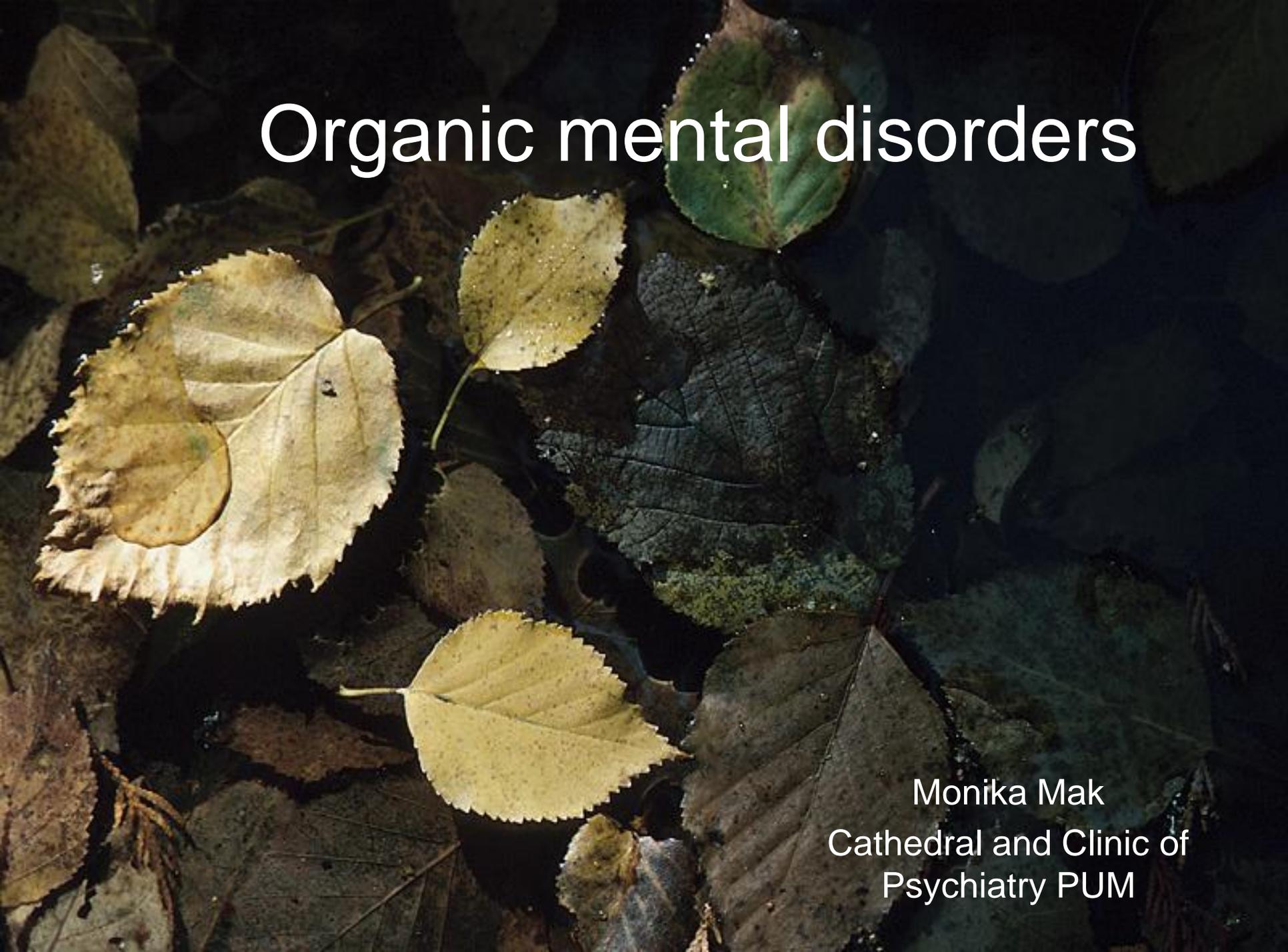


Organic mental disorders

A close-up photograph of several autumn leaves in various stages of decay, from bright yellow to dark brown and black, set against a dark background. The leaves are scattered across the frame, with some showing significant damage and discoloration. The lighting is dramatic, highlighting the textures and colors of the foliage.

Monika Mak
Cathedral and Clinic of
Psychiatry PUM

Organic mental disorders

- Group of mental disturbances results from brain dysfunction connected with brain disease, degeneration or damage.
- Mental symptoms caused by somatic diseases or by substances (***exogenous psychosis***).

Brain changes in the old age

- **Weight** ↓ 17% at 80
- **sulci** ↑
- **convolutions** ↓
- **ventricles** ↑
- **blood-brain barrier** ⋮⋮⋮⋮
- **blood flow** ↓
- **oxygenation** ↓



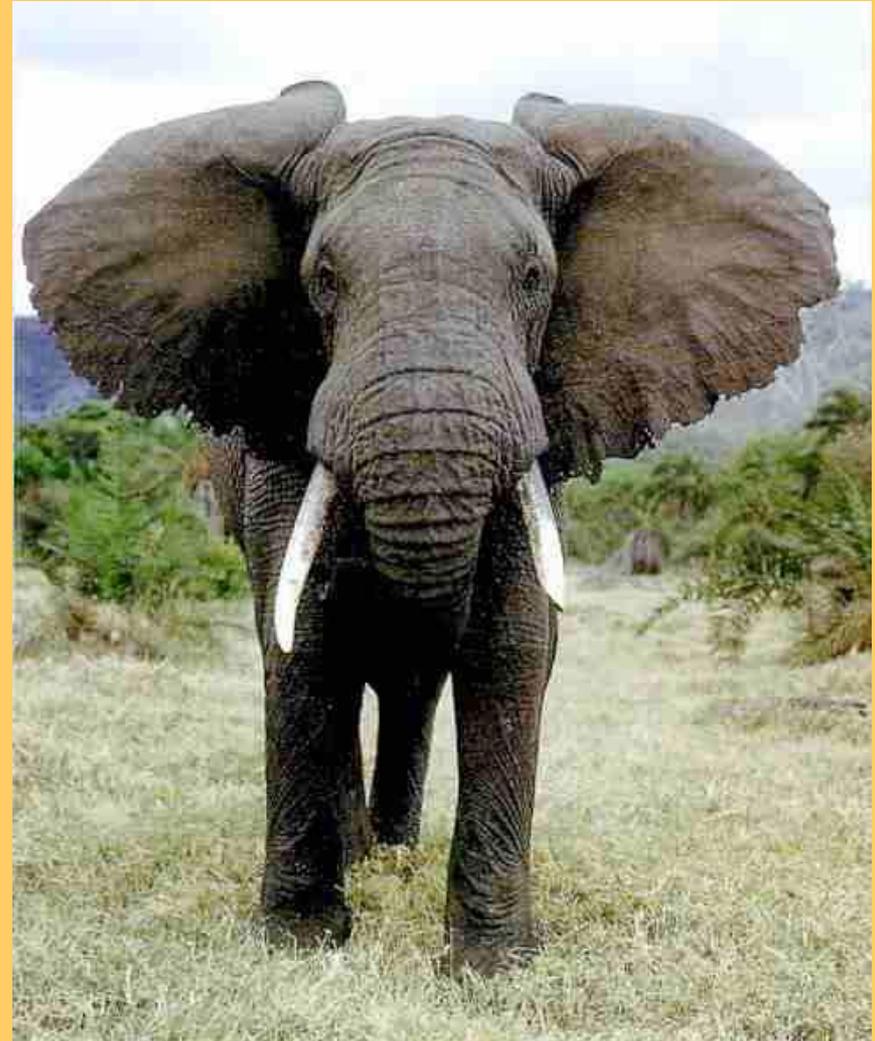
Neurotransmitters in old age



- Norepinephrine ↓
- monoaminoxidase ↑
- serotonin ↓
- dopamine ↓

Neuropsychiatric changes associated with aging

- **Learning- takes longer but complete**
- **Memory- encoding**
- **Worse recall**
- **Worse psychomotor speed**
- **Lower verbal ability**
- **IQ \longleftrightarrow till 80**



Psychiatric problems of older people



- **ubiquity of loss - predominant experience**
- **dementias**
- **depression**
- **delirium**
- **suicide**
- **chronic physical illness**

etiology of organic brain dysfunction

```
graph TD; A[etiology of organic brain dysfunction] --> B[PRIMARY]; A --> C[SECONDARY]; B --> B1[brain disease]; B --> B2[brain degeneration]; B --> B3[trauma]; C --> C1[general medical condition]; C --> C2["substances (alcohol and drugs - not classified here)"]
```

- **PRIMARY**

- brain disease
- brain degeneration
- trauma

- **SECONDARY**

- general medical condition
- substances (alcohol and drugs - not classified here)

Organic mental disorders

psychopathology

I GROUP

- **cognitive disturbances: memory, learning abilities, intellect**
- **disturbances of sensorium**

II GROUP

- **Hallucinations**
- **Delusions**
- **Mood and emotion disturbances**
- **Personality/behavioral changes**

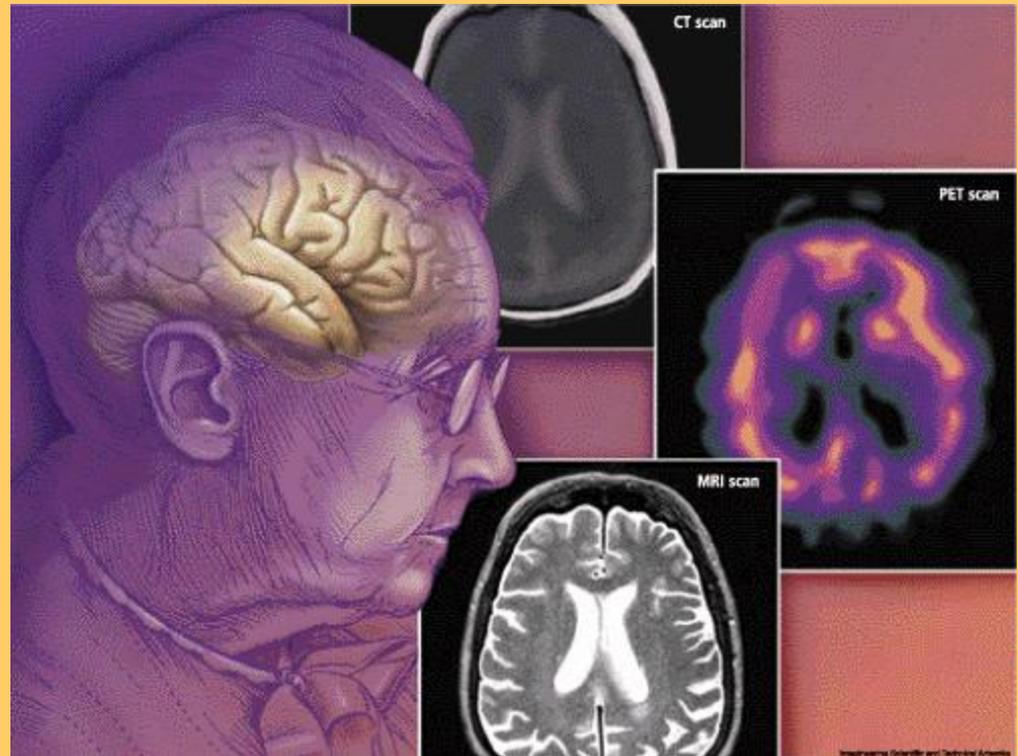
- **Dementia**

- A chronic deterioration of intellectual function and other cognitive skills severe enough to interfere with the ability to perform activities of daily living.

- ***it is mostly a disease of the elderly,***
- ***affecting > 15% of persons > 65 yr old***
- ***40% of persons > 80 yr old***
- ***15% patients have reversible illness***

Dementia

- Memory impairment
- Aphasia
- Apraxia
- Agnosia
- Disturbance in executive function



Dementia - associated features

- Emotional changes – disinhibition, lability, anger, anxiety, depressive symptoms
- Personality disturbances
- Psychotic symptoms

Metabolic-Toxic	Structural	Infectious
<p>Anoxia B₁₂ deficiency Chronic drug-alcohol-nutritional abuse Folic acid deficiency (?) Hypercalcemia associated with hyperparathyroidism Hypoglycemia Hypothyroidism Organ system failure Hepatic encephalopathy Respiratory encephalopathy Uremic encephalopathy Pellagra</p>	<p>Alzheimer's disease Amyotrophic lateral sclerosis Brain trauma (acute severe) Chronic subdural hematoma Dementia pugilistica Brain tumor Cerebellar degeneration Communicating hydrocephalus Huntington's disease (chorea) Irradiation to frontal lobes Multiple sclerosis Normal-pressure hydrocephalus Parkinson's disease Pick's disease Progressive multifocal leukoencephalopathy Progressive supranuclear palsy Surgery Vascular disease Multi-infarct dementia Wilson's disease</p>	<p>Bacterial endocarditis Brain abscess (selective) Creutzfeldt-Jakob disease Gerstmann-Sträussler-Scheinker disease HIV-related disorders Neurosyphilis (general paresis) Tuberculous and fungal meningitis Viral encephalitis</p>

(?) = uncertain.

The most common types of dementia

- Alzheimer's disease 50-55%
- Cerebrovascular dementia 20%
- Head trauma
- Alcohol-related
- Parkinson's disease
- Huntington's disease
- HIV-dementia
- Pick's disease
- Creutzfeld-Jacob's disease

Alzheimer's disease

Women > men

Begin about 65 y. or about 80 y.

Sometimes history of dementia in family

usually begins subtly and worsens slowly over time

No neurological signs or occurrence in very advanced disease

Vascular dementia

Men > women

Begin past 70 y.

History of cardiovascular disease/diabetes+tobacco

can begin and progress suddenly /intermittent course

Focal neurologic symptoms early

Dementia – course and prognosis

- STEADY PROGRESSION like AD/
INCREMENTALLY WORSENING like VD/
STEADY DEMENTIA – related to head trauma
- Leading to death
- Early onset or familial history of AD– rapid course
- 15% potentially reversible

Dementia's stages

The early stage - loss of recent memory, inability to learn and retain new information, language problems (especially word finding), mood swings, and personality changes. progressive difficulty performing activities of daily living

The intermediate stage - unable to learn and recall new information, require assistance with bathing, eating, dressing, or toileting. Wandering, agitation, hostility, uncooperativeness, or physical aggressiveness. disorientation in place and time, often hallucinations, delusions, mood disturbances.

The severe stage - unable to walk or to perform any activity of daily living and usually are totally incontinent. Recent and remote memory is completely lost. Patients may be unable to swallow and eat and are at risk of malnutrition, pneumonia (especially from aspiration), and pressure sores. Often aphasia, bulimia, apathy, sexual disinhibition, cry.

Psychosocial determinants of dementia

- The better premorbid intelligence/ education the better ability to compensate intellectual deficits.
- Anxiety/ depression intensify the symptoms
- ***PSEUDODEMENTIA – cognitive defects in depressed people***

Frontotemporal dementia

Behavioral symptoms preceded intellectual decline

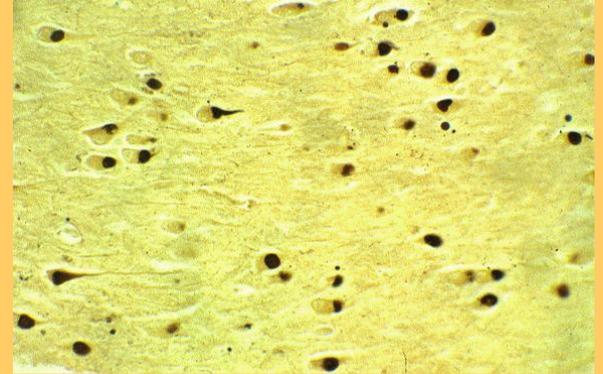
- social withdrawal,
- irritability,
- disinhibition,
- apathy, depression,
- wandering
- Pick disease
- Frontotemporal gliosis
- Tumors

Onset about 50

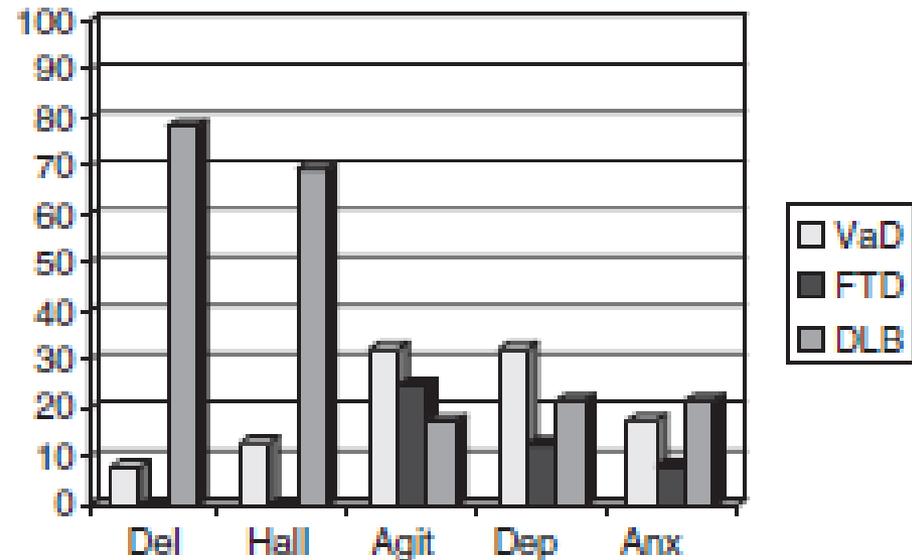
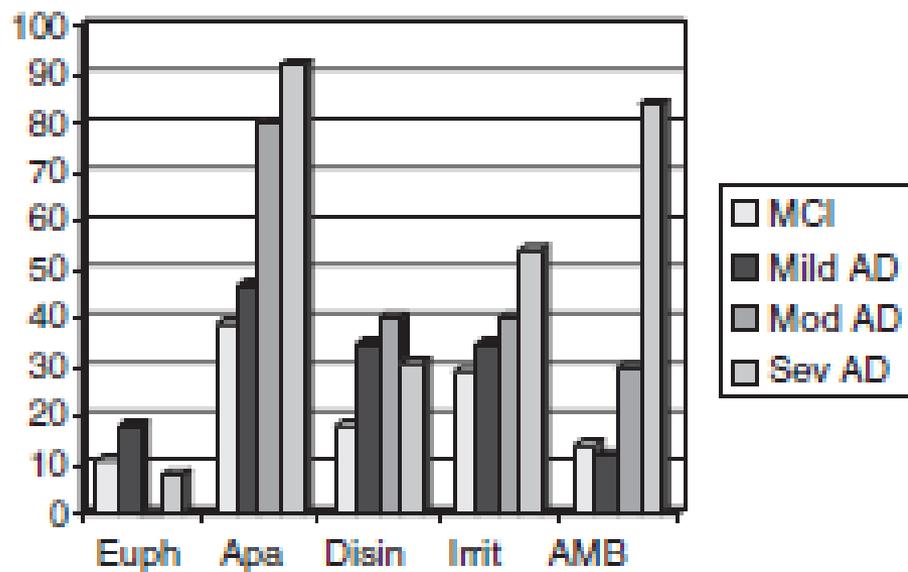
Later developing of dementia with subcortical features

Pick's Disease

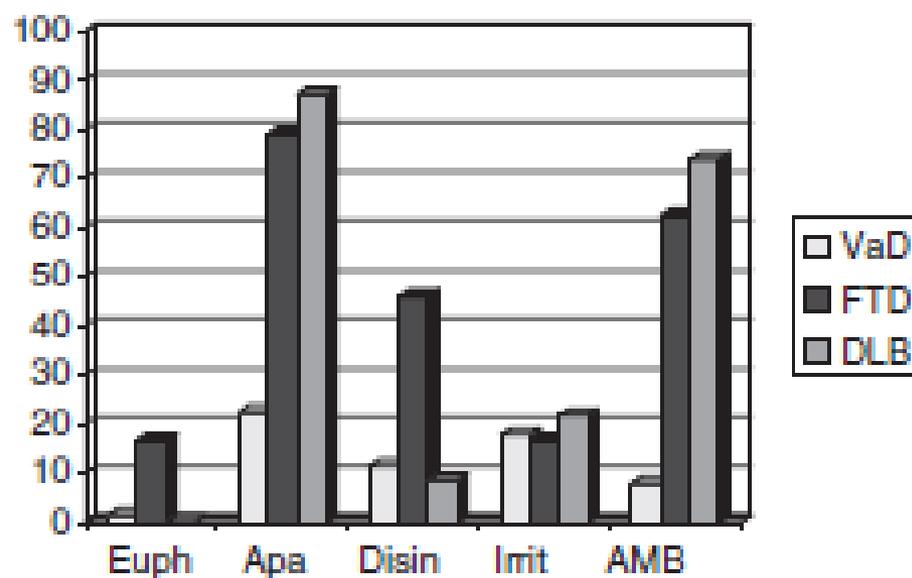
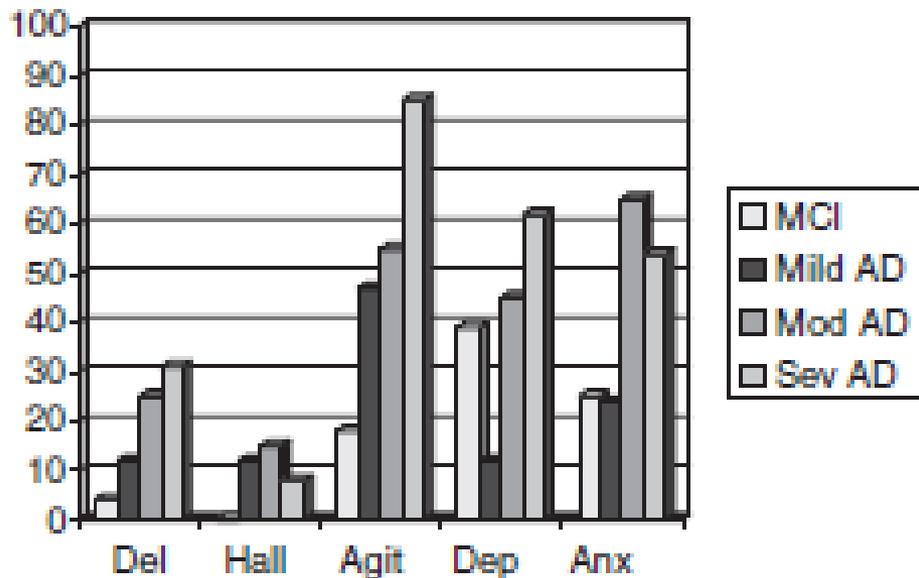
- Form of dementia (Frontotemporal)
The development of multiple progressive cognitive deficits manifested by both:
 - 1) Memory impairment
 - 2) Aphasia, apraxia, agnosia, or executive dysfunction
- Age of onset: 20-80 years (typically 40-60)
- Affects 1 in 100,000 (women>men)
- Mean duration: 7 years
- Pathology: atrophy of FL and TL, swollen brain cells (Pick cells), abnormal staining within cells (Pick bodies)



Pick Bodies:
Tau protein accumulations



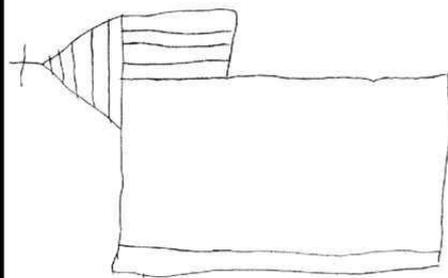
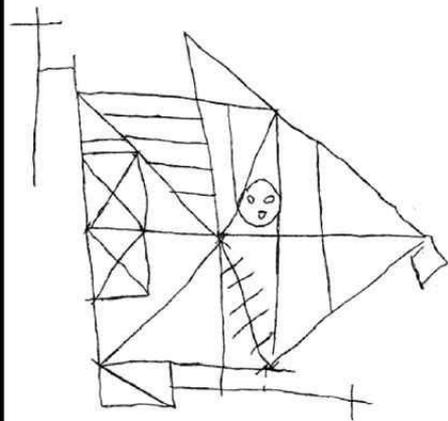
Neuropsychiatry of dementias



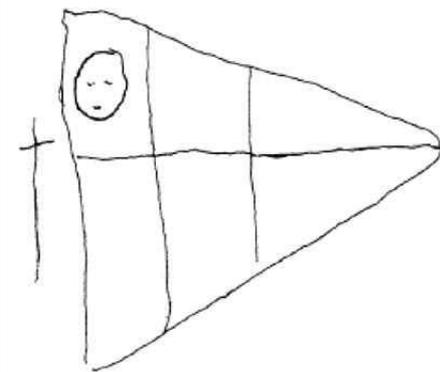
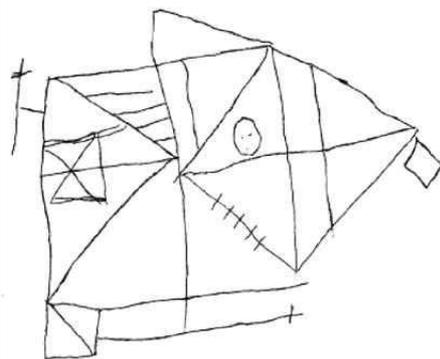
Treatment of dementia

- ▶ Family education and support groups
- ▶ Restrict/ prevent driving
- ▶ Drug therapy for cognitive deficits: cholinesterase inhibitors/ vit. E
- ▶ Drug therapy for psychosis and agitation:
 - ▶ haloperidol, promazine, lorazepam
- ▶ Drugs to treat depression: mianserin, SSRI, venlafaxine, ECT
- ▶ Sleep disturbances: sleep hygiene and habits, using drugs sparingly

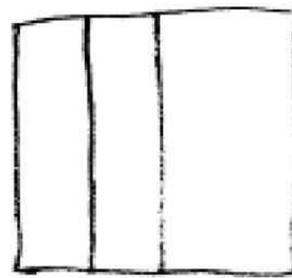
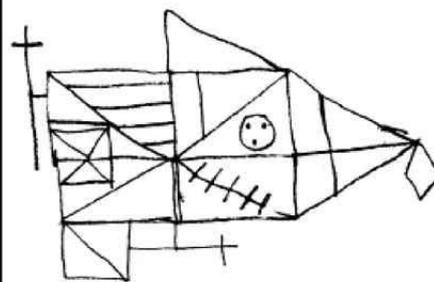
NC



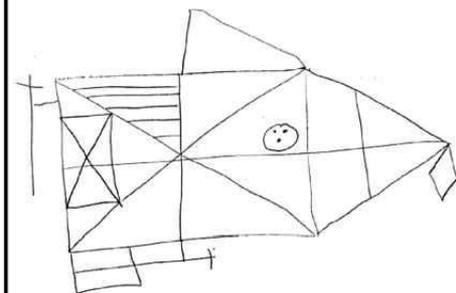
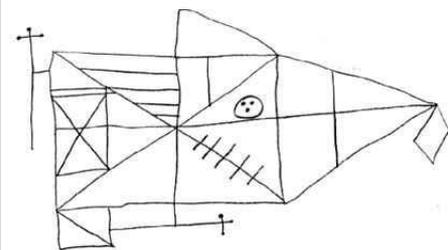
MG

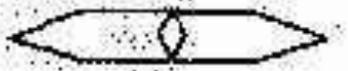
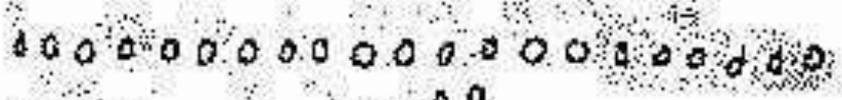
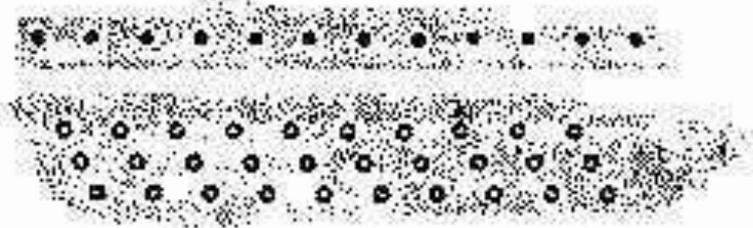


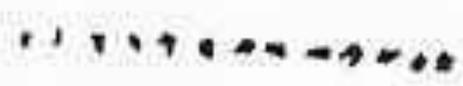
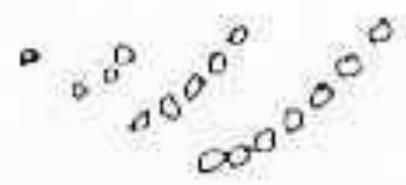
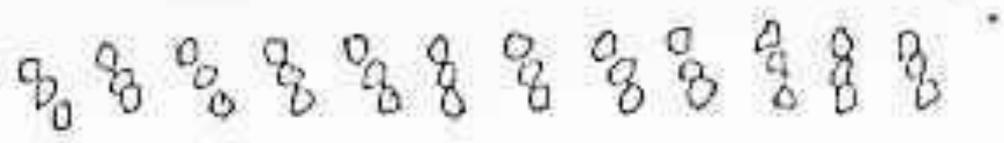
PN



CON







Delirium

- Delirium is a potentially reversible condition that usually comes on suddenly; the person has diminished ability to pay attention and is confused, disoriented, and unable to think clearly.
- *Delirium is an abnormal mental state, not a disease, with a variety of symptoms.*
- Children and older adults are most susceptible

Delirium

- Prominent is a **clouding of consciousness** accompanied by disorientation to time, place, or person.
- Psychomotor disturbances
- Insomnia, with nocturnal worsening of symptoms
- Illusions and hallucinations, often visual
- Anxiety, depression, irritability, euphoria
- Transient delusions
- Often tremor, nystagmus, incoordination

Common Causes of Delirium I

- Alcohol, street drugs, and poisons
- Acute infection with fever
- Toxic effects of medications
- Abnormal blood levels of electrolytes, salts, and minerals such as calcium, sodium, or magnesium
- Subdural hematoma, a collection of blood under the skull that can put pressure on the brain
- Meningitis, encephalitis, syphilis - infections affecting the brain

Common Causes of Delirium II

- Thiamine and vitamin B12 deficiencies
- Thyroid disease from either an underactive or overactive thyroid gland
- Brain tumors--some occasionally cause confusion and memory problems
- Poor heart or lung function resulting in low levels of oxygen or high levels of carbon dioxide in the blood
- Stroke

Comparing Delirium and Dementia

Delirium	Dementia
Develops suddenly	Develops slowly
Lasts days to weeks	May be permanent
Associated with drug use or withdrawal, severe illness, problem with metabolism	May not be otherwise ill
Almost always worse at night	Often worse at night
Unable to pay attention	Attention wanders
Awareness fluctuates from lethargy to agitation	Awareness is often reduced but not subject to wide swings
Orientation to surroundings varies	Orientation to surroundings is impaired
Language is slow, often incoherent, and inappropriate	Sometimes has difficulty in finding the right word
Memory is intact	Loss of memory, especially for recent

The treatment of delirium

! depends on its underlying cause - should be identify quickly

! People who are extremely agitated or who have hallucinations must be prevented from injuring themselves or their caregivers.

! The environment should be as quiet and calm as possible, preferably with low lighting but not total darkness.

! Benzodiazepine drugs help relieve agitation.

! Antipsychotic drugs /haloperidol, chlorpromazine/ given to people who are aggressively paranoid or severely fearful

! All psychoactive drugs should be eliminated as soon as possible.

! Additional drugs should be avoided

! A patient suspected of alcohol abuse should be given thiamine 100 mg IM daily for at least 5 days, to ensure absorption

Amnestic disorder

• Memory impairment without dementia and clouding of consciousness

Damage of diencephalic and limbic structures

- Common reason:
- Alcohol abuse/ vit B12 deficiency=
Korsakoff's Syndrome
- Head trauma
- Cerebral tumors/
cerebrovascular disease esp. thalamus and temporal lobe
- Hypoglycemia
- Seizures

Brain tumors

**50% with mental
Symptoms
Frontal/ limbic region**

- **50% without symptoms**
- Parietal/
temporal**

**Can cause any mental symptom
Cognition/language/memory
/perception/awareness**

**DIAGNOSIS
Comprehensive
clinical history
neurological
examination
brain imaging**

Tumor

- behavioral disturbances by directly affecting brain function
- destroying or compressing brain parenchyma (from mass effect or edema), through obstructive hydrocephalus, or by disrupting brain vasculature
- the nature of the behavioral disturbance - time course and injury location.
- extracranial nonbrain neoplasms - i.e. lung cancer may cause hypoxemia
- paraneoplastic syndromes may lead to metabolic abnormalities (e.g., hypercalcemia) - behavioral changes

Frontal Lobe Dysfunction in Tumors

- Intrinsic tumors (e.g., gliomas – tumors arising from glia) are most common and typically begin unilaterally in WM and spread through corpus callosum.
- Varying presentation: Can cause gradual or abrupt changes in personality/mood with or without cognitive changes
- Symptoms determined by tumor features:
 - Size
 - Rate
 - Location

- cancer may cause psychiatric symptoms without any known metabolic or other organ system disturbance - a commonly cited example - the onset of a major depressive disorder as the first clinical manifestation of occult pancreatic carcinoma. (blood-borne humoral factors secreted by the tumor)

Infections

Syphilis - chronic infection resulting from inoculation with the spirochete *Treponema pallidum* Neurosyphilis can occur 5 to 35 years after the initial inoculation and is divided into four stages:

- (1) an asymptomatic stage with abnormal CSF
- (2) meningovascular syphilis - headache, nuchal rigidity, irritability, and delirium;
- (3) tabes dorsalis - posterior column degeneration: ataxia, areflexia, paraesthesias , incontinence, impotence, and abnormal pupillary findings
- (4) general paresis - general paralysis of the insane, dementia paralytica, or paretic neurosyphilis, the classic neuropsychiatric disorder of tertiary syphilis

severe behavioral and cognitive disturbances

Infections

- **Creutzfeldt-Jakob disease** causes a rapidly progressive cortical-pattern dementia.
- initially with nonspecific symptoms - lethargy, depression, and fatigue
- later - progressive cortical pattern dementia, myoclonus, and pyramidal and extrapyramidal signs
- EEG - diffuse symmetric rhythmic slow waves

Viral Encephalitis

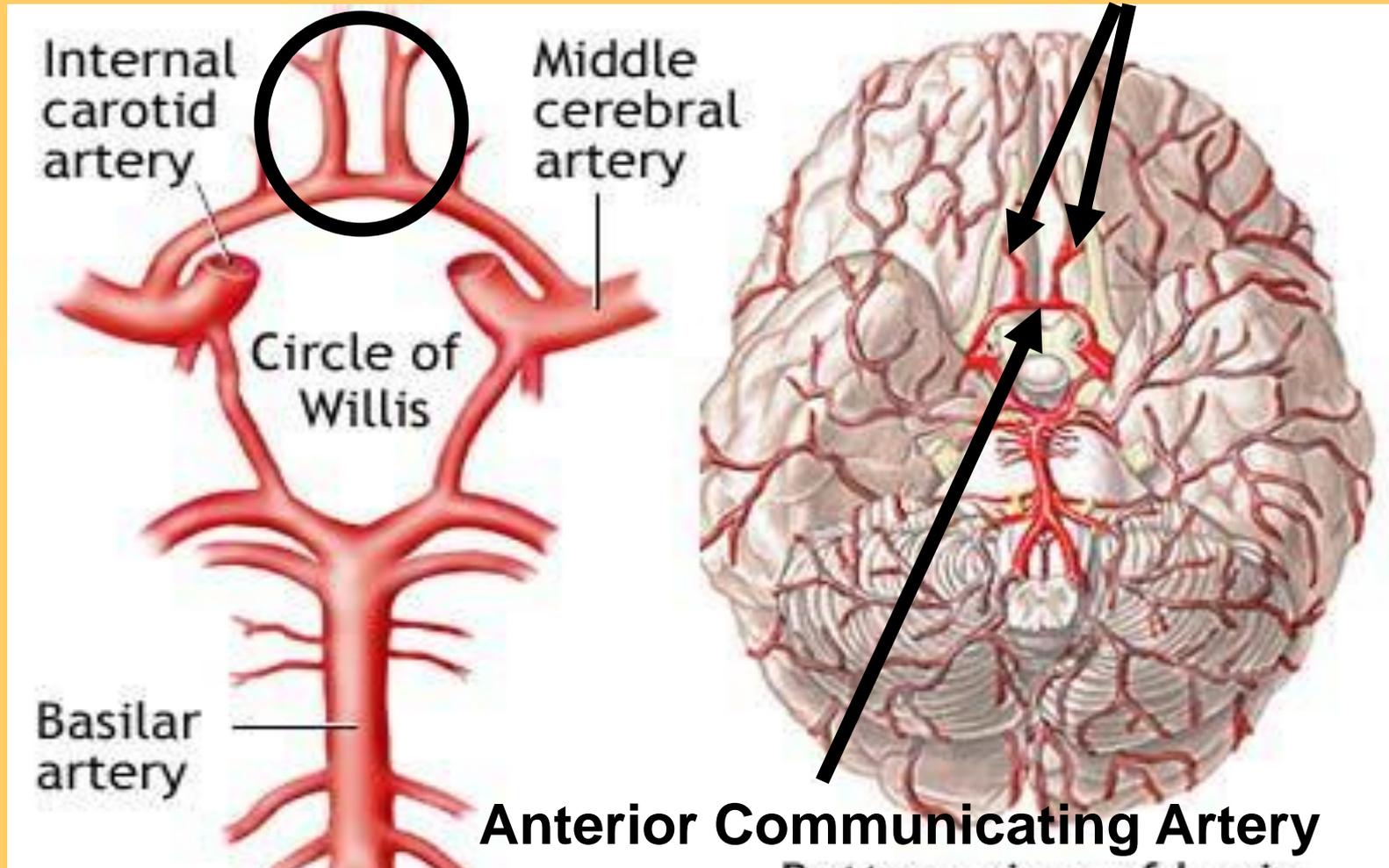
- Human Immunodeficiency (AIDS dementia complex)
- Immune and Autoimmune Disorders (lupus erythematosus)

Cardiovascular Disease

- delirium, dementia, and depressive episodes
- postoperative delirium arising from metabolic imbalances
- intellectual and behavioral alterations caused by hypofusion
- cerebrovascular disease

Frontal Lobe Dysfunction in CVA

Anterior Cerebral Arteries



70% of all ischemic strokes occur in the anterior circulation.

Vascular Lesions and Frontal Lobe Dysfunction

- Large vessel strokes (unilateral damage)
 - LH: speech/language (Broca's), right-sided motor deficits, and depression
 - RH: spatial deficits, left-sided motor deficits, elevated mood
- Ruptured aneurysm of the ACoA
 - Personality changes
- Small Vessel/Microvascular Disease
 - Can occur in FL themselves or in subcortical connections with FLs
 - Variable presentation

Congenital and Hereditary Conditions

- Down syndrome
- Fragile X syndrome (mood disorders, difficulties with behavioral control, and a neuropsychological profile of dyscalculia, right-left disorientation, and constructional dyspraxia)

Congenital and Hereditary Conditions

Huntington's disease

- psychiatric and neuropsychological manifestations may precede the emergence of motor abnormalities
- affective presentations, psychoses, personality changes, anxiety disorders
- subcortical dementia
- suicides often
- insightful long into the course of disease

Physiological Disorders - epilepsy

- **Prodrome** - irritability or apprehension
- **Aura** - dissociative experiences, hallucinations in all spheres, derealization, depersonalization, and disturbances of mood or affect
- **Ictus** - disorganized behavior
- **Postictal period** - from stupor to hypervigilance
- disturbances in behavior, cognition (lower IQ), perception, mood,
- Personality disorders, psychoses

TEMPORAL LOBE EPILEPSY

"I get the strangest feeling—most of it can't be put into words. The whole world suddenly seems more real at first. It's as though everything becomes crystal clear. Then I feel as if I'm here but not here, kind of like being in a dream. It's as if I've lived through this exact moment many times before. I hear what people say, but they don't make sense. I know not to talk during the episode, since I just say foolish things. Sometimes I think I'm talking but later people tell me that I didn't say anything. The whole thing lasts a minute or two."

Metabolic Disorders

- Etiologies particularly identified with specific psychiatric syndromes are discussed under each syndrome. However, most etiologies can produce more than one syndrome (e.g., hypothyroidism is most often associated with a depressive state but may also cause mania, delirium, or dementia).

Demyelinating Disorders

- multiple sclerosis (delirium, dementia, nonaffective psychoses, mood disturbances, persistent euphoria, labile affective expression, depression
-
- Cognitive dysfunctions

Schizophrenia: Core Symptom Clusters

I. Positive symptoms

delusions
hallucinations
disorganized speech
catatonia

II. Negative symptoms

affective flattening
alogia
avolition
anhedonia

Social/occupational dysfunction

work
interpersonal relationships
self-care

III. Cognitive symptoms

attention
memory
executive functions
(e.g., abstraction)

IV. Mood symptoms

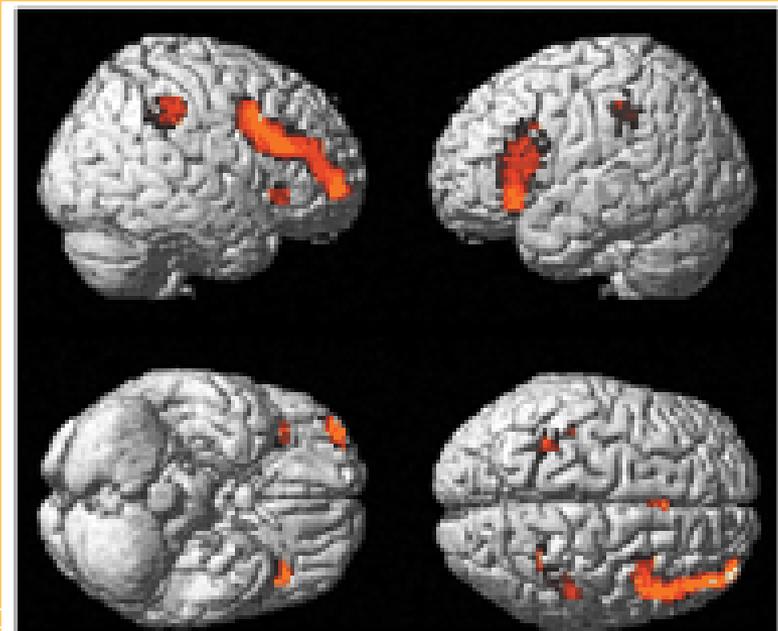
dysphoria
suicidality
hopelessness

Source:
Jeffrey Lieberman, M.D.
UNC-Chapel Hill

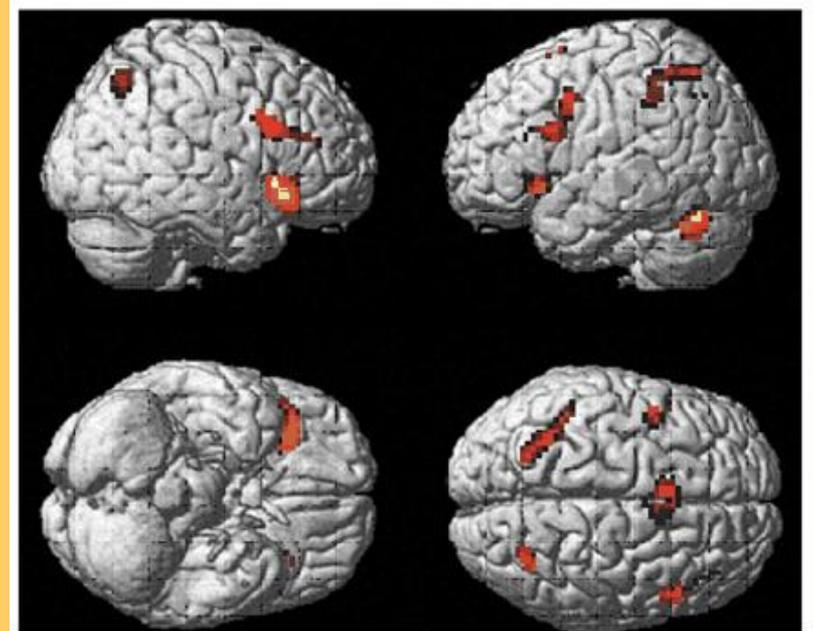
Schizophrenia & the Frontal Lobes

- 1) Executive dysfunction (WCST)
- 2) WM deficits
- 3) “Hypofrontality”

Healthy Controls (n=12)



Schizophrenia (n=12)



Just because he was a bad guy...

R

Thank
you

