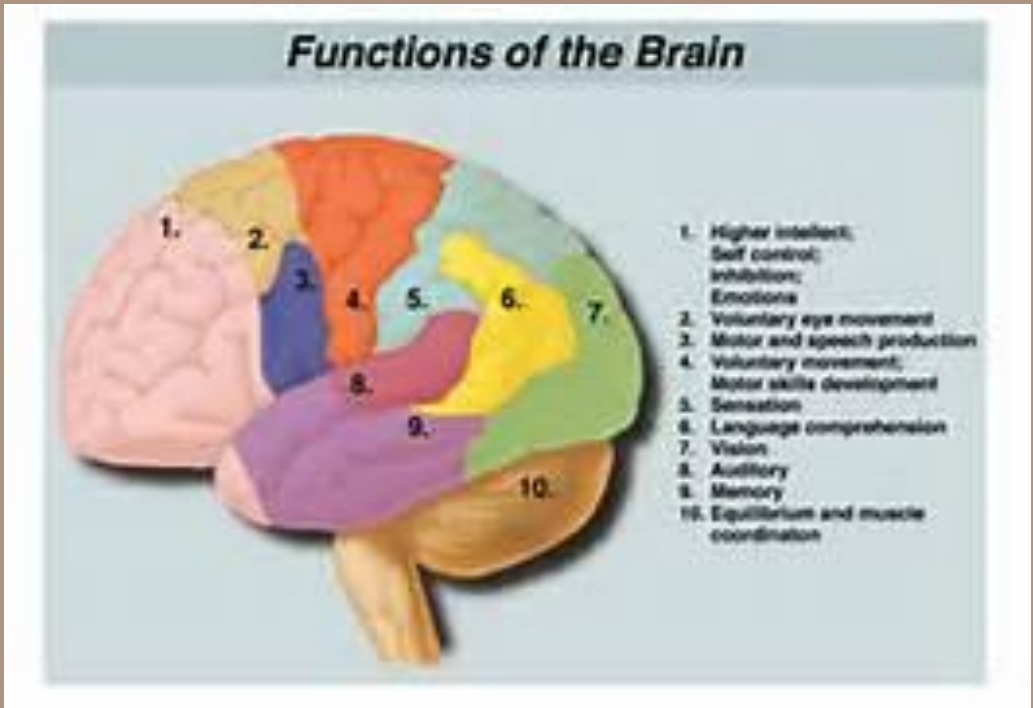
Blood work – pituitary profile- GH; TSH;

LH; ACTH

ESR, Tox screen.

Do NOT miss Dx. Of hypopituitarism which mimics depression.

Symptoms may arise from anywhere



These are Prominent in OIF/OEF Veterans

- Photophobia – Reflector sunglasses inside
- Memory Problems – Hesitation with speech
- Hypervigilance – View of the room
- Processing issues –Decreased cognition
- Mapping skill loss
- Balance Issues

Neuropsychological Testing

- May find unequivocal results
- Many with mild TBI won't show memory deficits
- Lack of baseline in Military
- Helpful in more significant injuries
- ImPACT, COGSTAT, ANAM, Headminder may be useful

Post Concussion Syndrome

- Begins the moment of Injury
- More prominent under hyper-adrenalin situations – (War/Sports)
- This is the Complex Regional Pain Syndrome of the Central Nervous System

Post Traumatic Stress Disorder

- PTSD- a Survival Mechanism
  a chemical brain disorder
  a recurrent loop of thought/behavior

Jeffrey Bazarian, MD, MPH- ER physician- U of Rochester

Linked to: child abuse; combat head injuries, NFL head injuries

PTSD is a chemical Brain Injury

- Post Traumatic Stress Disorder – Survival
- Chemical loop - replaying events
- Shares symptoms of TBI because it is TBI
- Prominent in MST – Military Sexual Trauma

PTSD

- On assessments after OIF/OEF deployment 6 to 9 percent of active-duty and 6 to 14 percent of NG/Reserve endorse PTSD symptoms on questionnaires (Milliken, Aucherlonie, & Hoge, 2007, per CDP)
- 15 percent according to RAND study (2008, per CDP)
- Large number of women with PTSD related to military sexual assault

FIGHT or FLIGHT

- Evolutionary instinct or response
- Very adaptive in unsafe environments
- Not adaptive at home in an everyday, safe environment
- Two routes—fast and slow processing
- One cortical and one subcortical
- Engages sympathetic nervous system
  - Blood to limbs
  - Increase in breathing and heart rate
  - Pupils dilate
  - Reflexes sharpen

THE RLF SOLUTION

- **Integration from injury to restoration…**
  - **Training for infield medics (recognize TBI)**
  - **TBI treatment research**
  - **TBI Veterans Advocate**
  - **Treatment**
  - **Employment**

URGENCY!

- Needs of the Veterans and their families have never been greater.
- VA and DOD pledging to collaborate with civilian resources to accommodate TBI/PTSD heroes numbering about 750,000

DISCHARGE- GAME CHANGE

- Provide smooth transition from military to civilian worlds with follow up for TBI/PTSD symptoms while reintegrating into employment and education opportunities.
- Provide ongoing support through affiliation with the American Legion/VSO posts in the community- “sense of belonging”

MAJOR ACCOMPLISHMENTS

- Referred over 100 patients to **essential** resources
- Governor John Kasich's Support for employment initiative
- Produced "Operation Resurrection," which was aired on Capitol Hill 11/12/13 and will be updated annually.
- Employment initiative for "soft hand off" from military to civilian life
- Change course toward success for military families in transition

RLF Employment Initiative

- From CO to CEO – seamless transition from military to civilian
- Connect separating military member with employment opportunity in community with support for military family
- Have job position prior to discharge utilizing skills (l)earned in the military.

VA collaboration –Sec. “Bob”

- Provide VA appointment within 2 weeks of discharge
- VA treats wounds of war/employer provides time off for treatment
- Appropriate TBI screening and referral via CHOICE Act as needed

Former VA Secretary – Robert McDonald

DOD Collaboration with DVBIC

- For those diagnosed with TBI prior to discharge, DVBIC provides case management for TBI for 2 years

- Maintain case management with DVBIC and work closely with HR departments

Medication Course

- Per training visionary

  Jerry W. Mysiw, MD – OSU PM&R Chairman

Provide frequent oversight with POR visits

Medications – to stimulate / normalize brain

Minor medication changes/ major follow up

Testing over time

The New Normal

- WAKE up the brain – Amantadine
- Stop the adrenalin overload - Propranolol
- Normalize the hormones – thyroid, coritsol
- Improve the sleep – NSSRI
- Move the body – engage the brain
- Improve the vision – eye exercises & tasks

Meds for Normalization

- Symmetrel, Methylphenidate, Dextroamphetamine, Modafinil- for processing
- Propranolol, Amitriptyline – for post concussive
- Electronic aides – Bushnell GPS, PDA, iPHONE
- Setting modifications or organization
- Routine/schedule
- Memory strategies (chunking, acronyms, music)
- Pain management as needed

Integrative Wellness Model

Exercise is key –

start slowly, then build to steady state

Meditation/Relaxation exercises

Brain Games / Retrain Brain

Group Therapies – online chat groups

Yoga/Pilates/Balance Training

Creative Endeavors

- MUSIC – Symphony stimulates 72 brain sites
- CHESS – cognition/memory
- ART- movement of mind and body
- Narrative Writing- Rademacher
- Film Making- Patton
- Sports Activities – fly fishing, camping, hiking and climbing – Everest?

Long Term Complications

VA has accepted several long term complications

- Epilepsy
- Dementia
- Depression
- Parkinson’s
- Endocrine Disorders

Worst Complication - CTE

- Chronic Traumatic Encephalopathy – CTE
- Linked to NFL players who have died by suicide - Dr. Anne McKee, Boston U

- Linked to Veterans who have died by suicide

Both Battlefield and Playing Field have long term, cumulative brain pathology

NFL/NCAA/DOD/VA

- Leagues of Denial –

  News media and Academia are spotlighting

Brain of Player –Tau Protein and Neurfibrillary Tangles - Anne McKee, MD BOSTON

Brain of Military Member – Honeycombed pattern of brain loss primarily frontal lobe – lack of axonal connection

Vassilis Koliatsos, MD Johns Hopkins

Management Dilemma

- HOW TO STOP CTE? -

Currently an autopsy diagnosis- need to diagnose and treat prior to end pathology.

Researching – BIOMARKERS, Repetitive Testing, Low cost/ Specific Diagnostic

TBI – A Chronic Illness

- Recently, due to sequellae and issues related to the aging brain, TBI is now classified as

A CHRONIC ILLNESS

Brain changes with age- slowing of reaction times/distortion of memory/changing emotions

TBI may increase the speed of the process

VA Diagnosis and Treatment

- Varied – Lack of tertiary medical center collaborations
- 8-10% of Health Care providers Dx/Rx TBI
- Fewer than 1% in VA –

  Psychiatrists/Behavoral Health – 21,000 +

  Physiatrists – 100 +/-

Our Heroes are out of their brains, not out of their minds.

Medication over Meditation

- VA medications of choice - antidepressants
- Sleep medications –
- Pain medications – Opiates

This pattern of polypharmacy is gradually changing at the VA – Must change NOW

CHOICE ACT is KEY

- For diagnosis, treatment, and follow up of TBI
- Can collaborate with VA through telehealth
- TBI- Cognitive Rehabilitation Therapy
- PSTD –Prolonged Exposure Therapy

Prolonged Exposure Therapy

- In vivo exposure
  - Exposing oneself to fearful situations, people, places
- Imaginal exposure
  - Telling the story of the trauma in session and listening to the session on tape
- Breathing retraining
- Remove avoidance and symptoms will not be maintained (Foa, Hembree, & Rothbaum, 2007).

Capitol Hill Legislation

- Senator Rob Portman – MEPS Act 2015
- Senator Sherrod Brown – SET Act 2014
- Senator Joe Donnelly – Suicide Prevention 2014
- Congressman Steve Stivers –SET Act 2014

Legislation Changes Policy

- The Legislation negotiated by RLF, will improve the TBI/PTSD tracking through DOD/VA, and affect hundreds of thousands of military members in the future.
- These negotiations were the product of 5 trips to Washington DC, including taking several of our Veterans to speak to Congress and the Congressional showing of the documentary.

RESURRECTING LIVES FOUNDATION

6724 Perimeter Loop Road, PMB #317
Dublin, Ohio 43017
Tax ID: 45-3554793
Phone number 614 981 2927
www.resurrectinglives.org