# Sexually Speaking:

# Brain Injury, Development and Behavior

## Part 2: Addressing Problematic Sexual Behavior

Francesca LaVecchia, PhD

**July 21, 2021**

**2021 Webinar Series**

# Welcome!

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Director, Professional Development

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NASHIA

# About NASHIA

Nonprofit organization created to assist
State government in promoting partnerships
and building systems to meet the needs
of individuals with brain injury
and their families.

NASHIA

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# Today's Webinar

- Continuing Education Credits Available: SW and CRCC
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- Recorded and archived: http://www.nashia.org/Webinars.asp

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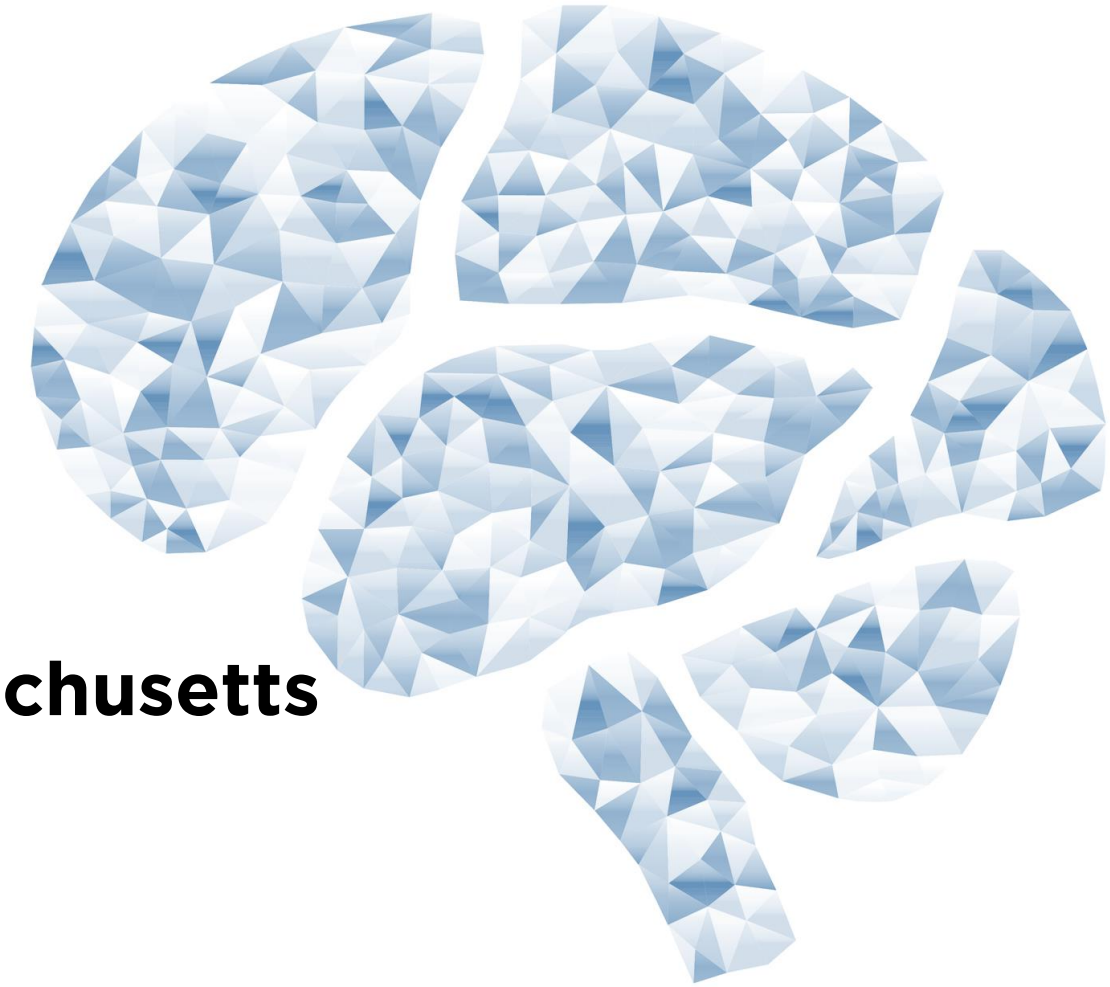
# Today's Presenter



**Francesca LaVecchia**
**Clinical Consultant**
**Brain Injury Association of Massachusetts**

# PROBLEMATIC SEXUAL BEHAVIOR IN PERSONS WITH ACQUIRED BRAIN INJURY

**presented by**

**FRANCESCA LaVECCHIA, Ph.D.**

**Clinical Neuropsychologist**

# Learning Objectives

- Describe neurological correlates of changes in sexual behavior in persons with acquired brain injury
- Highlight potential consequences of misdiagnosis/treatment
- Describe guidelines for assessment and management of problematic sexual behavior in community-based programs and settings

# ACQUIRED BRAIN INJURIES

- METABOLIC
- NEUROTOXIC
- NEOPLASTIC
- NEURODEGENERATIVE
- INFECTIOUS
- NEUROVASCULAR
- TRAUMATIC

# NEUROBEHAVIORAL DISORDERS ASSOCIATED with ABI

- ETIOLOGY
- AGE of ONSET
- SITES and SEVERITY of INJURY
- PROGRESSIVE *vs* NON-PROGRESSIVE
- GENDER
- IDENTIFICATION of NEUROBEHAVIORAL DISORDER and TREATMENT
- PRE and POST-INJURY RISK FACTORS

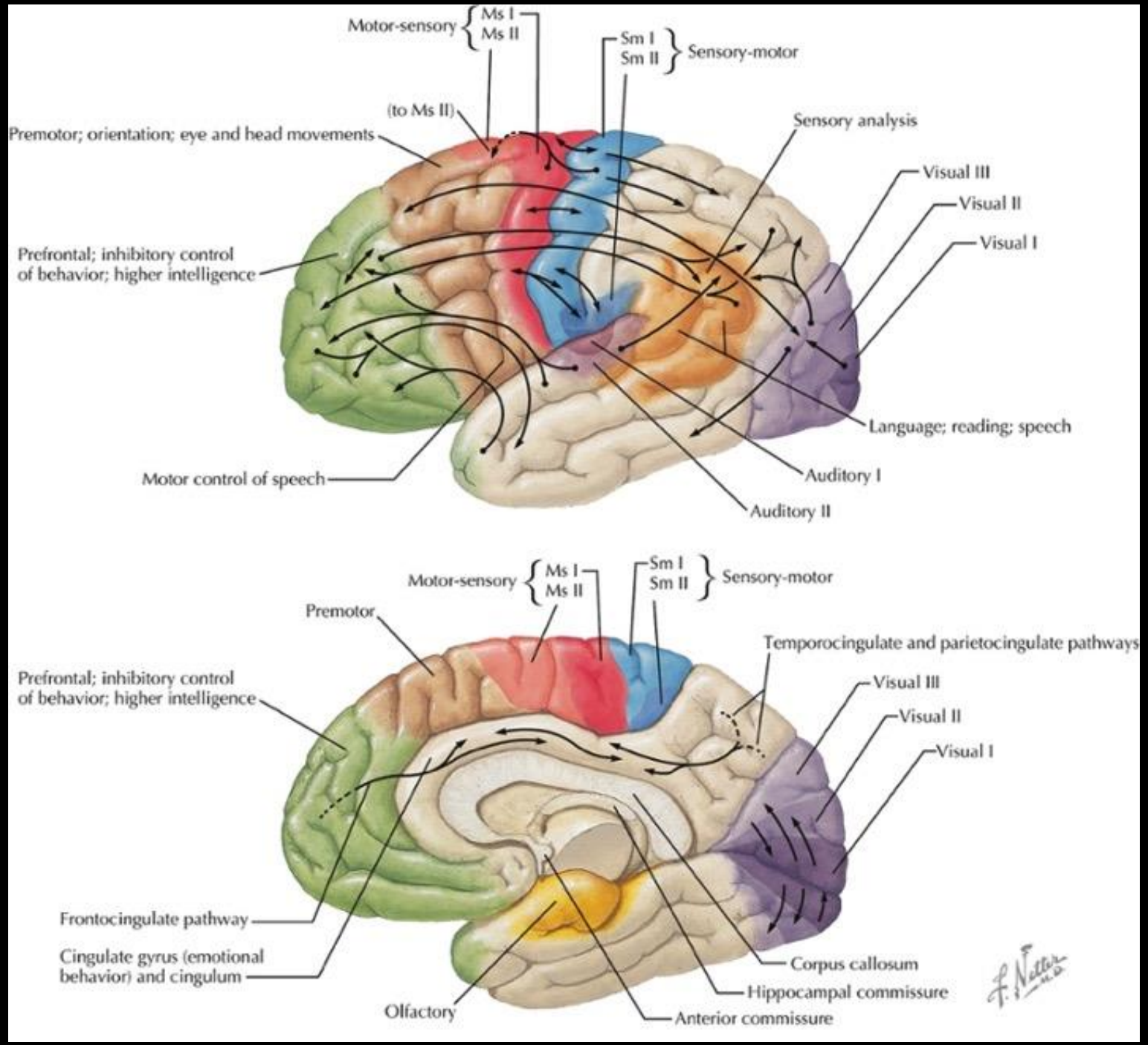
# OTHER PSB RISK FACTORS

- **PRE-INJURY HISTORY of PSB**
- **HISTORY of AGGRESSIVE or ANTISOCIAL BEHAVIOR or other behavioral/psychiatric disorders**
- **PRE/POST-INJURY CRIMINAL HISTORY**
- **HISTORY of SEXUAL ABUSE**
- **ACTIVE SUBSTANCE ABUSE**
- **PRESCRIBED MEDICATIONS (e.g., androgen supplements)**

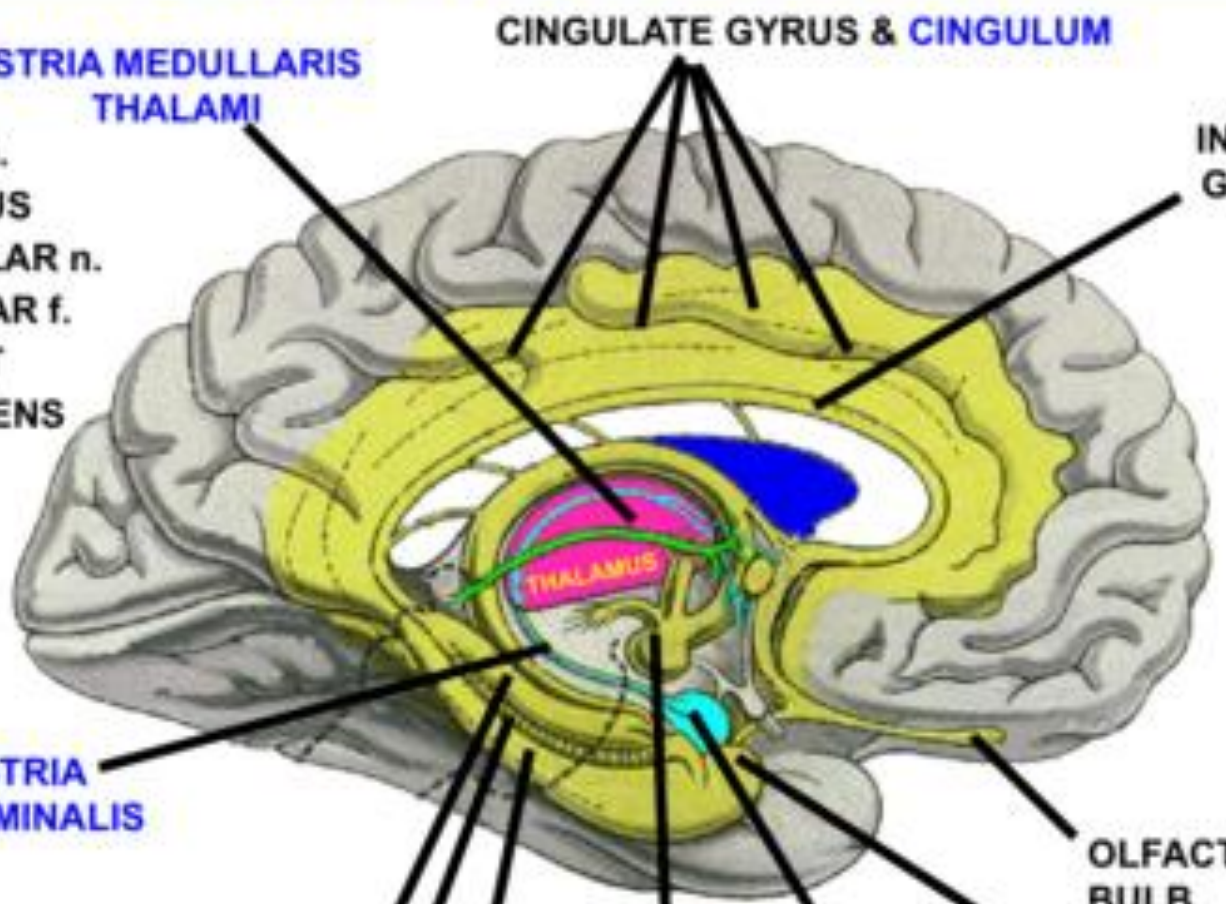
# NEUROLOGICAL CORRELATES: HUMAN SEXUAL BEHAVIOR

- **Not adequately explored in clinical encounters with patients**
- **Effects of lesions primarily reviewed in case studies, incidental observations, or changes related to a specific disease/disorder**
- **Group studies primarily involve patients with temporal lobe epilepsy or psychiatric patients who underwent amygdalotomy for aggression or hyperactivity**

***Baird AD, Wilson SJ, Bladin PF, et al, 2007 (review of literature, 1937-2005)***


Motor-sensory
Ms I
Ms II
Sm I
Sm II
Sensory-motor
(to Ms II)
Premotor; orientation; eye and head movements
Sensory analysis
Visual III
Visual II
Visual I
Prefrontal; inhibitory control of behavior; higher intelligence
Language; reading; speech
Motor control of speech
Auditory I
Auditory II
Motor-sensory
Ms I
Ms II
Sm I
Sm II
Sensory-motor
Premotor
Temporocingulate and parietocingulate pathways
Prefrontal; inhibitory control of behavior; higher intelligence
Visual III
Visual II
Visual I
Frontocingulate pathway
Cingulate gyrus (emotional behavior) and cingulum
Corpus callosum
Hippocampal commissure
Olfactory
Anterior commissure

# LIMBIC SYSTEM



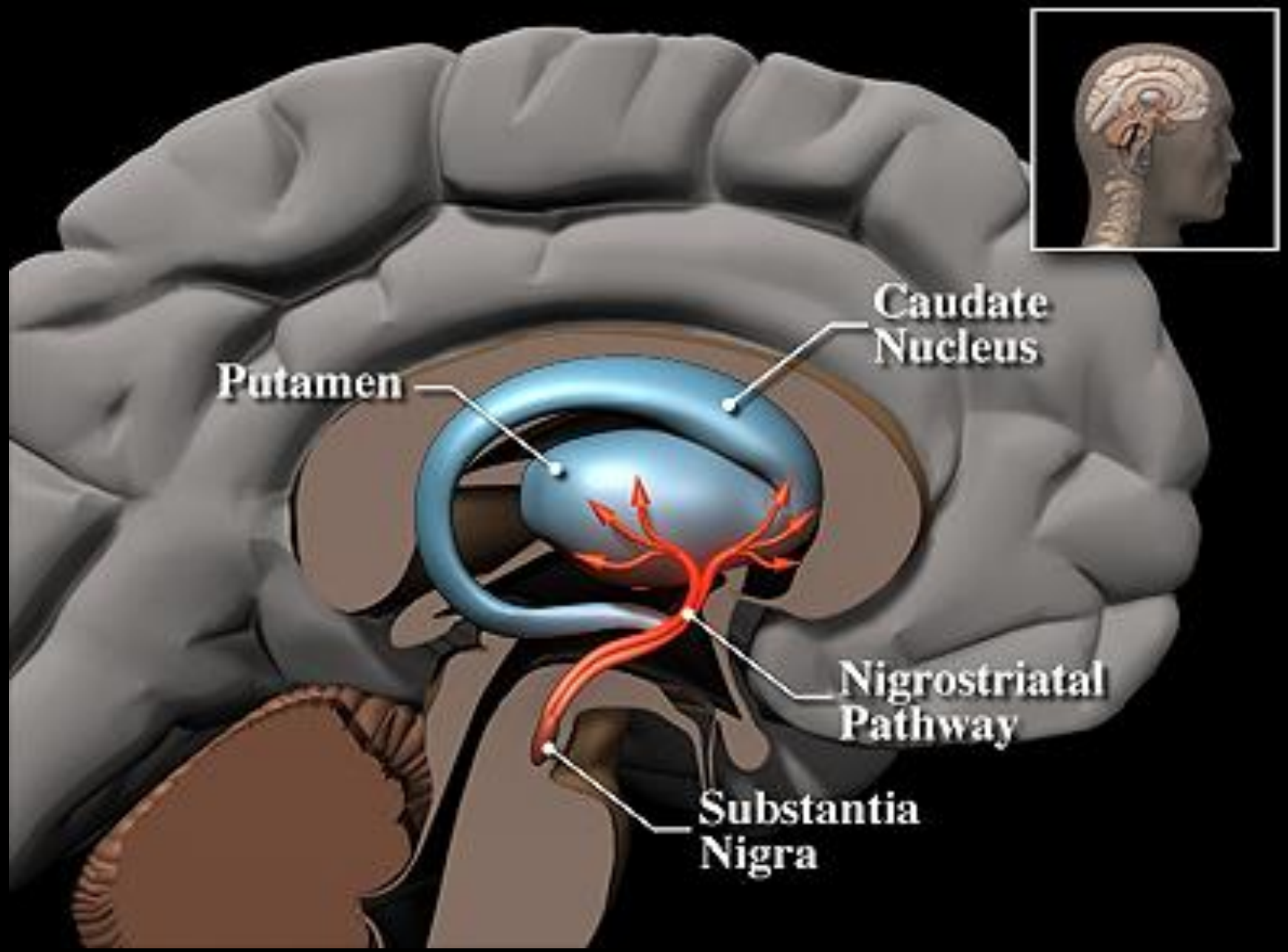

1

# NEUROANATOMICAL CORRELATES

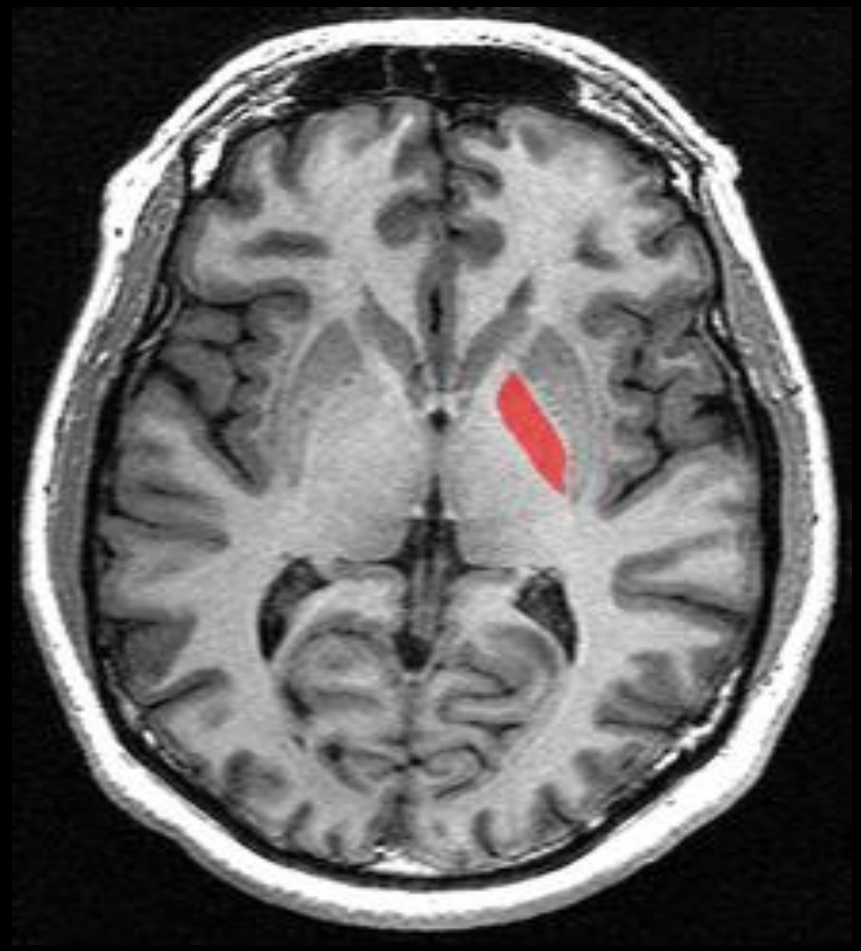
- Septal Regions: pleasure response; sexual arousal
- Hypothalamus: sex drive; lesions of ventromedial region: diminished sex drive
- Ansa lenticularis and globus pallidus; sex drive; hypersexuality
- Frontal Lobes: control of sexual behavior
- Paracentral lobule and parietal lobe: genital sensation
- Temporal lobes and amygdala: altered sexual behavior

# ABI and ALTERED SEXUAL BEHAVIOR

- **HYPERSEXUALITY**
- **HYPOSEXUALITY**
- **CHANGE of SEXUAL PREFERENCE**
- **PROBLEMATIC SEXUAL BEHAVIOR, which may result in criminal charges, arrest, conviction, sex offender status**


Caudate
Nucleus
Putamen
Nigrostriatal
Pathway
Substantia
Nigra

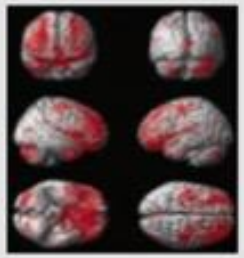
# GLOBUS PALLIDUS



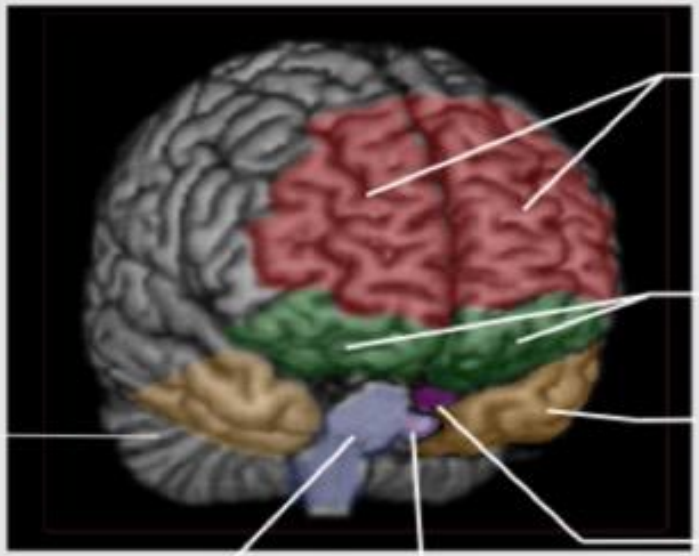
# SEXUAL DISINHIBITION/HYPERSEXUALITY

- **NEUROSURGICAL INTERVENTIONS (e.g., pallidotomy for Parkinson's Disease; frontal lobotomy; unilateral temporal lobectomy; VP shunt for hydrocephalus)**
- **NEURODEGENERATIVE DISEASE (e.g., Huntington's Disease)**
- **PREFRONTAL CORTEX LESIONS (e.g., TBI)**
- **MISINTERPRETATION of INTENT in clinical setting or provision of care context (e.g., rehabilitation, skilled nursing care)**

## Brain regions vulnerable to TBI and relationship to neurobehavioral sequelae



A



B

**Dorsolateral prefrontal cortex**
(executive function, working memory, sustained and complex attention, memory retrieval, abstraction, judgement, insight, problem solving)

**Orbitofrontal cortex**
(emotional and social responding, social comportment)

**Temporal polar cortex**
(memory retrieval, sensory-limbic integration)

**Amygdala**
(emotional learning and memory, fear conditioning)

**Cerebellum**
(coordination, working memory, mood regulation)

**Ventral brain stem**
(arousal, ascending modulatory neurotransmitter systems)

**Entorhinal-hippocampal complex**
(declarative memory, sensory gating, attention)

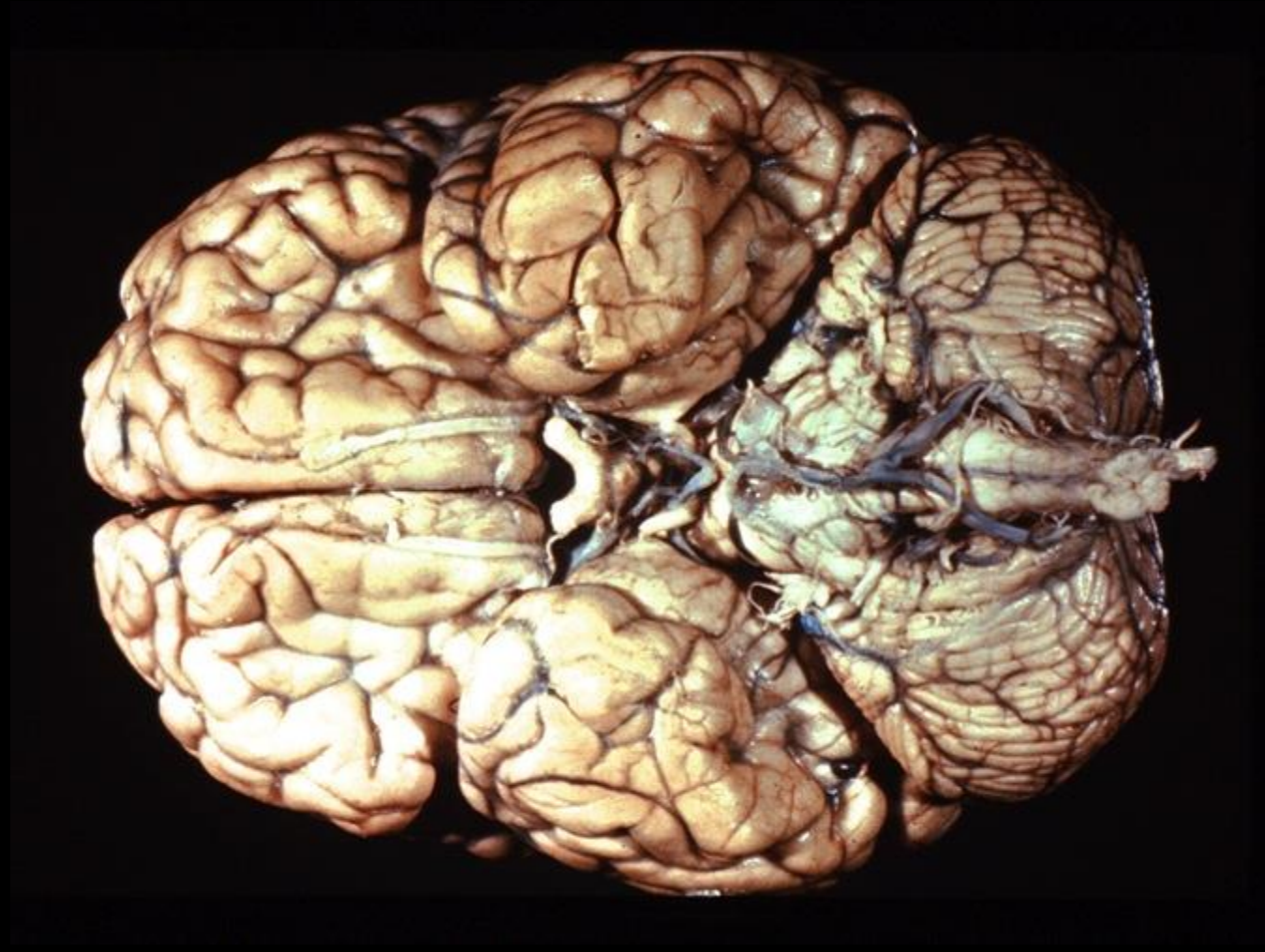
# DORSOLATERAL PREFRONTAL CORTEX (PFC) SYNDROME

- **NEUROCOGNITIVE IMPAIRMENTS (e.g., deficits on tests of memory, executive skill, perception); may also include deterioration in general intellectual ability**
- **DIMINISHED FLUENCY: Verbal (L hemisphere or bilateral); non-verbal (R hemisphere)**
- **DISRUPTION in the REGULATORY ROLE of LANGUAGE**
- **ABULIA: (*G: aboulia: lack of will*) diminished capacity for making decisions, initiating and sustaining purposeful, goal-directed behavior**

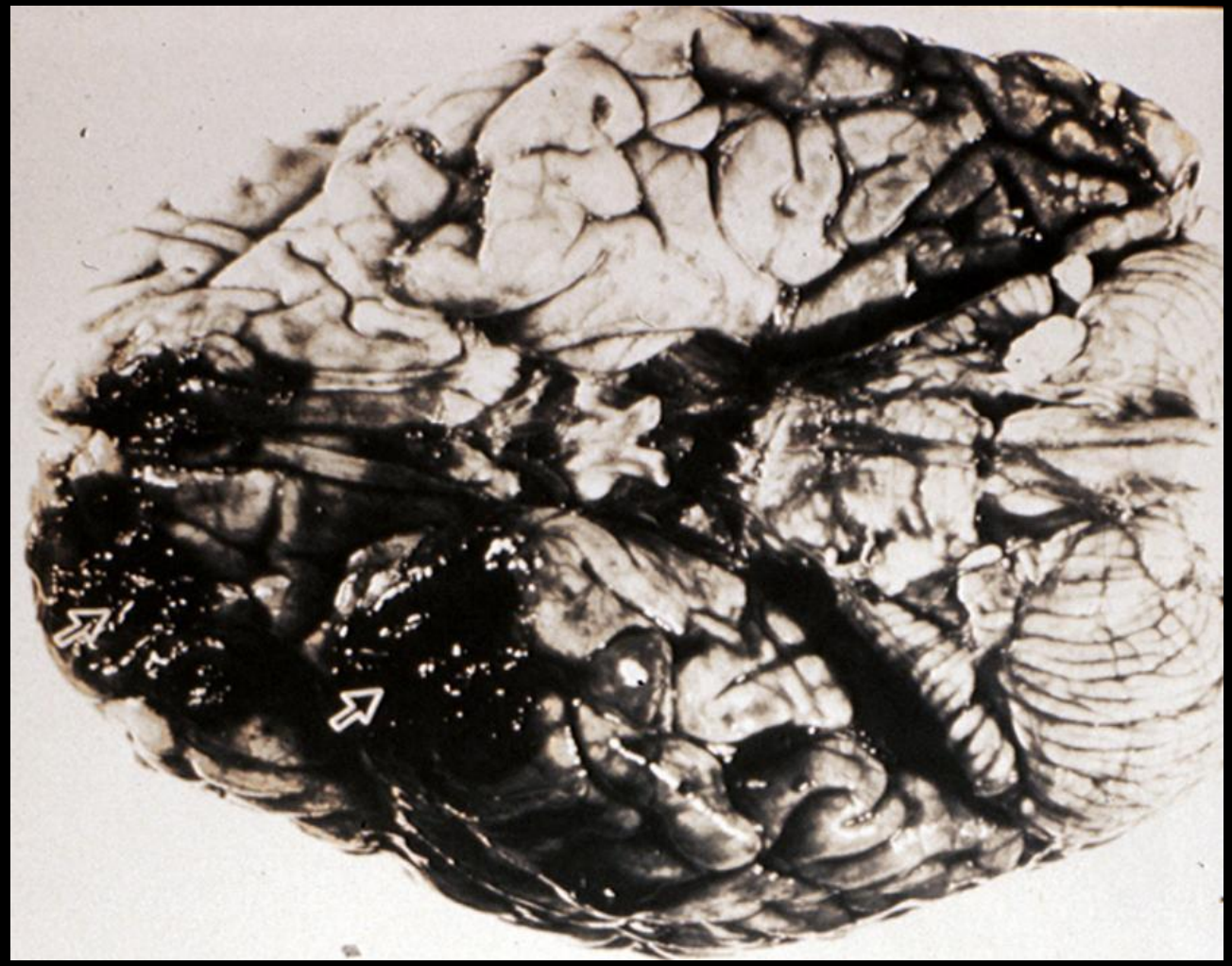
# DORSOLATERAL PREFRONTAL CORTEX (PFC) SYNDROME

- **APATHY: indifference; “unmotivated” (Disorder of Diminished Motivation-DDM)**
- **STIMULUS-BOUND BEHAVIOR or AFFFECT (e.g., social dependency)**
- **PSEUDODEPRESSION; may exhibit episodic disinhibition**

# HUMAN BRAIN:VENTRAL SURFACE



# TRAUMATIC BRAIN INJURY
## VENTRAL SURFACE



# ORBITOFRONTAL PREFRONTAL CORTEX (PFC) SYNDROME

- RELATIVELY PRESERVED NEUROCOGNITIVE SKILLS
- COMPROMISED INSIGHT, DECISION-MAKING, PLANNING, JUDGEMENT
- IMPULSIVITY & DIMINISHED CAPACITY for RECOGNIZING or ANTICIPATING the CONSEQUENCES of ONE'S BEHAVIOR
- IRRITABILITY & EMOTIONAL LABILITY, often with minimal provocation

# ORBITOFRONTAL PREFRONTAL CORTEX (PFC) SYNDROME

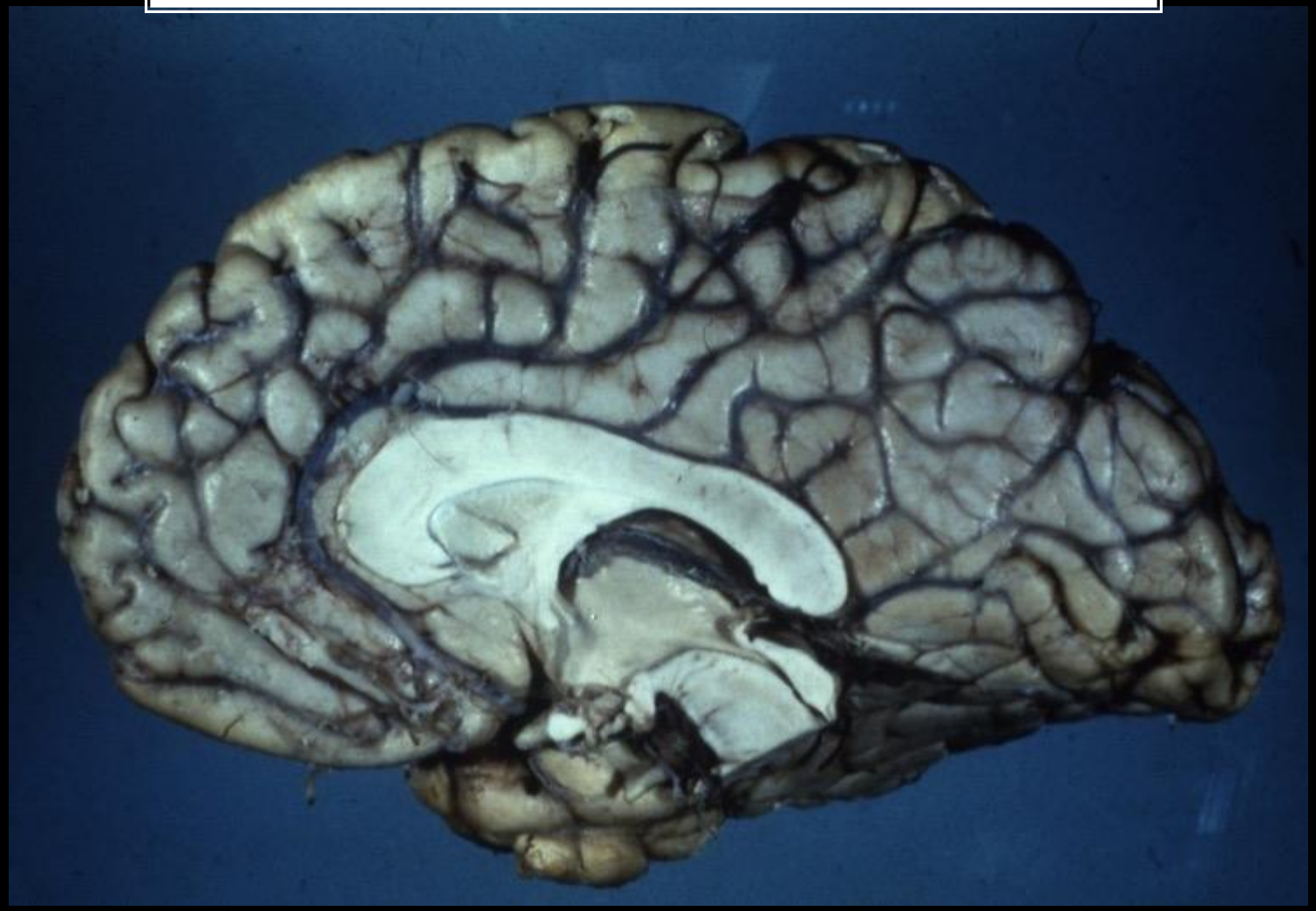
- **INAPPROPRIATE JOCULARITY** (*Witzelsucht*); **puerile behavior**
- **STEREOTYPICAL, but CORRECT MANNERS**
- **BEHAVIORAL INFLEXIBILITY (e.g., perseveration)**
- **MOOD: Euphoria; Hypomania/Mania**
  **(R hemisphere> L hemisphere)**

# ORBITOFRONTAL PREFRONTAL CORTEX (PFC) SYNDROME

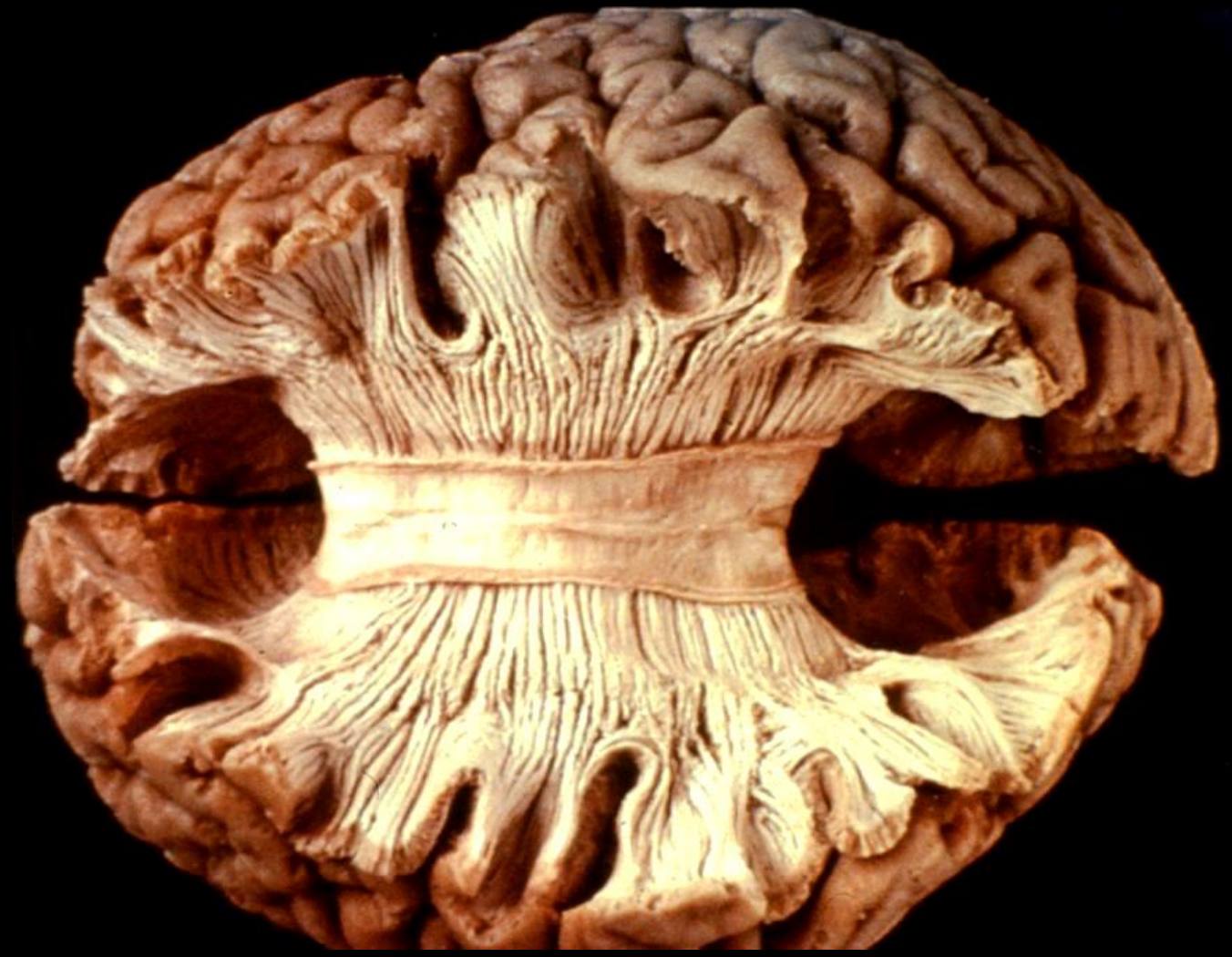
**ACQUIRED SOCIOPATHY(pseudosociopathy; pseudopsychopathy), which may be evidenced in:**

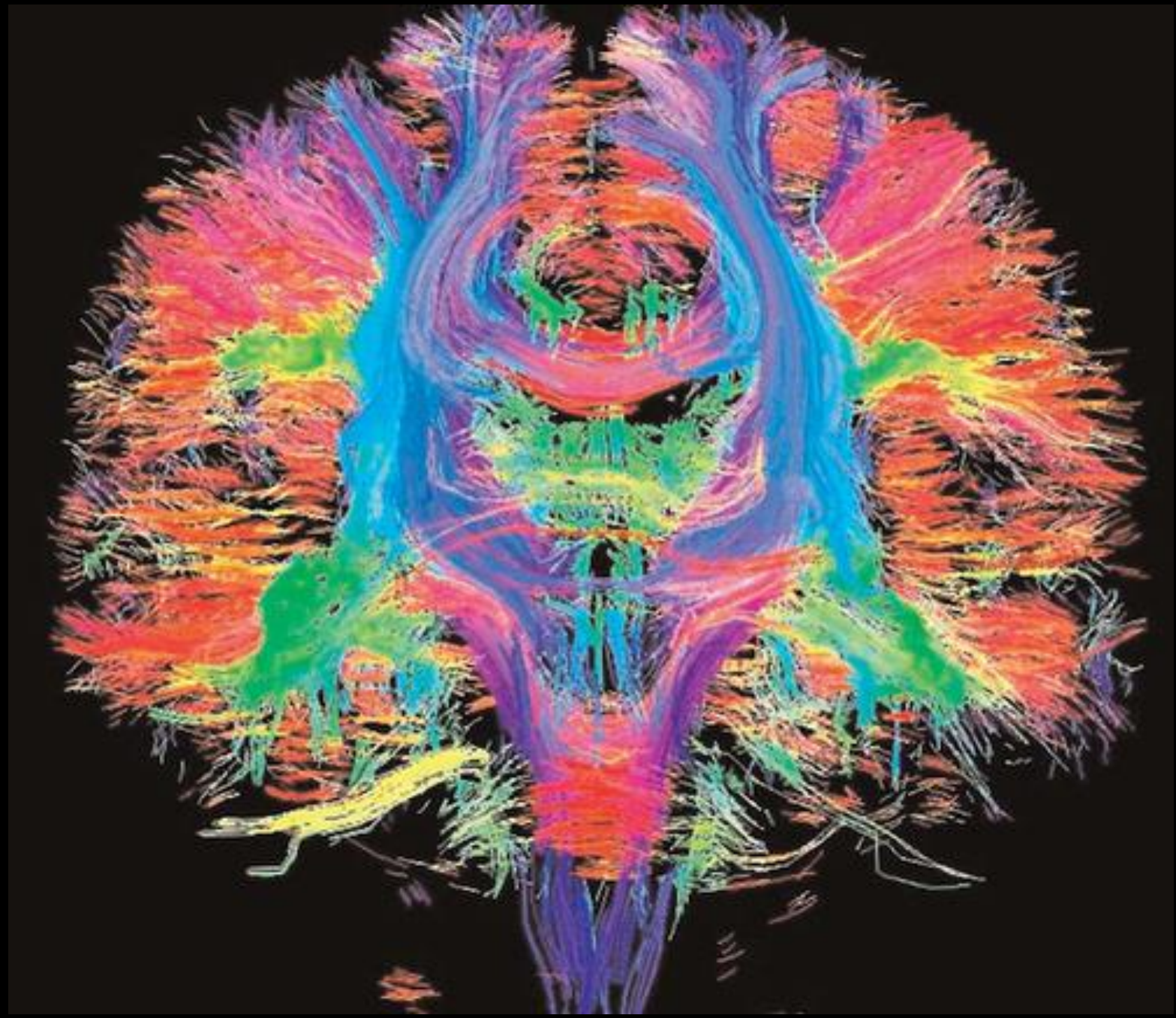
- **Lack of empathy/concern for others; narcissism**
- **Impaired social judgement**
- **Social and/or physical intrusiveness**
- **Disinhibition/ emotional dysregulation: verbal, physical. sexual, which may be aggressive (e.g., sexual assault; PSB)**
- **May be associated with lack of awareness, or minimizing the significance of deficits/problematic behaviors** *(anosognosia; anosodiaphoria);* **R hemisphere> L hemisphere ABI)**

# MEDIAL SURFACE: R HEMISPHERE

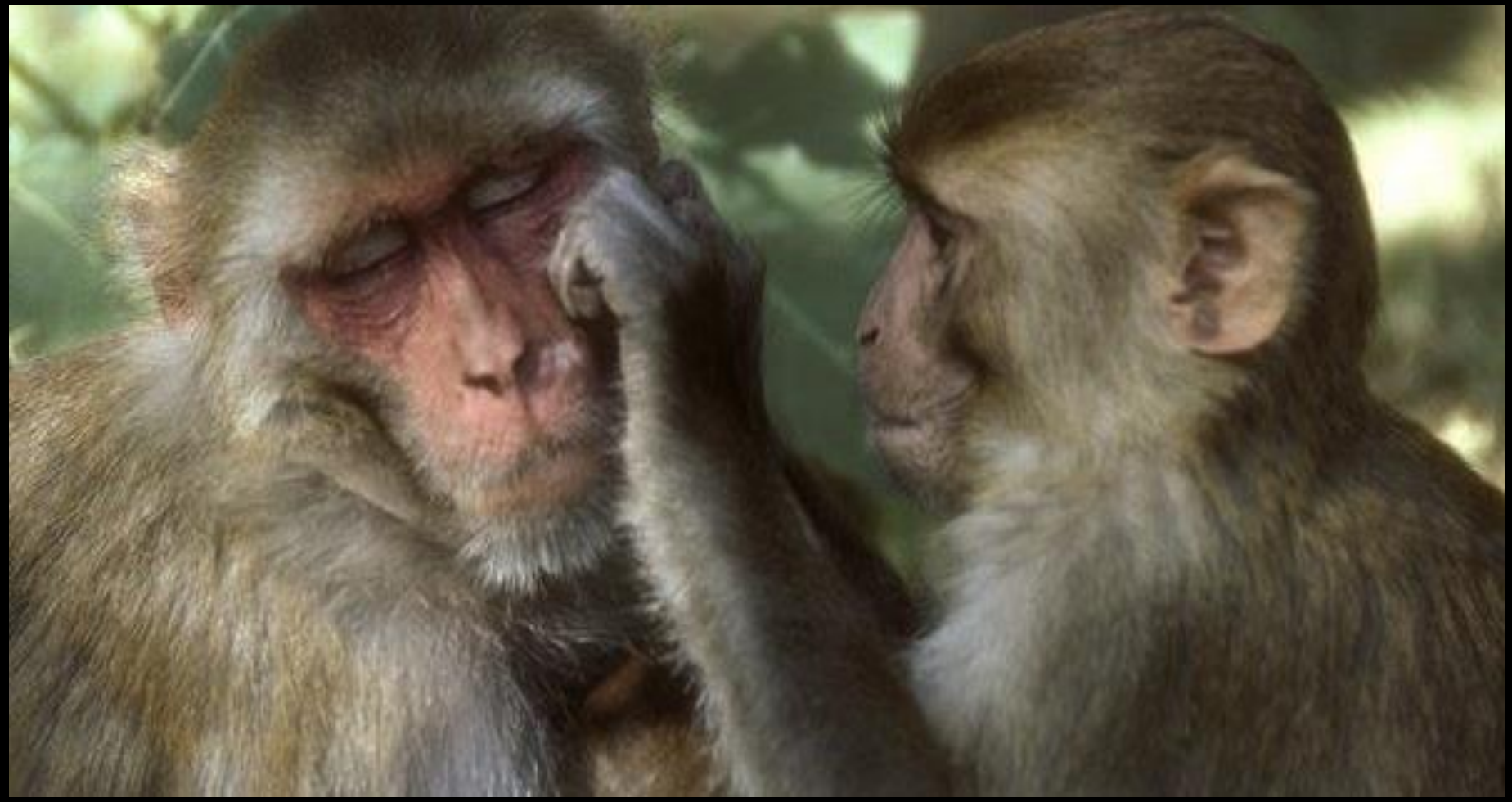


# CORPUS CALLOSUM





# KLUVER-BUCY SYNDROME
## [RHESUS MONKEYS]



# KLUVER-BUCY SYNDROME DISCONNECTION DISORDER

- Hyperorality; bulimia (human studies)
- Hypermetamorphosis (impulsive reactivity to stimuli)
- Diminished aggressiveness; flat affect
- Indiscriminant sexual behavior (autosexual, heterosexual, homosexual); altered sexual orientation; verbal sexual disinhibition
- Visual agnosia (“psychic blindness”) and prosopagnosia
- Associated with amnestic disorder

# VISUAL AGNOSIA

- Inability to recognize objects
- Perception, acuity, visual fields, and scanning are adequate
- May be associated with dyslexia, achromatopsia (loss of color vision), and/or prosopagnosia (e.g., impaired facial recognition)

# KLUVER-BUCY SYNDROME

- Neuropathology: almost all cases exhibit medial bitemporal lesions
- Associated with:  Herpes Simplex Encephalitis (HSE); TBI;  bilateral temporal lobectomy for  Tx of intractable epilepsy; neurodegenerative disease (e.g., Frontotemporal Dementia/Pick's Disease)

# GENITAL AUTOMATISMS

- May be evidenced in fondling, grabbing or scratching of genitals and associated with temporal lobe epilepsy (ictal or post-ictal period); amnesia for event
  - males > females, without erection/ejaculation
  - unilateral hand automatism
  - may be associated with peri-ictal urinary urge

- May manifest as hypermotor sexual automatism, evidenced in pelvic thrusting, kicking, rocking; may be associated with genital manipulation (orbitofrontal seizures)

# OTHER SEXUAL BEHAVIORS ASSOCIATED WITH SEIZURES

- **PARIETAL LOBE SEIZURES: heightened arousal; genital sensations, which individual may perceive as “ego alien”, irritating, frightening; conscious during seizure; involvement of the paracentral lobule: lateralized paresthesias**

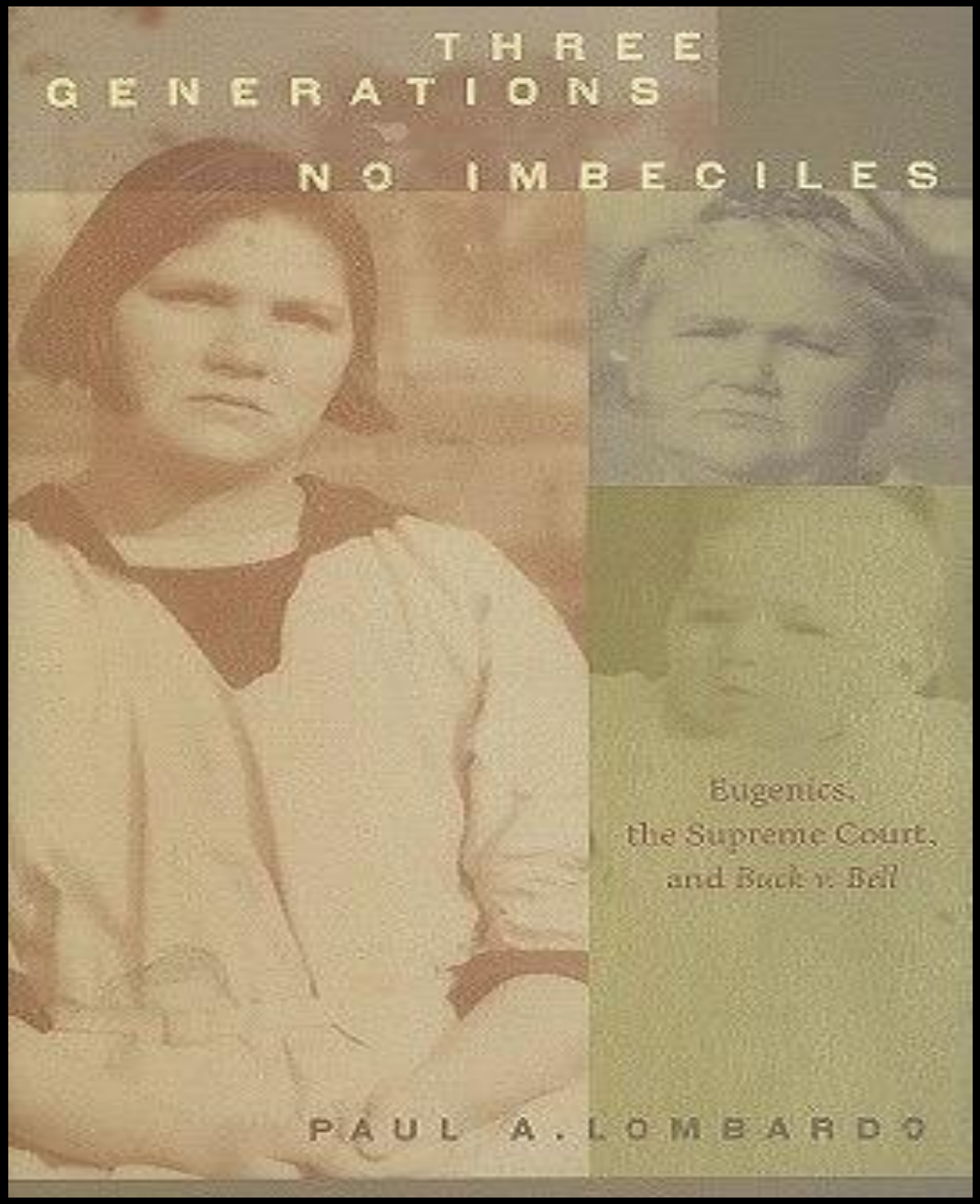
- **SEXUAL AND ORGASMIC AURAS (e.g., generalized tingling)**

# HEALTH CARE DISPARITIES and SEIZURES (NINDS)

- Minority populations have higher incidence of epilepsy than whites (e.g., Native Americans have more than double prevalence)
- Of 3.2 million Americans with epilepsy, 40% are women of child bearing age, but few minority women seek care
- Incidence of status epilepticus (prolonged seizure) is significantly higher among African Americans than non-African Americans, particularly in young and elderly

# HEALTH CARE DISPARITIES and ABI

- **GEOGRAPHIC and CULTURAL ISOLATION**
- **SOCIOECONOMIC STATUS**
- **LACK of ACCESS to CLINICAL SPECIALISTS**
- **LACK of TRANSLATION SERVICES and CULTURAL COMPETENCE of CLINICIANS**
- **LACK of KNOWLEDGE re: ethnopharmacology; prescribing medications for individuals with known neurological disorders/conditions**


THREE GENERATIONS
NO IMBECILES
Eugenics, the Supreme Court, and Buck v. Bell
PAUL A. LOMBARDO

# BUCK FAMILY

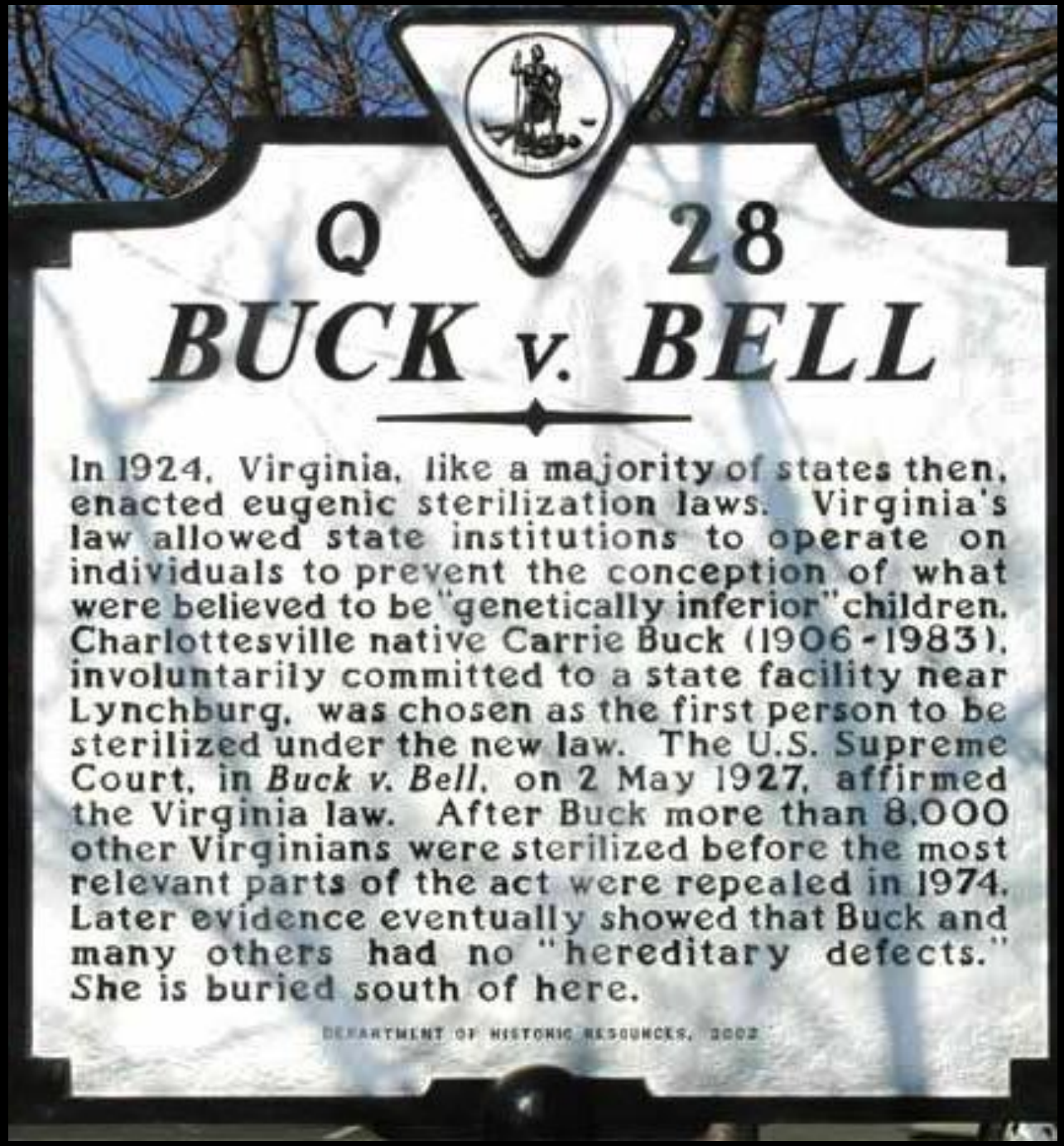
- **EMMA BUCK: Widow accused of being a prostitute, immoral, and a pauper; had three children; committed**
- **CARRIE BUCK: daughter of E. Buck had been adopted and raped by nephew of adoptive mother, who committed her to Virginia State Colony for Epileptics and Feebleminded, in response to pregnancy resulting from the rape; had been attending school with no evidence of intellectual disability; sterilized**
- **DORIS BUCK: sister of C. Buck sterilized at age 13**
- **VIVIAN BUCK: daughter of C. Buck, without evidence of intellectual disability; died of measles complications**

# BUCK *v.* BELL CASE
# 1927

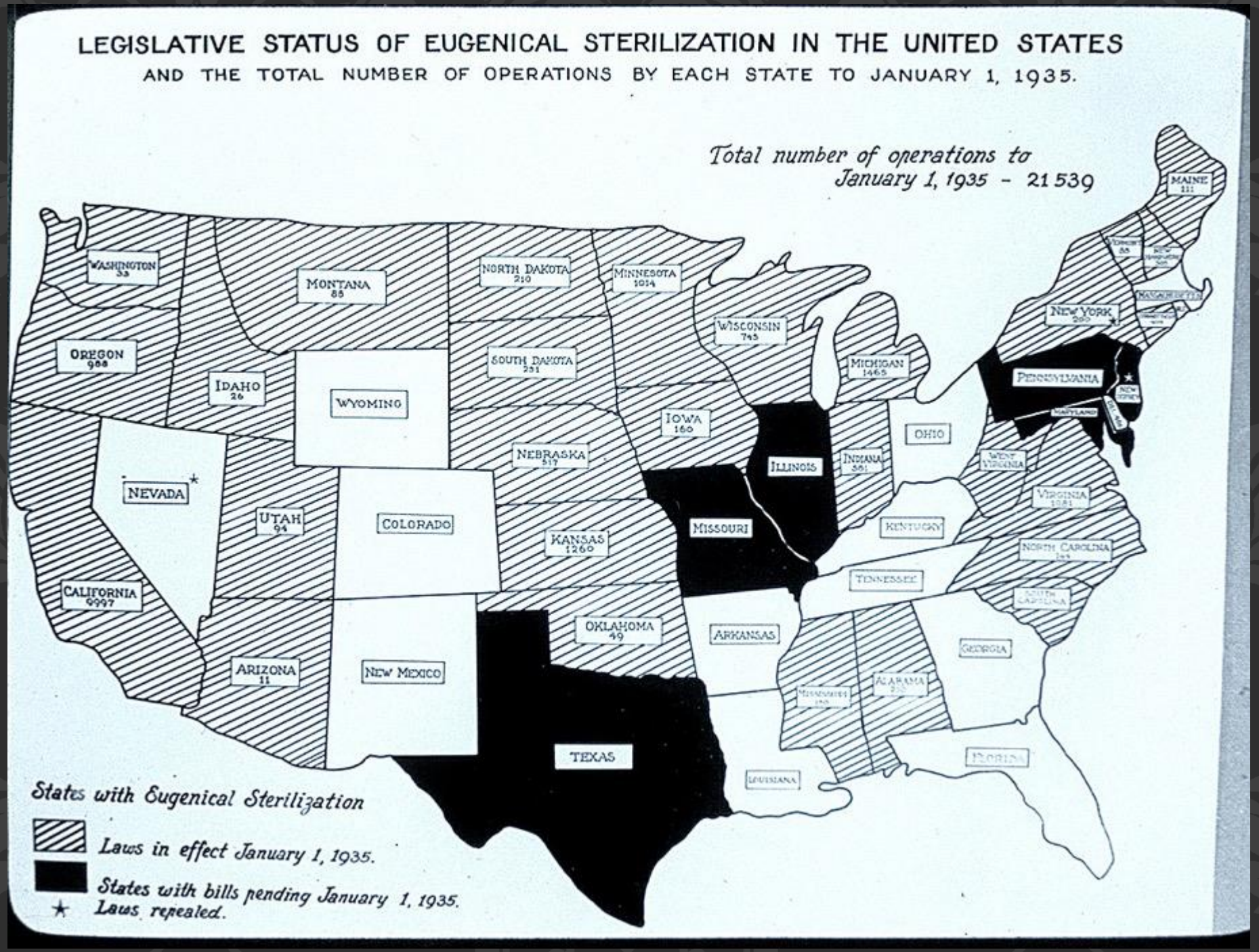
**“It is better for all the world if instead of waiting to execute degenerative offspring for crime, or to let them starve for imbecility, society can prevent those who are manifestly unfit from continuing their kind.”**

**“Three generations of Imbeciles are enough”**

**Justice Oliver Wendell Holmes Jr.**

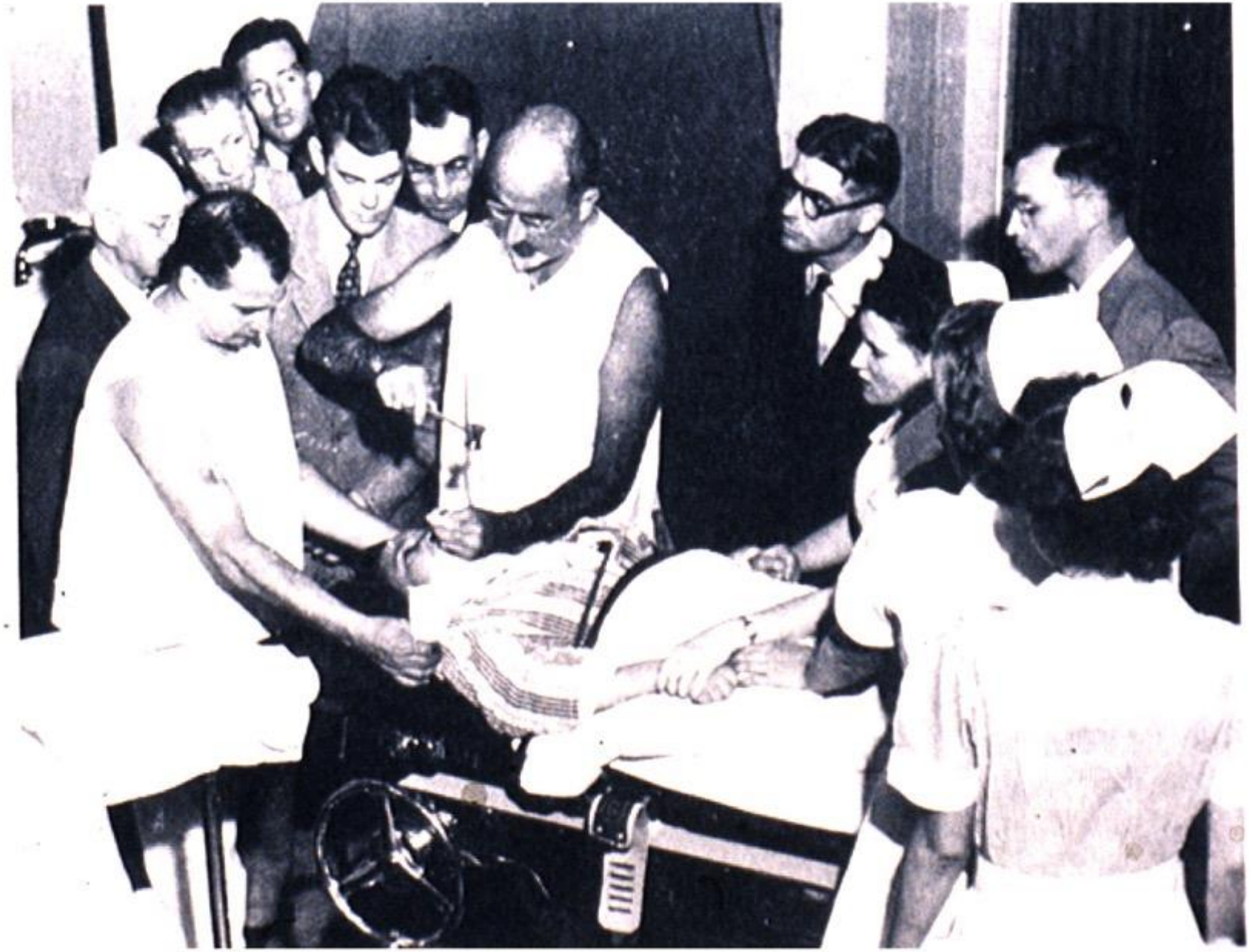

Q 28
BUCK v. BELL
In 1924, Virginia, like a majority of states then, enacted eugenic sterilization laws. Virginia's law allowed state institutions to operate on individuals to prevent the conception of what were believed to be "genetically inferior" children. Charlottesville native Carrie Buck (1906-1983), involuntarily committed to a state facility near Lynchburg, was chosen as the first person to be sterilized under the new law. The U.S. Supreme Court, in *Buck v. Bell*, on 2 May 1927, affirmed the Virginia law. After Buck more than 8,000 other Virginians were sterilized before the most relevant parts of the act were repealed in 1974. Later evidence eventually showed that Buck and many others had no "hereditary defects." She is buried south of here.
DEPARTMENT OF HISTORIC RESOURCES, 2002

# US EUGENICS POSTER, 1926


LEGISLATIVE STATUS OF EUGENICAL STERILIZATION IN THE UNITED STATES
AND THE TOTAL NUMBER OF OPERATIONS BY EACH STATE TO JANUARY 1, 1935.
Total number of operations to January 1, 1935 - 21539
WASHINGTON 33
OREGON 988
CALIFORNIA 6997
IDAHO 26
NEVADA
UTAH 94
ARIZONA 11
MONTANA 85
WYOMING
COLORADO
NEW MEXICO
NORTH DAKOTA 210
SOUTH DAKOTA 231
NEBRASKA 517
KANSAS 1260
OKLAHOMA 49
TEXAS
MINNESOTA 1014
IOWA 160
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN 745
ILLINOIS
MICHIGAN 1465
INDIANA 361
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI 195
ALABAMA 235
GEORGIA
FLORIDA
SOUTH CAROLINA
NORTH CAROLINA 249
VIRGINIA 1081
WEST VIRGINIA
PENNSYLVANIA
NEW YORK 2620
MARYLAND
DELAWARE
NEW JERSEY
CONNECTICUT 85
MASSACHUSETTS
MAINE 111
States with Eugenical Sterilization
Laws in effect January 1, 1935.
States with bills pending January 1, 1935.
★ Laws repealed.

# COMPULSORY STERILIZATION

- **Compulsory Sterilization Laws adopted in 32 States and federally-funded**
- **Estimated more than 65,000 sterilizations of persons with disabilities and mental illness**
- **Other sterilizations performed on poor/disadvantaged individuals or specific racial/ethnic groups (e.g., 25-50% of Native American women, 1970-1976)**



"In Jack El-Hai's lively biography, Freeman comes across as a classic American type, a do-gooder and a go-getter with a bit of the huckster thrown in."
—William Grimes, *The New York Times*

# the lobotomist

*a maverick medical genius and his tragic quest to rid the world of mental illness*

jack el-hai

# WALTER J. FREEMAN
# 1895-1972

- Performed 3,500-4,000 lobotomies, mostly using an orbitoclast (“ice pick”) transorbital procedure, including children; without anesthesia or informed consent
- No formal surgical training and disregard of sterile procedure
- Briefly collaborated with neurosurgeon (James Watts, MD), who subsequently withdrew from assisting with any procedures
- Surgeries were performed to change sexual orientation and to “treat” other sexual behavior

# Walter Freeman, MD
# Lobotomies and Race

- Believed that African American psychiatric patients, especially women, were the best candidates for lobotomies because of “greater family solidarity manifested by these people”
- 1952: performed many lobotomies on African American patients (West Virginia state hospital, Lakin); documented: “ a week or so after operating upon twenty very dangerous Negroes and found fifteen of then sitting under the trees with only one guard in sight”
- Freeman volunteered to perform lobotomies on African American patients at the Tuskegee VA hospital; was prevented, which his associate William Sargant described as “the whole Negro-rescue plan had to be cancelled”

# LOBOTOMY OUTCOMES

- Estimated 60,000 lobotomies performed in US (1936-1956); women>men
- Post-operative complications: cerebral hemorrhage, seizures, brain abscess
- Neurocognitive and neurobehavioral deterioration
- DEATH

# INVASIVE INTERVENTIONS: PRESUMED SEXUAL DISORDERS

- LOBOTOMY PROCEURES
- GENITAL SHOCK “TREATMENT”
- CONVERSION “THERAPY” to “cure” homosexuality; pseudoscientific practice condemned by United Nations Committee Against Torture in 2014
- OVARIOTOMIES & CLITORIDECTOMIES
- CASTRATION (surgical & chemical)

# Isaac Baker Brown, MD

- Obstetrical surgeon and President of the Medical Society of London (1865)
- Performed ovariotomies (including his own sister) based upon "Psychology of the Ovary" : i.e., attributing all emotional, and medical problems

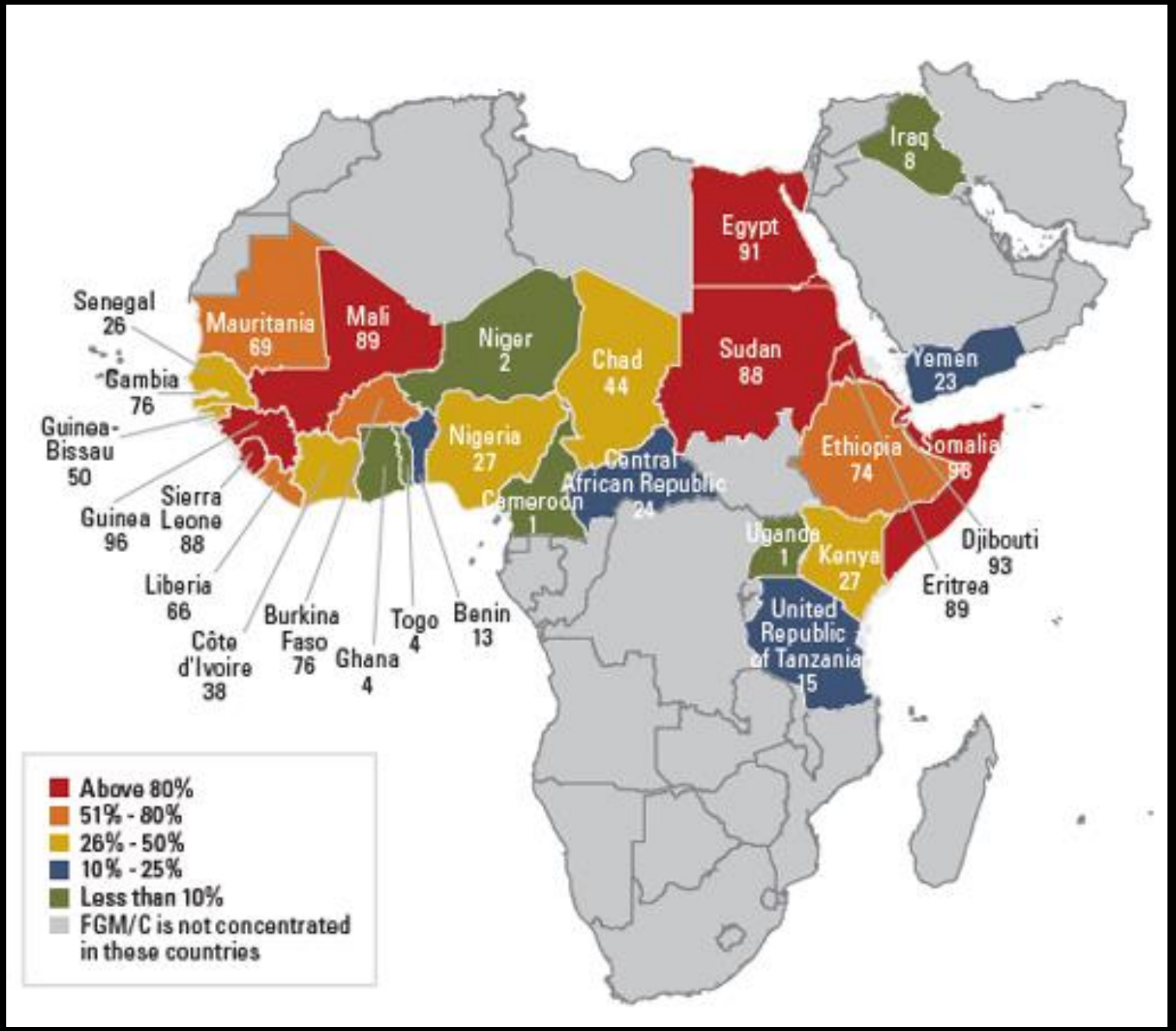
  of women to malfunction of the ovaries
- Performed clitoridectomies in response to his belief that nervous disorders were the direct result of "peripheral excitement of the pudic nerve"

  (i.e., masturbation)

# On the Curability of Certain Forms of Insanity, Epilepsy, Catalepsy, and Hysteria in Females - Primary Source Edition

Isaac Baker Brown


STOP
FEMALE CIRCUMCISION
IT IS
DANGEROUS
TO
WOMEN'S HEALTH
FAMILY PLANNING ASSOCIATION OF UGANDA


Iraq
8
Egypt
91
Senegal
26
Mauritania
69
Mali
89
Niger
2
Chad
44
Sudan
88
Yemen
23
Gambia
76
Guinea-
Bissau
50
Nigeria
27
Ethiopia
74
Somalia
98
Central
African Republic
24
Cameroon
1
Guinea
96
Sierra
Leone
88
Uganda
1
Kenya
27
Djibouti
93
Eritrea
89
Liberia
66
Burkina
Faso
76
Togo
4
Benin
13
Côte
d'Ivoire
38
Ghana
4
United
Republic
of Tanzania
15
Above 80%
51% - 80%
26% - 50%
10% - 25%
Less than 10%
FGM/C is not concentrated
in these countries

# FEMALE GENITAL MUTILATION
## World Health Organization

- **PREVALENCE: ESTIMATED 200 MILLION GIRLS and WOMEN ALIVE TODAY (data available in 30 countries; 513,000 among girls/women in US-CDC, 2016)**
- **ESTIMATED 3 MILLION GIRLS (infancy to age 15) will be subjected to FGM annually**
- **"RATIONALE"- ensure premarital virginity & marital fidelity; notion that girls are unclean, unfeminine or male**

# GLOBAL PREVENTION EFFORTS

## CONSEQUENCES of MISDIAGNOSIS AND "TREATMENT" of SEXUAL BEHAVIOR

- **EXACERBATION of SEXUAL DISORDER SYMPTOMS**
- **SECONDARY PSYCHIATRIC DISORDERS (e.g., depression; suicide/suicide attempts; substance use disorder)**
- **NEUROLOGICAL and other MEDICAL CONSEQUENCES**
- **INSTITUTIONALIZATION & INCARCERATION**

# NEUROLOGICAL CORRELATES: HYPOSEXUALITY

- **NEUROSURGICAL INTERVENTIONS (e.g., hypothalamic surgery for sexual deviant behavior; surgical procedures for movement disorders)**
- **DEMENTIA and NEURODEGENERATIVE DISEASES**
- **TEMPORAL LOBE EPILEPSY (interictal personality trait; R-sided temporal lobe epilepsy: increased incidence )**
- **PRESCRIBED MEDICATIONS (e.g., antidepressants, gabapentin)**

# PSB: BEST PRACTICE GUIDELINES

- **OBTAIN COMPREHENSIVE MEDICAL, PSYCHIATRIC, PSYCHOSOCIAL, SEXUAL and FORENSIC HISTORY**
- **RISK ASSESSMENT by PSB EXPERT CLINICIAN, preferably with experience in evaluating individuals with neurological diseases/disorders**
- **ASSESSMENT of CURRENT MENTAL STATUS**
- **NEUROPSYCHOLOGICAL ASSESSMENT**
- **NEUROBEHAVIORAL SUPPORT PLAN informed by Risk Assessment and evaluation of neurocognitive status**

# PSB: BEST PRACTICE GUIDELINES

- **BEHAVIORAL NEUROLOGY CONSULTATION, when indicated (e.g., evaluation of possible seizure disorder)**
- **PSYCHOPHARMACOLOGY EVALUATION**
- **INDIVIDUAL or GROUP PSYCHOTHERAPY, with clinician experienced in working with neurological populations**
- **ADDITIONAL RISK ASSESSMENTS, when indicated (e.g., fire setting assessment); capacity to consent to sexual relationship (e.g., neurodegenerative disorder; intellectual disability; neurobehavioral disorder)**

# PSB: COMMUNITY TRANSITION AND RESIDENTIAL PLACEMENT CONSIDERATIONS

- **MEETING REQUIREMENTS of SORB (Sex Offender Registry Board), and other LEGAL REQUIREMENTS (e.g., probation)**
- **SITING of 24/7 RESIDENTIAL PROGRAM or other COMMUNITY-BASED RESIDENCE**
- **DETERMINING ROOMMATE COMPATABILITY and POTENTIAL RISK/VULNERABILITY**
- **STAFF RATIOS, SELECTION, TRAINING, and ONGOING SUPPORT NEEDS**
- **CYBER RISK EDUCATION (e.g., child pornography, victimization risk)**

# CHILD PORNOGRAPHY LAW

- Production, distribution, reception and possession of child pornography is a Federal offense
- Includes video, photos, digital, computer-generated, undeveloped film of children that is sexually explicit (does not mean only sexual acts)
- Child pornography is NOT a First Amendment right
- Severe penalties: first time offender faces fines and sentence of 15-30 years; if images are violent, sadistic, masochistic, and/or depicts sexual abuse or offender has past convictions may face life time imprisonment

# SEXUALITY in PERSONS LIVING with ABI

- Domain of human behavior and functioning which is largely not addressed or assessed in persons living with ABI
- Changes in sexual functioning affects perception of self and perceived quality of life for person with ABI and intimate partner
- Need for comprehensive education, policies, and psychosocial opportunities in the community, programs and clinical settings serving individuals with ABI

# Q & A

# Sexually Speaking:
# Brain Injury, Development and Behavior

**Part 3: August 11**
**Rebuilding Intimacy and Relationships**
**Kyla Browning, OTR/L**

# Other Training Events

NASHIA 2021 Webinar & Podcast Series

NASHIA Training U: YouTube

Leading Practices Academies NASHIA Leading Practices Academy

NASHIA Training U Workshops

NASHIA

# Annual Event:

## State of the States Conference: 2021

# Thank you!

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