



Indian Health Service
**2012 NATIONAL BEHAVIORAL
HEALTH CONFERENCE**

WELCOME

TRAUMATIC BRAIN INJURY

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Boston University School of Medicine



Mobilizing Partnerships to Promote Wellness



HOUSE KEEPING

- Please be sure to sign in and out on the Sign In Sheets located near the entrance to this room.
- Please complete the evaluation at the end of this presentation.
- For more information on Continuing Education Units (CEUs), please visit the Registration Desk

COMFORT ROOM

- To promote wellness and self-care, a Comfort Room is available in Atrium Room 8 for your use.
- If you need further assistance, please visit the Indian Health Service Division of Behavioral Health booth.

PARTNERSHIPS

- **MASSACHUSETTS REHABILITATION COMMISSION**
- **HEALTH RESOURCES and SERVICES ADMINISTRATION (HRSA)**

TRAUMATIC BRAIN INJURY



EPIDEMIOLOGY

ACQUIRED BRAIN INJURY (ABI)

INFECTIOUS

NEUROTOXIC

METABOLIC

TRAUMATIC

NEOPLASTIC

VASCULAR

DEGENERATIVE/DEMENTING

EPIDEMIOLOGY of TBI



- **CHILDREN / ADOLESCENTS**
- **YOUNG ADULTS**
- **ELDERLY (\geq 75 YEARS OF AGE)**

EPIDEMIOLOGY of TBI (SEX RATIOS)



MALES >> **FEMALES**
(1.5-2 : 1)

UNINTENTIONAL CAUSES of TBI




- **FALLS**
- **MOTOR VEHICLE-RELATED OCCURRENCES**
- **SPORTS/RECREATIONAL ACTIVITIES**
- **INDUSTRIAL/WORK-RELATED INJURIES**

INTENTIONAL CAUSES of TBI



- **MILITARY COMBAT**
- **VIOLENT CRIMINAL BEHAVIOR**
- **HOMICIDE and SUICIDE ATTEMPTS**
- **DOMESTIC VIOLENCE**
- **CHILD ABUSE**

EPIDEMIOLOGY of TBI (RISK FACTORS)



- **NON-USE of PREVENTION STRATEGIES
(e.g. seatbelt, helmet)**
- **PSYCHIATRIC/BEHAVIORAL DISORDER**
- **PSYCHOSOCIAL/ENVIRONMENTAL FACTORS**
- **SUBSTANCE ABUSE**

TBI SUBTYPES



- **CLOSED HEAD INJURY**
- **PENETRATING HEAD INJURY**
- **CRUSH INJURY**
- **BLAST INJURY**
- **BIRTH INJURY**

GLASGOW COMA SCALE

(Teasdale & Jennett, 1974)

- **MOTOR RESPONSE**
- **VERBAL RESPONSE**
- **EYE OPENING RESPONSE**

GLASGOW COMA SCALE

≤ 8 = SEVERE TBI

9 -12 = MODERATE TBI

13 -15 = MILD TBI

TBI in the UNITED STATES




**ESTIMATED 1.7 MILLION
PERSONS/YEAR**

- **HOSPITALIZED: 275,000 PERSONS/YEAR**
- **EMERGENCY ROOM TREATMENT: 1.4 MILLION
PERSONS/YEAR**
- **DEATHS: 52,000**

Centers for Disease Control & Prevention

NATIVE AMERICANS and INJURIES



**Injuries are Leading
Cause of Death
Ages 1 – 44 years**

**Centers for Disease
Control and Prevention,
2003**

TBI and AMERICAN INDIAN/ALASKAN NATIVES



- **HIGHEST ANNUAL AVERAGE TBI-RELATED DEATH RATES**
- **HIGHEST RATE of MV-RELATED TBI DEATHS**
- **67.5% of FIREARM-RELATED TBI DEATHS DUE to SUICIDE, with HIGHEST RISK on AI/AN MALES 15-34 YEARS**


CDC
Surveillance for TBI
May, 2011

TRAUMATIC BRAIN INJURY



POST-CONCUSSION SYNDROME

POST-CONCUSSION SYNDROME (PCS)



- **MINOR/MILD TBI**
- **ASSOCIATED WITH BRIEF or NO LOC**
- **MAY BE ASSOCIATED WITH WHIPLASH EVENT**

CLINICAL SYMPTOMS in PCS



- **HEADACHE**
- **DIZZINESS/VERTIGO**
- **VISUAL SYMPTOMS (e,g., photophobia)**
- **NAUSEA/VOMITING**
- **SLEEP DISORDER**
- **AUDITORY SYMPTOMS**
(tinnitus, phonophobia, hearing loss)

CLINICAL SYMPTOMS in PCS




- **IRRITABILITY/EMOTIONAL LABILITY**
- **DIMINISHED STAMINA/FATIGUE**
- **IMPAIRMENT OF ATTENTION/ CONCENTRATION**
- **SECONDARY MEMORY IMPAIRMENT**

NEURODIAGNOSTIC FINDINGS




- **GLASGOW COMA SCALE: 13-15**
- **CT/MRI FINDINGS TYPICALLY NEGATIVE**
- **EEG USUALLY NORMAL**
- **NEUROPSYCHOLOGICAL TEST RESULTS WNL**

PERSISTENT PCS SYMPTOMS (RISK FACTORS)

-  **AGE**
- **HISTORY OF MULTIPLE CONCUSSIONS**
- **PRE-EXISTING PSYCHIATRIC DISORDER**
- **CIRCUMSTANCES of INJURY ASSOCIATED with
PSYCHOLOGICAL TRAUMA**

PERSISTENT PCS SYMPTOMS (RISK FACTORS)



- **SIGNIFICANT SEQUELAE RESULTING FROM APPARENT "MINOR" INJURY**
- **LACK of EVALUATION at TIME of INJURY**
- **MISDIAGNOSIS**
- **UNTREATED SYMPTOMS/DISORDER**



IN MEMORIAM

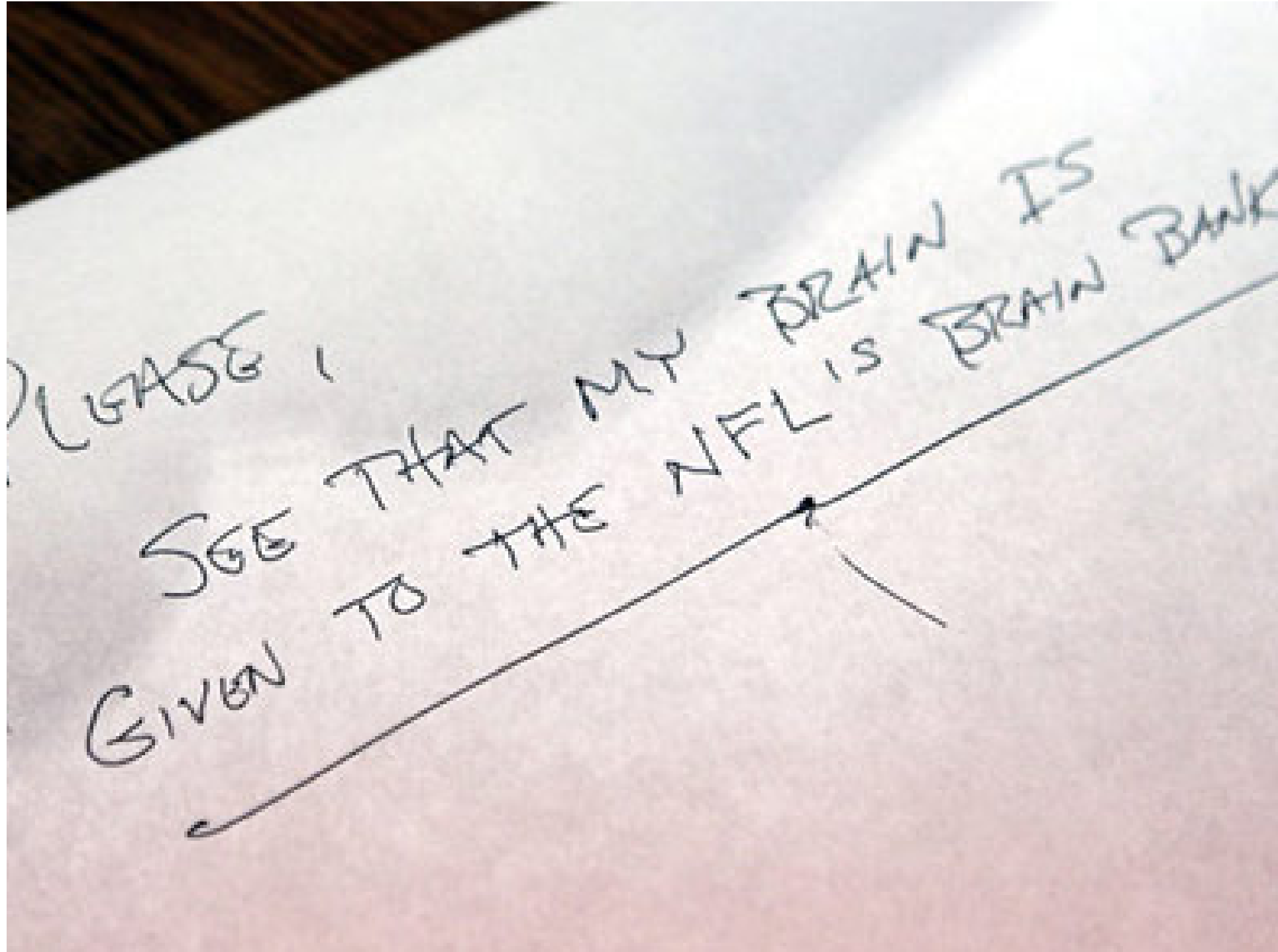
DAVE DUERSON

November 28, 1960 - February 17, 2011

PLEASE,

SEE THAT MY BRAIN IS

GIVEN TO THE NFL'S BRAIN BANK



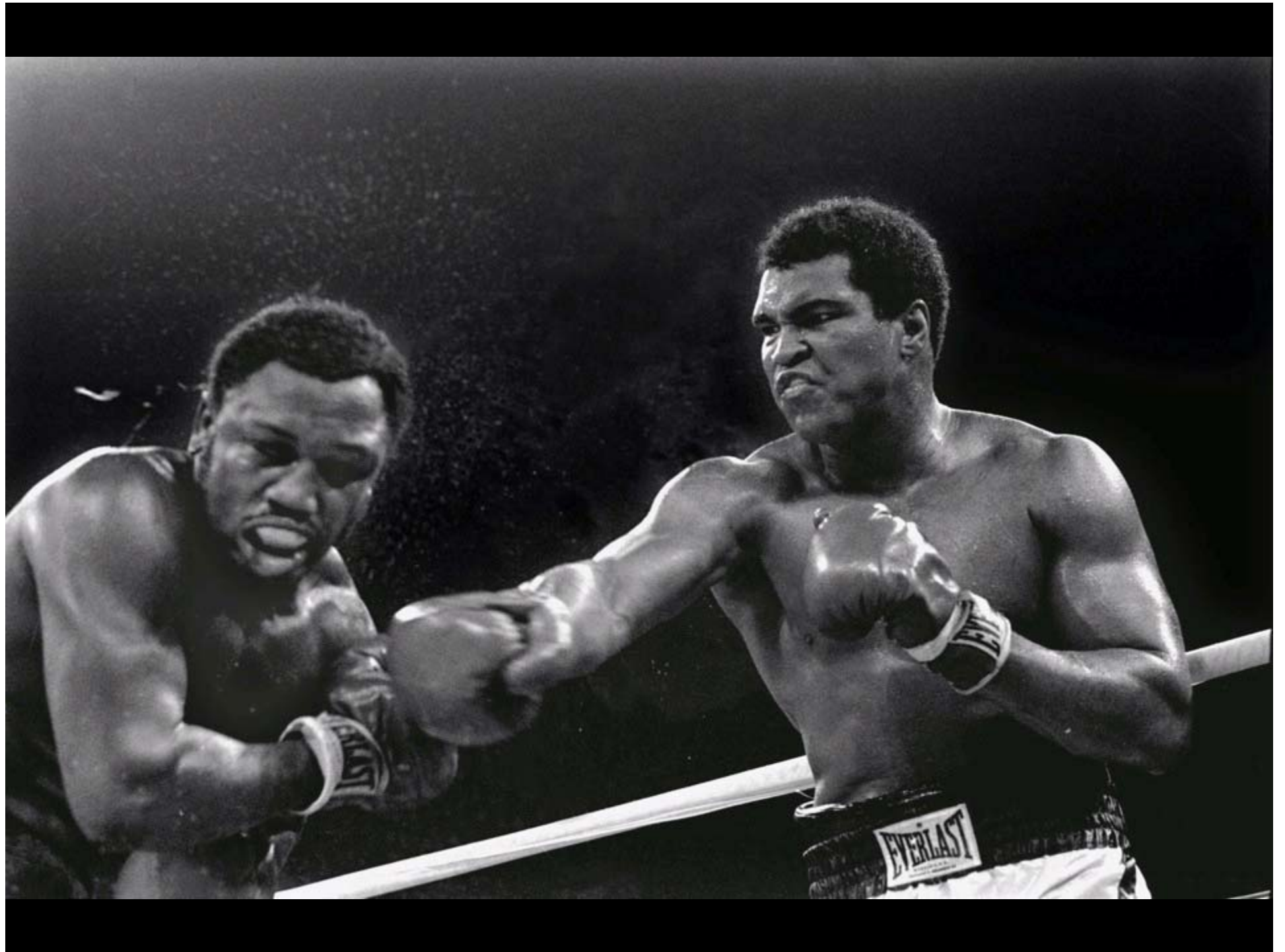
CHRONIC TRAUMATIC ENCEPHALOPATHY (CTE)



- **NEURODEGENERATIVE DISORDER**
- **OBSERVED in CONTACT SPORTS ATHLETES**
 - e.g., hockey, football
 - amateur and professional boxers (dementia pugilistica)
- **? OIF/OEF VETERANS**



Owen Thomas (age 21)
University of Pennsylvania



CHRONIC TRAUMATIC ENCEPHALOPATHY (CTE)



- **DEMENTIA**
- **NEUROPSYCHIATRIC SYMPTOMS, including suicide**
- **PARKINSONISM**
- **NEUROPATHOLOGICAL CHANGES**
 - **Tau deposition**
 - **Atrophy of cerebral hemispheres and subcortical structures**
 - **Fenestrated cavum septum pellucidum**



Brain sections

Tau

CHRIS BENOIT

CANADIAN CRIPPLER



CHRIS BENOIT.....

THE RABID

WOLVERINE

CRIPPLER CROSSFACE.....

SECOND IMPACT SYNDROME



- **RARE DISORDER; HOWEVER, INCIDENCE, UNKNOWN**
- **MOST COMMONLY ASSOCIATED WITH SPORTS INJURY**
- **RESULTS FROM A SECOND CONCUSSION WITHIN HOURS, DAYS, WEEKS**
- **ACUTE CEREBRAL EDEMA, VASCULAR CONGESTION, and ICP**
- **MORTALITY: 50%**
- **MORBIDITY: 100% in SURVIVORS**



Nathan Stiles (age 17)

TRAUMATIC BRAIN INJURY



MODERATE/SEVERE INJURY

PATHOPHYSIOLOGY of TBI



- **LOC/COMA**
- **COUP AND CONTRECOUP CONTUSIONS**
- **FRONTOTEMPORAL CONTUSIONS**

PATHOPHYSIOLOGY of TBI

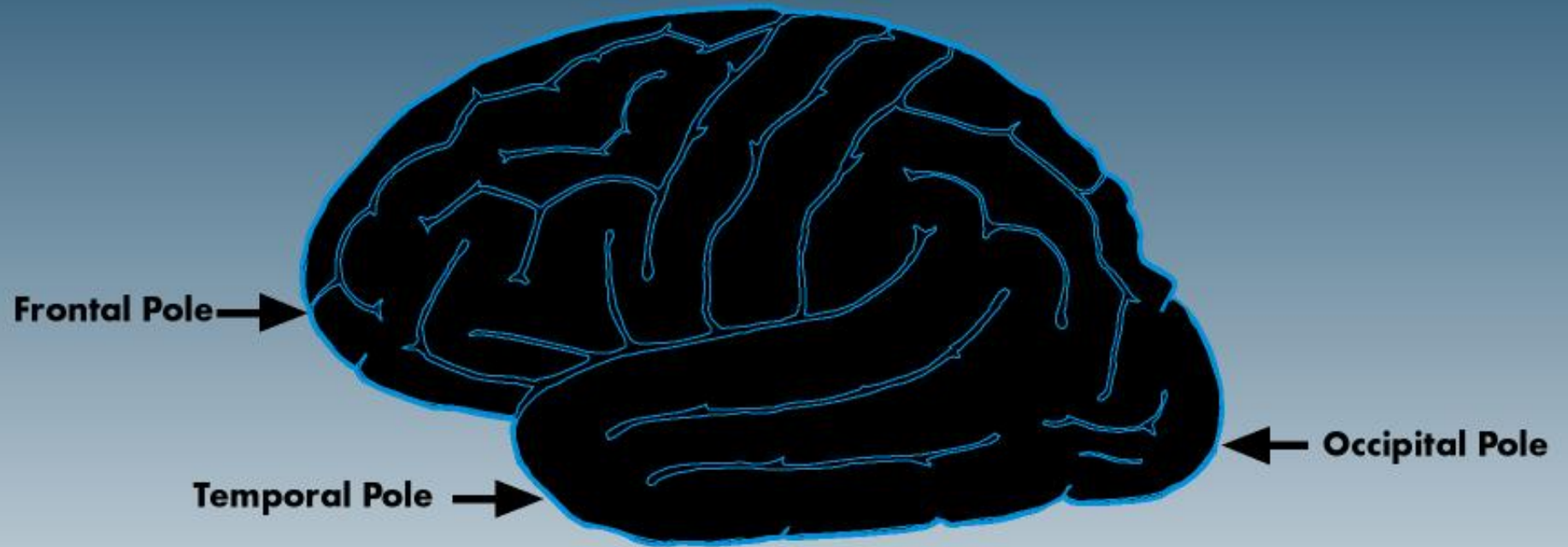
COUP INJURY

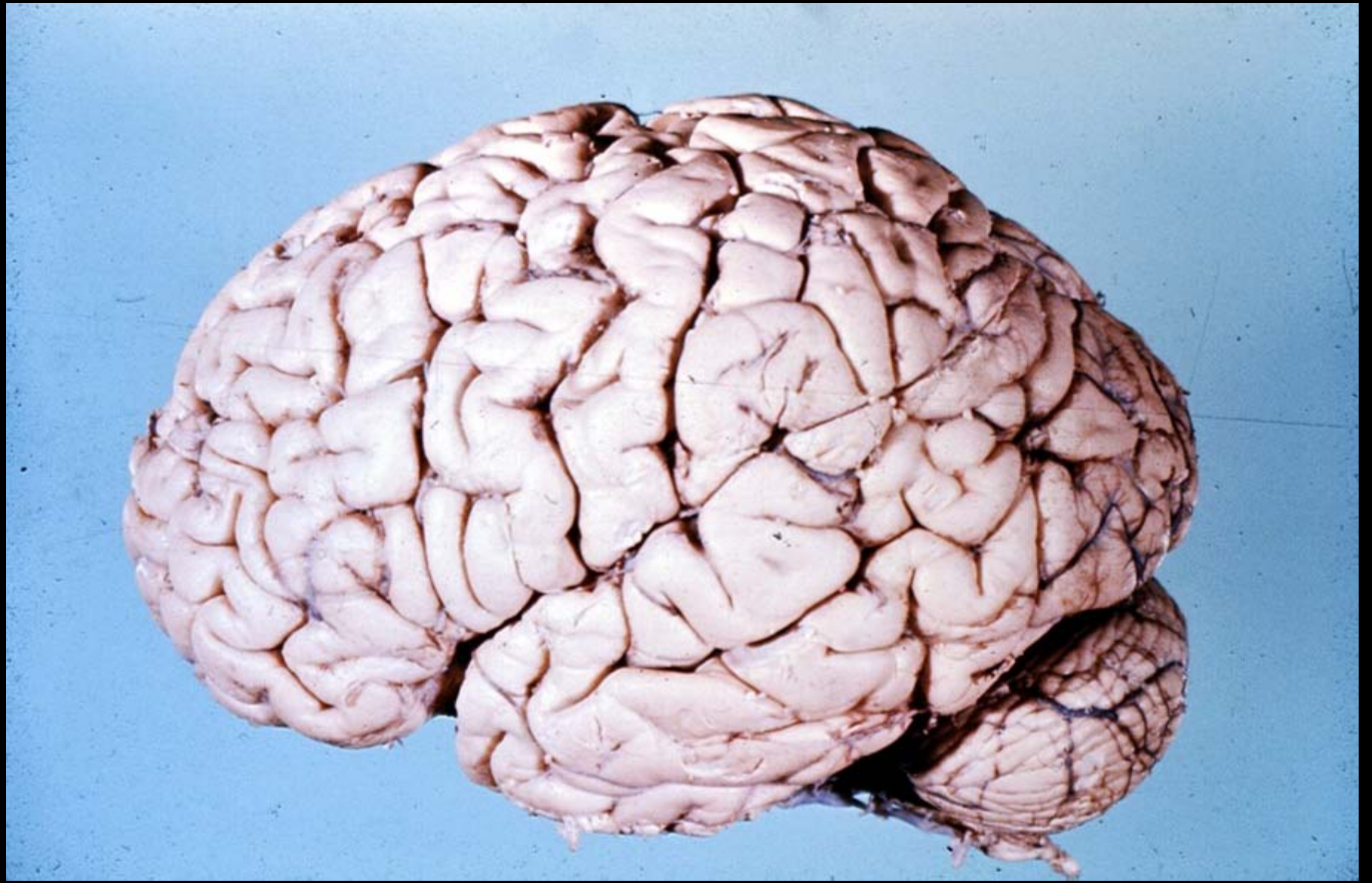


CONTRECOUP INJURY



CEREBRAL CONTUSIONS and TBI





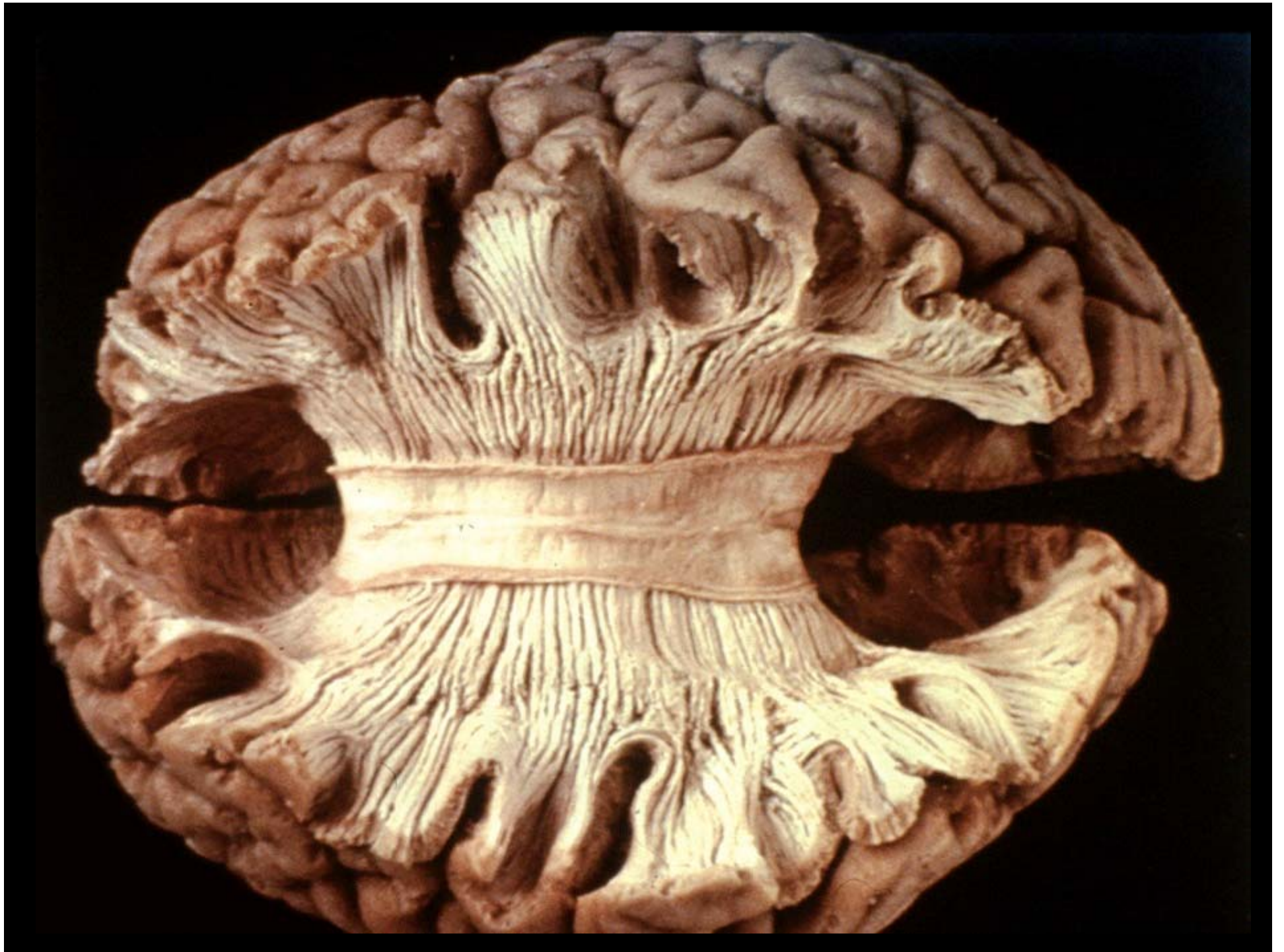


PATHOPHYSIOLOGY of TBI

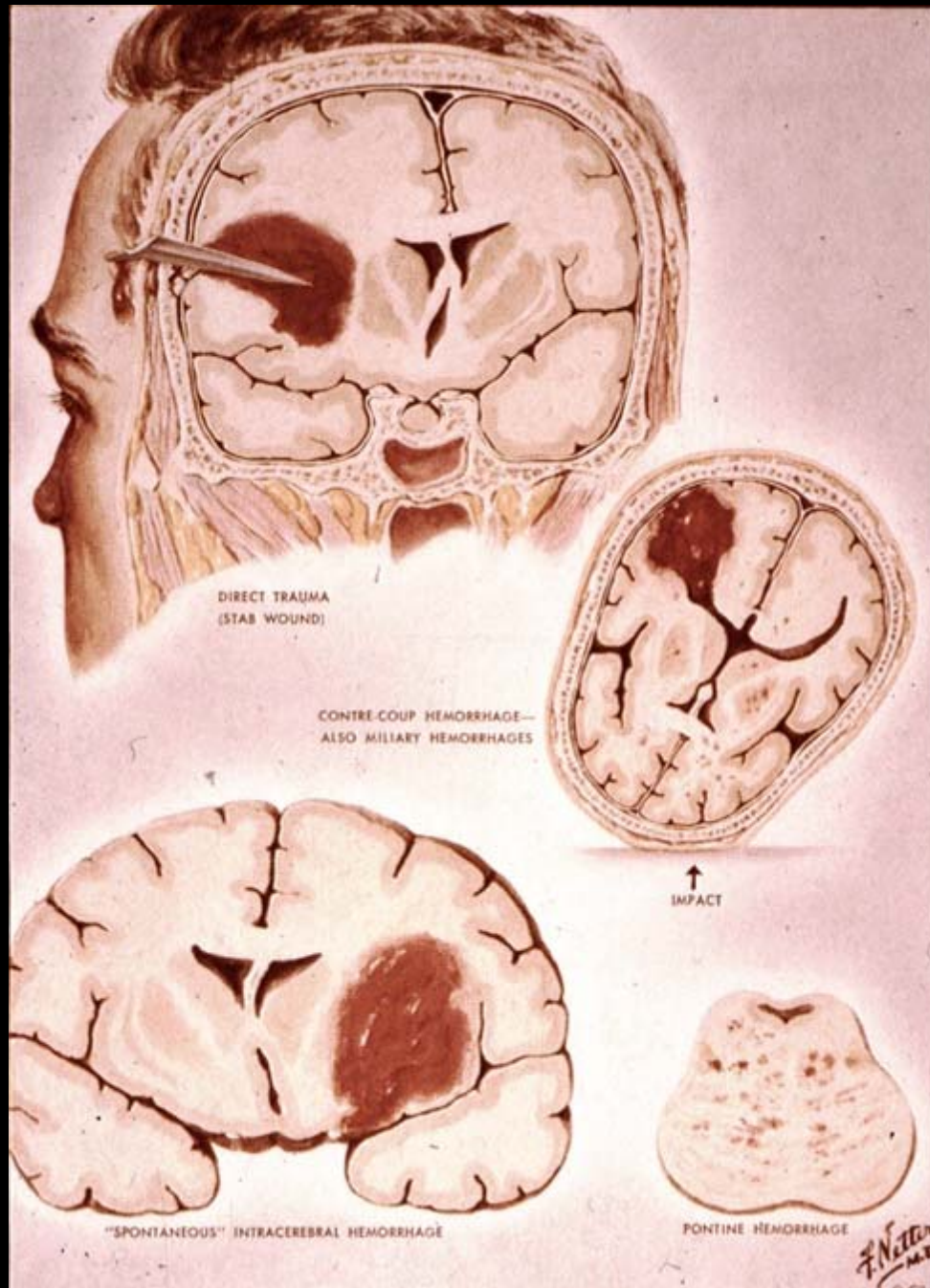


- **CEREBRAL EDEMA**
- **COMPRESSION and HERNIATION**
- **DIFFUSE AXONAL INJURY (DAI)**









ACUTE COMPLICATIONS of TBI



- **CARDIOPULMONARY ARREST**
- **SKULL FRACTURE**
- **HEMORRHAGE/HEMATOMA**
 - **Epidural**
 - **Subdural**
 - **Intracerebral**
- **HYDROCEPHALUS**

ACUTE COMPLICATIONS of TBI



- **SYSTEMIC COMPROMISE (e.g., shock)**
- **INFECTION**
- **ENDOCRINOPATHY**
- **POST-TRAUMATIC SEIZURES**



TRAUMATIC BRAIN INJURY

EPIDEMIOLOGY: BLAST INJURY and TBI

- **Incidence and Prevalence (worldwide):
Unknown**
- **“Signature Injury” Among Veterans of
Iraq/Afghanistan War**
- **Most Common Cause: Explosion**

PREVALENCE of MENTAL CONDITION and TBI OIF/OEF VETERANS (N= 1.64 million)



- **300,000 PTSD or MAJOR DEPRESSION**
- **320,000 PROBABLE TBI**

As of October, 2007
Rand Report
Center for Military Health
Policy Research

CAUSES of BLAST INJURY



- **RPG'S (Rocket-Propelled Grenades)**
- **Land Mines**
- **IED's (Improvised Explosive Devices)**

TYPES of EXPLOSIVES



- **HE (High Order Explosives) which produce a supersonic over-pressurization shock (blast) wave (e.g. TNT, ammonium nitrate fuel oil-ANFO, etc.)**
- **LE (Low Order Explosives) which produce a subsonic explosion (without over-pressurization wave) – e.g. pipe bombs, gunpowder, pure petroleum, etc.**
- **Both HE's and LE's can produce a "blast wind" (forced super-heated air flow), and both HE's and LE's can be IED'S.**

MECHANISMS of BLAST INJURY



- **PRIMARY** – Due to an HE and affecting gas-filled structures (e.g. blast lung – most common fatal injury) and organs surrounded by fluid-filled cavities (e.g. brain and spinal cord)
- **SECONDARY** – Results from airborne debris and fragments which may cause penetrating or blunt force injury

MECHANISMS of BLAST INJURY



- **TERTIARY** – Results from blast wind which throws/displaces victim and may result in polytrauma, including CHI and skull fractures
- **QUARTEARNARY** – Other explosion – related injuries, illnesses, or diseases; exacerbations and complications (e.g. smoke/toxic fume inhalation; burns, etc.)

CNS EFFECTS of BLAST



- **TRAUMATIC BRAIN INJURY ± SKULL FRACTURE**
- **SPINAL CORD INJURY**
- **RUPTURE of GLOBE (EYE) AND PENETRATING EYE INJURY**
- **RUPTURE of TYMPANIC MEMBRANE (TM)**

COMMON ASSOCIATED/SECONDARY DISORDERS



- **INJURIES NECESSITATING AMPUTATION (LOWER EXTREMITIES – MOST COMMON)**
- **ASPHYXIA and RESIDUAL PULMONARY DISORDER**
- **BURNS of VARYING SEVERITY**
- **SEIZURE DISORDER**
- **NEUROTOXIC INJURY**
- **CARDIOMYOPATHY**

KILLED – to – WOUNDED RATIOS



- **VIETNAM** **1: 2.6**
- **DESERT STORM/DESERT SHIELD** **1: 1.2**
- **IRAQ/AFGHANISTAN** **1: 16**

MILITARY SEXUAL TRAUMA



VETERANS:

DID YOU EXPERIENCE ANY UNWANTED SEXUAL ATTENTION, UNINVITED SEXUAL ADVANCES, OR FORCED SEX WHILE IN THE MILITARY? DOES THIS EXPERIENCE CONTINUE TO AFFECT YOUR LIFE TODAY?

Both men and women can experience Military Sexual Trauma (MST) during their service. MST can affect a person's physical and mental health, even many years afterward. The VA provides free, confidential counseling and treatment for conditions related to experiences of MST. You do not need to be service-connected and may be able to receive this benefit even if you are not otherwise eligible for VA care.



FEMALE VETERANS SERVED by VA HEALTH SERVICE



**1/3 Experienced Rape/Attempted Rape
during Military Service**

- **37% Multiple Rapes**
- **14% Gang-Raped**

DOD SEXUAL ASSAULT PREVENTION and RESPONSE PROGRAM



- **Established in 2005**
- **Provides for Confidential, “Restricted Reports”**
- **Increase in Reported Assaults = 40%**

COMORBIDITY in OIF/OEF VETERANS

- **MILITARY SEXUAL TRAUMA (MST) ± TBI**
- **PTSD**
- **SUBSTANCE ABUSE DISORDER**
- **UNDIAGNOSED/UNTREATED MENTAL DISORDER**
- **↑ RISK of SUICIDE**

WOMEN VETERANS HEALTH CARE

nearly **one-third**
of the adult
homeless
population had
served their country in the
Armed Services

SHE SERVED

DOESN'T SHE DESERVE BETTER?

 Department of Veterans Affairs | www.va.gov | 1-800-828-6888

OTHER RISKS in OIF/OEF VETERANS



- **DISHONORABLE DISCHARGE**
- **CRIMINAL CHARGES/INCARCERATION**
- **UNEMPLOYMENT**
- **HOMELESSNESS**



DID YOU EXPERIENCE ANY OF THE FOLLOWING WHILE SERVING IN THE MILITARY?

- ★ **VEHICULAR ACCIDENT** (Humvee, Helicopter, Tank)
- ★ **CLOSE EXPOSURE** to an IED or other **EXPLOSION**
- ★ **MILITARY SEXUAL TRAUMA**, involving Injury to the Head

ARE YOU STILL EXPERIENCING PERSISTENT PROBLEMS WITH:

- | | |
|--------------------------|-----------------------|
| ★ Reasoning | ★ Memory |
| ★ Problem Solving | ★ Finding Words |
| ★ Hearing Loss | ★ Making Decisions |
| ★ Ability to Concentrate | ★ Personality Changes |
| ★ Ringing in the Ears | ★ Vision Changes |

**YOU MAY HAVE SUSTAINED A CONCUSSION
or
MILD TRAUMATIC BRAIN INJURY (mTBI)**



WE CAN HELP

STATEWIDE HEAD INJURY PROGRAM

Massachusetts Rehabilitation Commission
27 Wormwood St. Suite 600
Boston, MA 02210-1616
617-204-3852
Toll Free Number: 1-800-223-2559

Email: shipu@mrc.state.ma.us
Website: <http://www.mass.gov/mrc/ship>

all photos compliments of www.Fotostoryphotos.com and shutterstok.net





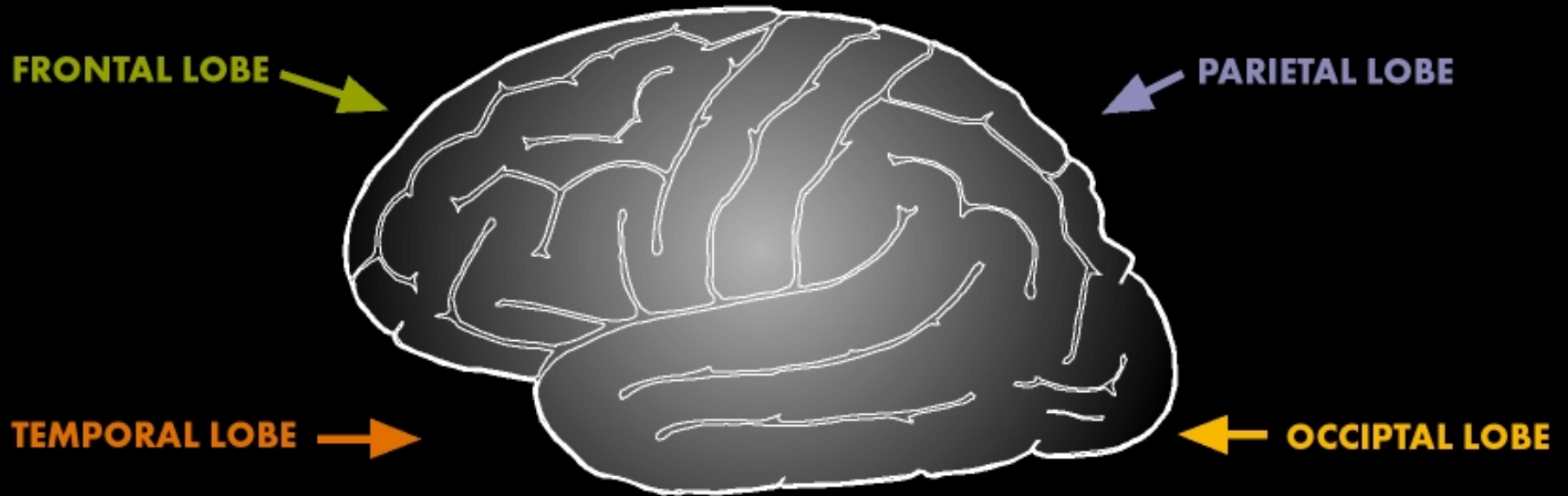
LONG-TERM SEQUELAE
of
TRAUMATIC BRAIN INJURY

TBI: POST-ACUTE SEQUELAE



- **PHYSICAL DISABILITY**
- **SENSORY IMPAIRMENT**
- **NEUROCOGNITIVE DEFICITS**
- **NEUROBEHAVIORAL/PSYCHIATRIC DISORDER**

CEREBRAL HEMISPHERE: LATERAL VIEW



FRONTAL LOBE

PARIETAL LOBE

TEMPORAL LOBE

OCCIPITAL LOBE

FRONTAL LOBE

Primary Motor Cortex
Motor Planning/Initiation
Eye Movement
Expressive Language
(Broca's Area-L Hemisphere)
Prosody (R Hemisphere)
Working Memory/Attention
Executive Skills
Behavioral Regulation

PARIETAL LOBE

Primary Somatosensory Cortex
Cognitive- Linguistic Skill
(L Hemisphere)
Visual Spatial Skills
Mathematical Skills

OCCIPITAL LOBE

Primary Visual Cortex
Complex Visual Processing
Color Perception

TEMPORAL LOBE

Primary Auditory Cortex
Comprehension of Language
(Wernicke's Area-L Hemisphere)
Comprehension of Affective
Aspects of Language (R Hemisphere)
Memory and Learning
Auditory and Visual Perception

NEUROCOGNITIVE CONSEQUENCES of TBI

Disorders of Attention/Arousal



- **Difficulty sustaining concentration or dividing attention**
- **Distractibility and diminished capacity to resist interference from competing stimuli**
- **Inattention or neglect (ignores stimuli typically on one side of space)**
- **Hypoarousal and persistent lethargy**

NEUROCOGNITIVE CONSEQUENCES of TBI

Disorders of Memory



- **Post-Traumatic Amnesia (PTA)**
- **Impaired ability for acquisition of new information, verbal and/or non-verbal**
- **Difficulty with retrieval of information**
- **Persistent amnesia**

NEUROCOGNITIVE CONSEQUENCES of TBI

Disorders of Language



- **Word-finding or naming difficulty (anomia)**
- **Diminished verbal fluency**
- **Difficulty with articulation of speech (dysarthria)**
- **Difficulty with expression and/or comprehension of language (traumatic aphasia)**
- **Impairment of cognitive-linguistic skills (e.g., reading, spelling)**

NEUROCOGNITIVE CONSEQUENCES of TBI

Disorders of Executive Skill



- **Difficulty with initiating and/or sustaining purposeful activity**
- **Impairment of organizational and problem-solving skills**
- **Diminished capacity to develop and execute well-formulated plans**

NEUROCOGNITIVE CONSEQUENCES of TBI

Disorders of Executive Skill



- **Cognitive inflexibility, evidenced in perseveration and limited capacity to generate alternative strategies/integrate feedback**
- **Limited capacity for insight and reasoning**
- **Diminished capacity for recognizing or anticipating the consequences of one's own behavior**

NEUROBEHAVIORAL CONSEQUENCES of TBI



- **DEPRESSION**
- **PERSONALITY CHANGE**







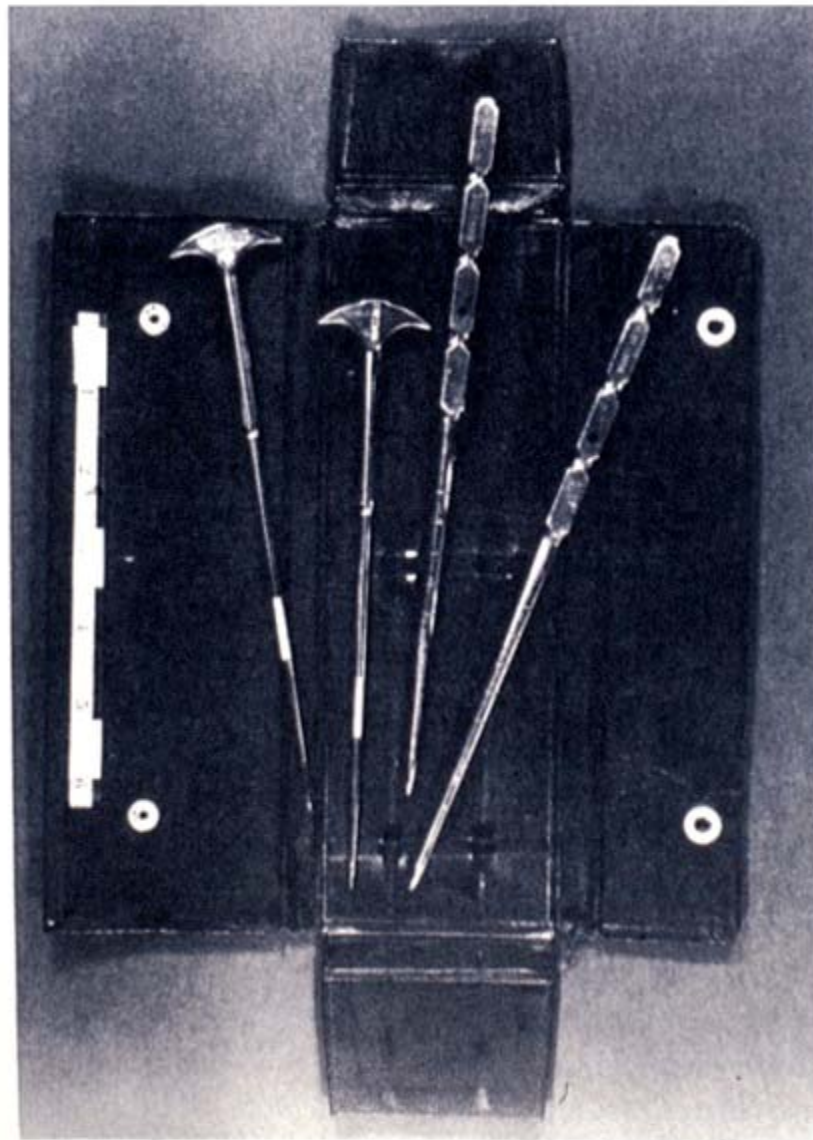
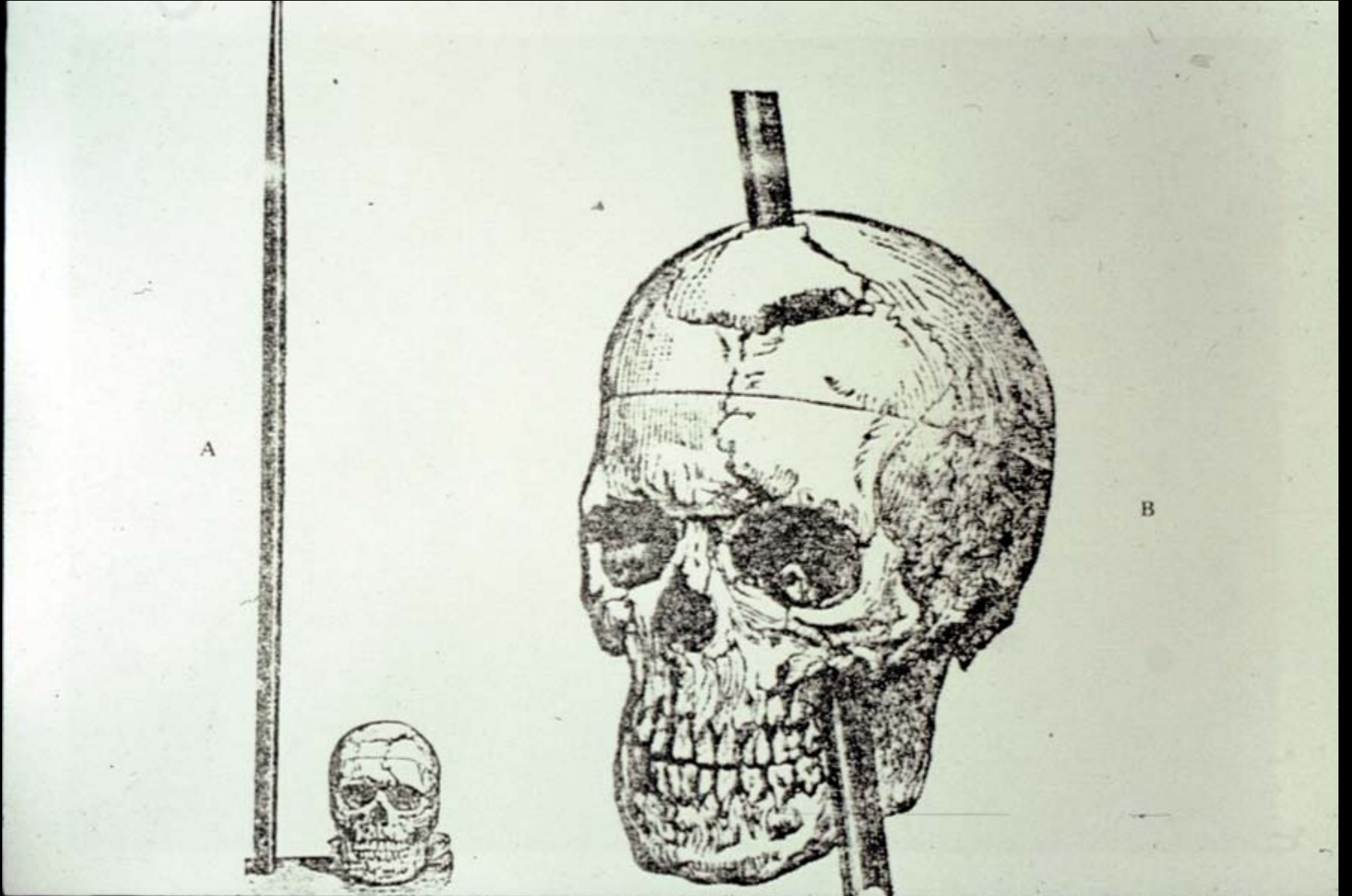


Figure 11.2. The leucotomes and the orbitoclasts in the case that Freeman carried in the pocket of his suit jacket. (Photograph by Jonathan Williams.)



A

B

CASE of PHINEAS GAGE

(September 13, 1848)

- **PREMORBID PERSONALITY**
"Efficient, well balanced, energetic, shrewd"
- **POST-INJURY**
 - Loss of the "balance between his intellectual faculties and animal propensities"
 - "Impatient of restraint or advice, when it conflicts with his desires"
 - "At times obstinate, yet capricious and vacillating-devising many plans of future operations which are no sooner arranged then are abandoned in turn for others appearing more feasible"
- "No longer Gage"

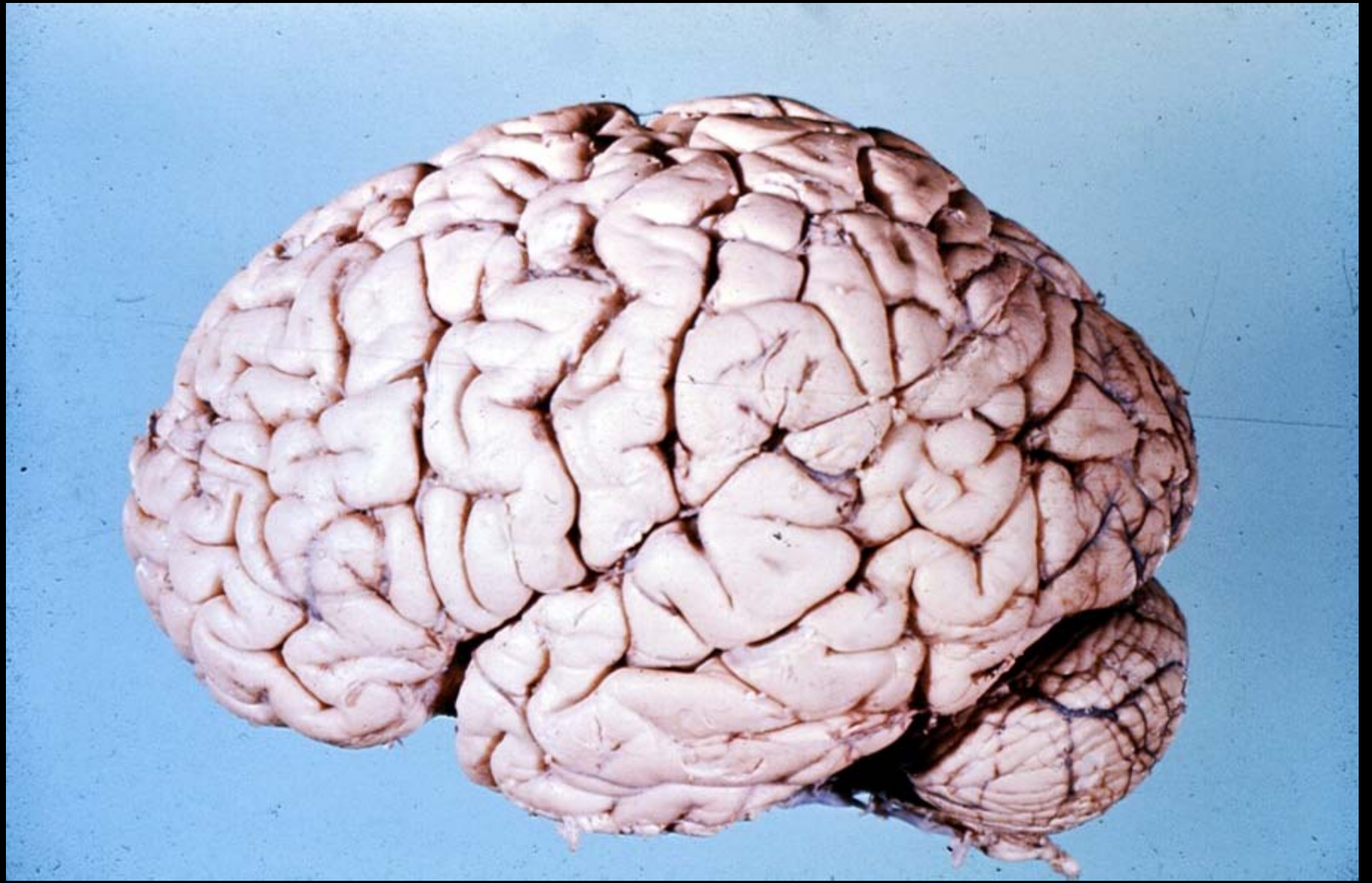
John Martyn Harlow, M.D.

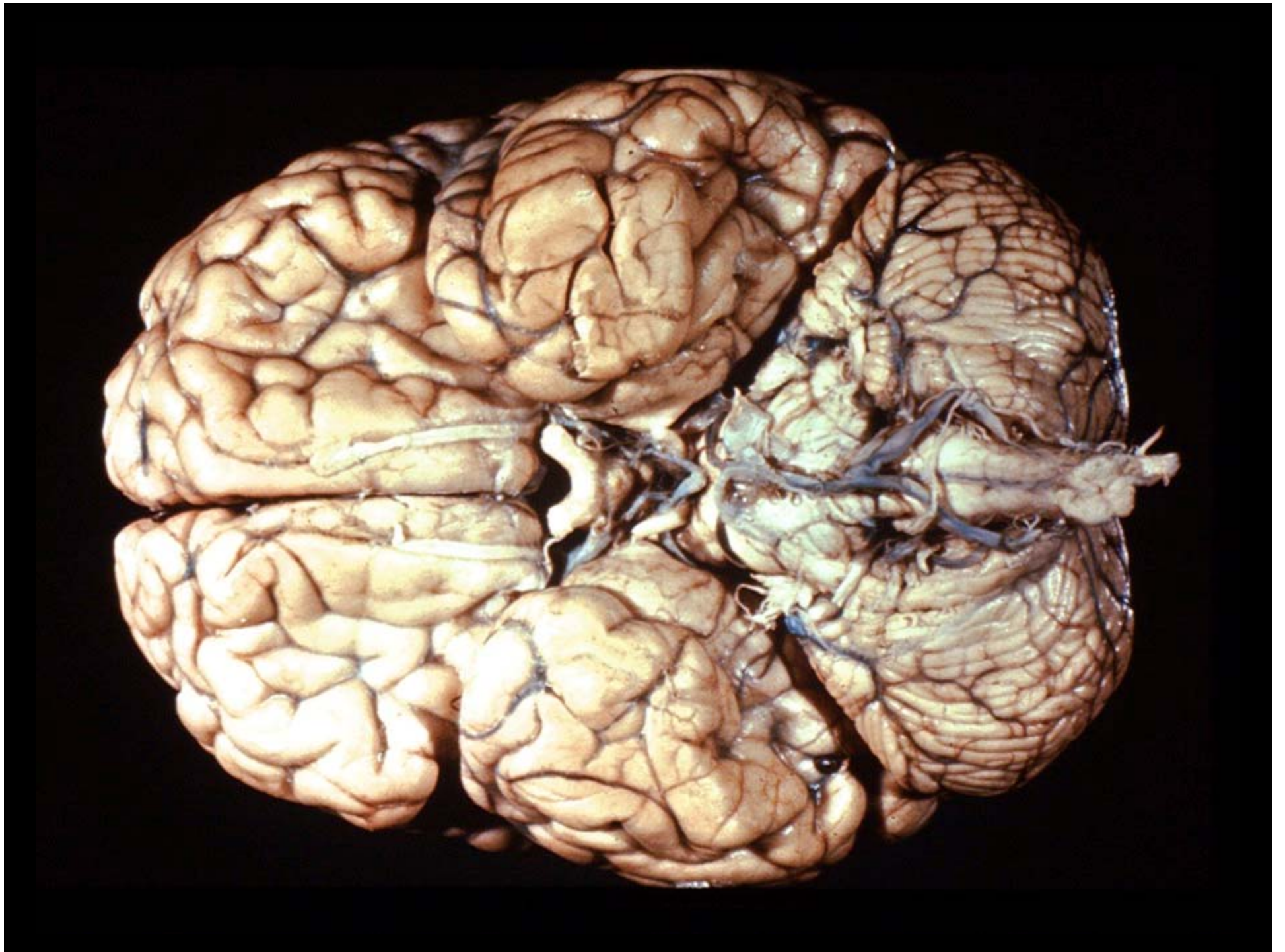


NEUROBEHAVIORAL CONSEQUENCES of TBI DORSOLATERAL PFC SYNDROME



- **EXECUTIVE SKILL DEFICITS**
- **IMPAIRMENT OF WORKING MEMORY**
- **FLAT AFFECT/PSEUDODEPRESSION**
- **STIMULUS-BOUND BEHAVIOR**







NEUROBEHAVIORAL CONSEQUENCES of TBI ORBITOFRONTAL PFC SYNDROME



- **RELATIVELY PRESERVED NEUROCOGNITIVE SKILLS**
- **IMPAIRED SOCIAL SKILLS/PSEUDOSOCIOPATHY**
- **DISINHIBITION/EMOTIONAL DYSREGULATION**
- **HYPOMANIA-MANIA/PSEUDOPSYCHOPATHY**

AGGRESSION in TBI SURVIVORS



- **REACTIVE in NATURE, OFTEN in RESPONSE to MINIMAL STIMULUS**
- **IS NOT USUALLY PLANNED or PREMEDITATED**
- **NOT USUALLY GOAL-DIRECTED**
- **EPISSODIC/EXPLOSIVE**
- **POST-EVENT REMORSE and EMOTIONAL DISTRESS**

SUICIDE RISK in TBI SURVIVORS



**INCREASED RISK of MAJOR DEPRESSION,
ASSOCIATED WITH DISINHIBITION**

INCREASED RISK of SUICIDE ATTEMPTS

- **Prior to TBI**
- **Years after TBI**
- **Associated with Premorbid History of Aggression**

SUICIDE RISK in TBI SURVIVORS



- **CHRONIC FEELINGS of HOPELESSNESS**
- **SOCIAL INSOLATION**
- **BELIEF that LIFE is not WORTH LIVING**

MANAGING ACUTE SUICIDAL/HOMICIDAL RISK



- **NECESSITATES IMMEDIATE ASSESSMENT** by a **QUALIFIED/LICENSED MENTAL HEALTH CLINICIAN**
- **DETERMINE NEED** for **ACUTE PSYCHIATRIC HOSPITALIZATION (VOLUNTARY or INVOLUNTARY)**
- **PRIMARY GOALS** for **INDIVIDUAL** are to **ENSURE SAFETY** and **FACILITATE STABILIZATION**
- **ENSURE SAFETY** of **OTHERS** or **SPECIFIED INTENDED VICTIMS**

CHALLENGES RE: ACCESSING MENTAL HEALTH SERVICES



- **EXAMINER INEXPERIENCED in EVALUATING PERSONS WITH ABI**
- **PRESENTATION in ER is PERCEIVED to be in CONFLICT with REPORTED CONCERNS REGARDING BEHAVIOR**
- **PRESUMPTION of COMPETENCY and ABILITY to CONTRACT for SAFETY**

CHALLENGES RE: ACCESSING MENTAL HEALTH SERVICES



- **PRESUMPTION** that **INDIVIDUAL** is **LESS/NOT** at **RISK BECAUSE** of **MOTOR, NEUROCOGNITIVE** or **OTHER DEFICITS**
- **INABILITY/REFUSAL** of **PSYCHIATRIC HOSPITAL/FACILITY** to **ACCOMMODATE INDIVIDUAL IN MILIEU** (e.g., physical care needs, neurocognitive impairments, etc.)
- **CONCERNS RE: DISCHARGE** and **DISPOSITION** (e.g., post-discharge placement options, homelessness, etc.)

ASSESSMENTS TO CONSIDER



- **NEUROPSYCHOLOGICAL EVALUATION**
(e.g., assessment of neurocognitive impairments which may compromise functioning and treatment goals/objectives)
- **NEUROPSYCHIATRIC ASSESSMENT** (e.g., mental status changes, medication questions)
- **NEUROLOGICAL ASSESSMENT** (e.g., R/O seizures; neurodiagnostic testing; evaluation of shunt status)

CRISIS HOTLINE NUMBERS



Suicide Prevention Lifeline Number:

1-800-273-TALK (8255)

National Domestic Violence Hotline:

1-800-799-SAFE (7233) or TTY 1-800-787-3224

National Child Abuse Hotline: 1-800-4-A-CHILD

Sexual Assault Hotline: 1-800-262-9800

Veterans Crisis Line: 1-800-273-8255 (PRESS 1)



CONTINUUM of SERVICE NEEDS

ACUTE INTERVENTIONS



- **EMERGENCY DEPARTMENT SERVICES**
- **SPECIALIZED INPATIENT CARE (e.g., Trauma Unit)**
- **EVALUATION and TREATMENT by MEDICAL SPECIALISTS (e.g., neurosurgery)**

POST-ACUTE INTERVENTIONS



- **INPATIENT/OUTPATIENT REHABILITATION**
- **SKILLED NURSING/LONG-TERM CARE FACILITY**
 - **Persistent Disorder of Consciousness**
 - **Slow to Recover**
 - **Progressive Disorder**
 - **Homeless with significant residual sequelae**
- **COMMUNITY-BASED SUPPORTS (e.g., VNA, Home Health Care)**

ONGOING TREATMENT NEEDS



- **NEUROLOGY**
- **NEUROPSYCHOLOGY**
- **SUBSTANCE ABUSE**
- **NEUROPSYCHIATRY**
- **REHABILITATIVE THERAPIES**
(e.g., maintenance PT/OT, cognitive remediation)

COMMUNITY-BASED SUPPORT NEEDS



- **SPECIAL EDUCATION**
- **VOCATIONAL REHABILITATION/EMPLOYMENT**
- **AVOCATIONAL SERVICES (e.g., Day Program, Volunteer Opportunities, Club house)**
- **COMMUNITY LIVING SUPPORTS (e.g., Personal Care, Supported Living Services, 24/7 residential)**
- **ACCESSIBLE/AFFORDABLE HOUSING**

COMMUNITY-BASED SUPPORT NEEDS



- **COMMUNITY INTEGRATION** (e.g., access via transportation)
- **CASE MANAGEMENT** (e.g., advocacy; linkage to resources and entitlements)
- **SOCIAL/RECREATIONAL/LEISURE OPPORTUNITIES**
- **ASSISTIVE TECHNOLOGY**
- **SUPPORT SERVICES for FAMILY/SIGNIFICANT OTHERS** (e.g., respite, BIA Support Groups)



**FAMILY/SIGNIFICANT OTHER
RESPONSE TO TBI**

DEFINITION of "FAMILY"



- **SYSTEMS of INDIVIDUALS, with INDIVIDUAL and GROUP GOALS**
- **TIES of KINSHIP (e.g., parent/child)**
- **MARRIAGE (e.g., spouse, ex-spouse)**
- **SUSTAINED INTIMACY (e.g., close friends, intimate partner)**

IMPACT of TBI on FAMILY



- **SUDDEN/CATASTROPHIC EVENT for WHICH NO ONE IS PREPARED**
- **ABRUPT DISRUPTION in WORK, COMMUNITY, and FAMILY-RELATED ROLES, RESPONSIBILITIES and RELATIONSHIPS**
- **PSYCHOLOGICAL STRESS/DISTRESS and ACUTE GRIEF**
- **FINANCIAL COMPROMISE/JEOPARDY**

IMPACT of TBI on FAMILY



- **SOCIAL ISOLATION/WITHDRAWAL**
- **ALTERATION of FUTURE PLANS and LIFE GOALS**
- **DISINTEGRATION of PRIMARY RELATIONSHIPS (e.g., divorce)**
- **LONG TERM/CHRONIC EFFECTS**
(e.g., psychiatric disorder; illness; fear/anxiety)

AMBIGUOUS LOSS



- **ASSOCIATED WITH LOSS THAT MAY BE CATASTROPHIC**
- **EXTERNAL SOURCE v.s. INTERNAL**
- **NATURE of LOSS is DIFFICULT to CLARIFY/VERIFY**
- **FINAL OUTCOME and RETURN of INDIVIDUAL (Psychological/Physical) UNCLEAR**
- **UNRESOLVED GRIEF and LACK of CLOSURE**

AMBIGUOUS LOSS



- **TYPE I: Physical Absence/Psychological Presence (e.g., kidnapping, MIA, natural disasters, etc.)**
- **TYPE II: Physical Presence/Psychological Absence (e.g., Alzheimer's Disease, DOC, etc.)**

FIVE STAGES of GRIEF



- DENIAL
- ANGER
- BARGAINING
- DEPRESSION
- ACCEPTANCE

Elizabeth Kübler-Ross

"On Death and Dying", 1969

RESILIENCY GUIDELINES



- **Finding Meaning**
- **Tempering Mastery**
- **Reconstructing Identity**
- **Normalizing Ambivalence**
- **Revising Attachment**
- **Discovering Hope**

BRAIN INJURY ASSOCIATION of AMERICA



TO FIND BIA IN YOUR STATE:

www.biausa.org/state-affiliates.htm

**NATIONAL ASSOCIATION of STATE HEAD
INJURY ADMINISTRATORS**

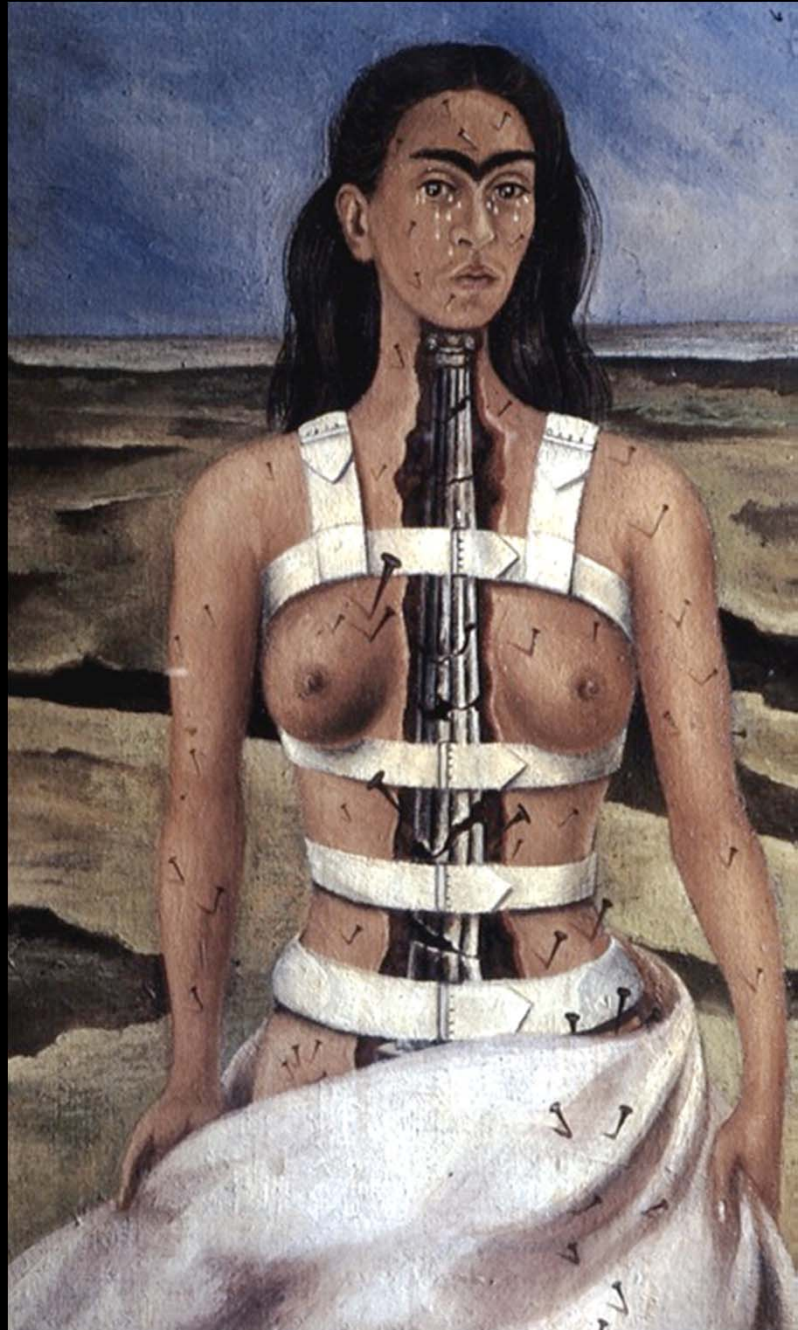


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*The Meaning Of Life Always Changes,
But Never Ceases To Be.*

Viktor E. Frankl

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