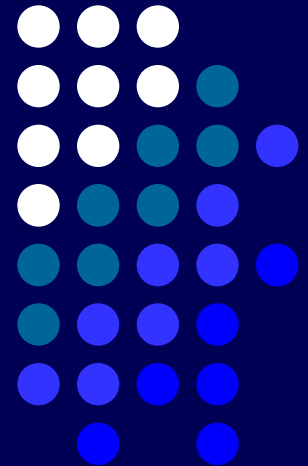
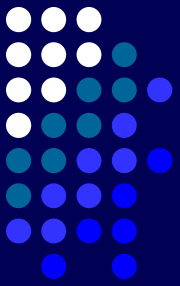


The Diagnostic Process

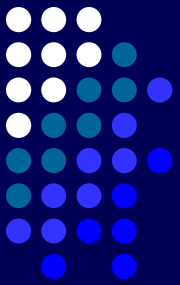
Edward (Ted) Huey, MD
Director of Clinical Science
Litwin-Zucker Research Center for the Study of
Alzheimer's Disease and Memory Disorders
The Feinstein Institute for Medical Research
North Shore / Long Island Jewish Medical System
Manhasset, NY





The FTLD evaluation

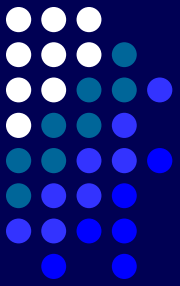
- Pre-diagnosis
- Record review
- Interview with the patient and caregiver
- Physical examination
- Laboratory work-up
- Imaging
- Neuropsychological testing



Pre-diagnosis

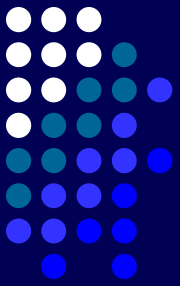
- Patients with FTLD are often initially diagnosed with a different illness
 - Psychiatric disorder
 - Alzheimer's disease

Distinguishing FTLD from a psychiatric disorder



- Cognitive dysfunction, especially executive dysfunction
- Progressive course
- Motor symptoms
- Family history
- New onset of psychiatric disorder

Distinguishing FTLD from specific psychiatric disorders



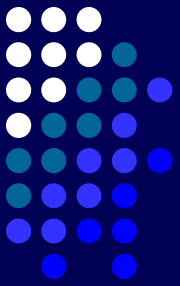
- Depression

- Some depressive symptoms (apathy, decreased energy and pleasure in activities) without others (depressed mood, guilt, poor self-esteem)
- Eating more, gaining weight

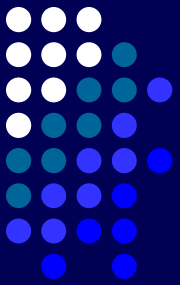
- Bipolar disorder

- Prolonged manic symptoms

Distinguishing FTLD from other disorders



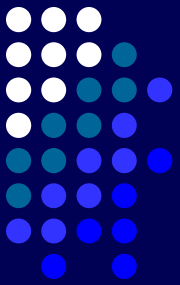
- Schizophrenia
 - New onset late in life
- Anxiety disorders (including OCD)
 - Compulsive repetitive behavior without anxiety
- Alzheimer's disease
 - Memory symptoms



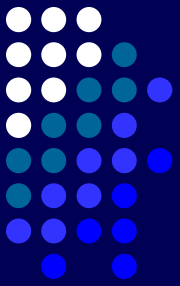
Diagnosis overview

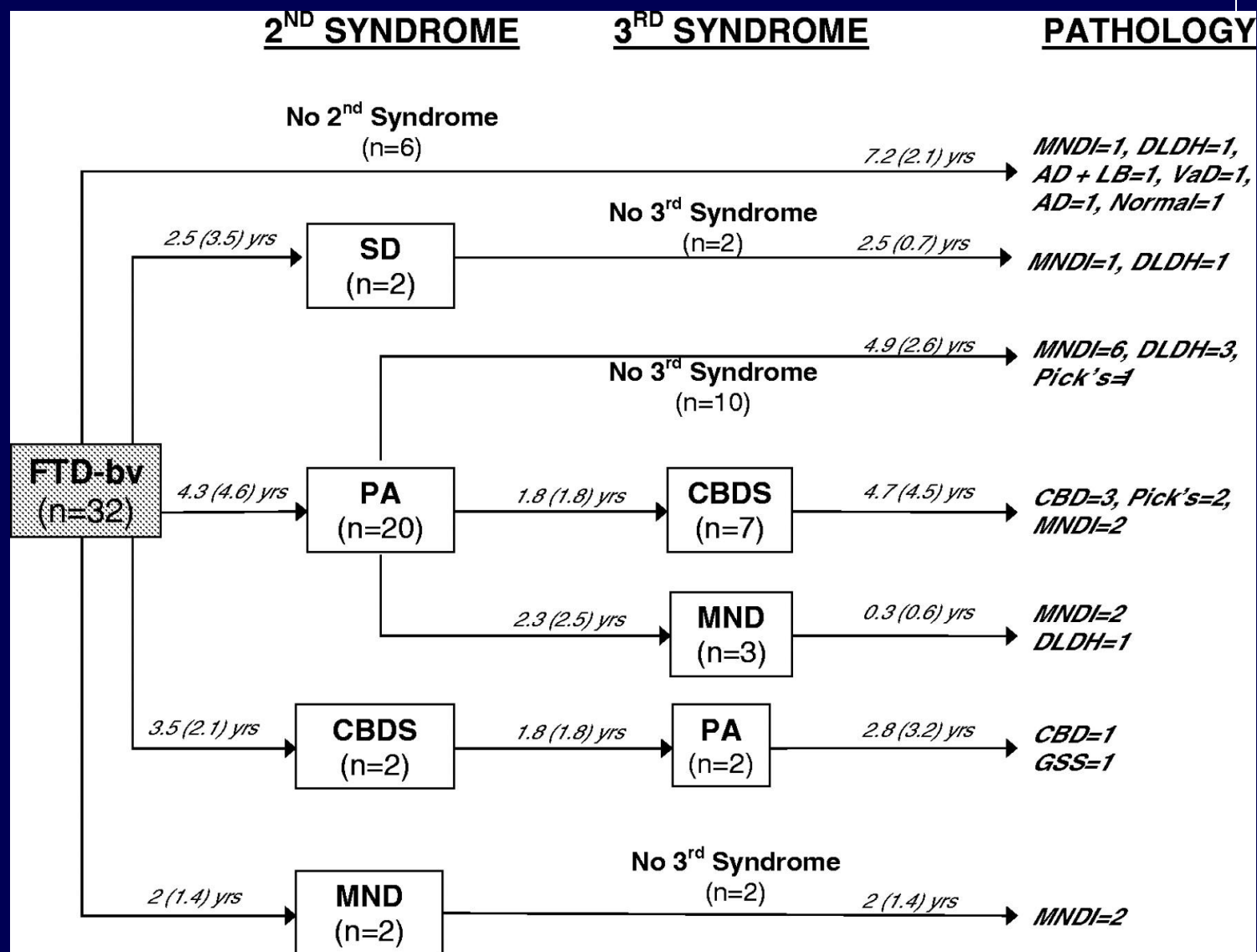
- We are very good at determining the brain areas affected by the underlying illness
- Determining the underlying disease process is more challenging

Normal functions of brain areas

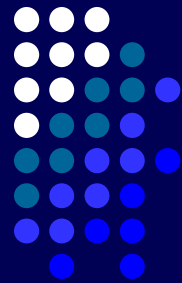


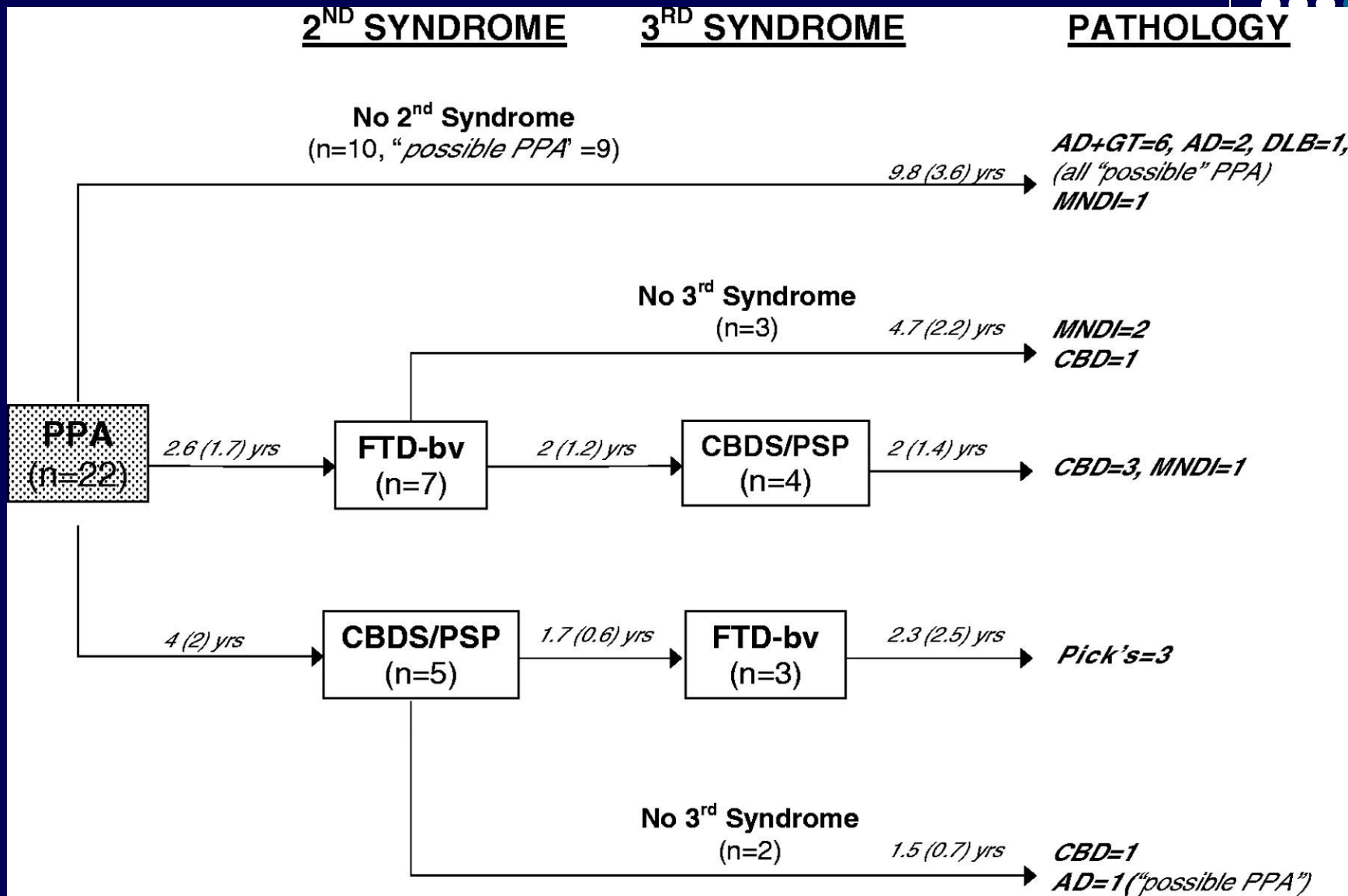
- Prefrontal cortex
 - Site of personality, higher cognitive functions, language production, how to perform complex activities, attention, motivation, emotional response, empathy, theory of mind
- Temporal lobe
 - Language comprehension, storage of knowledge about the attributes and characteristics of things



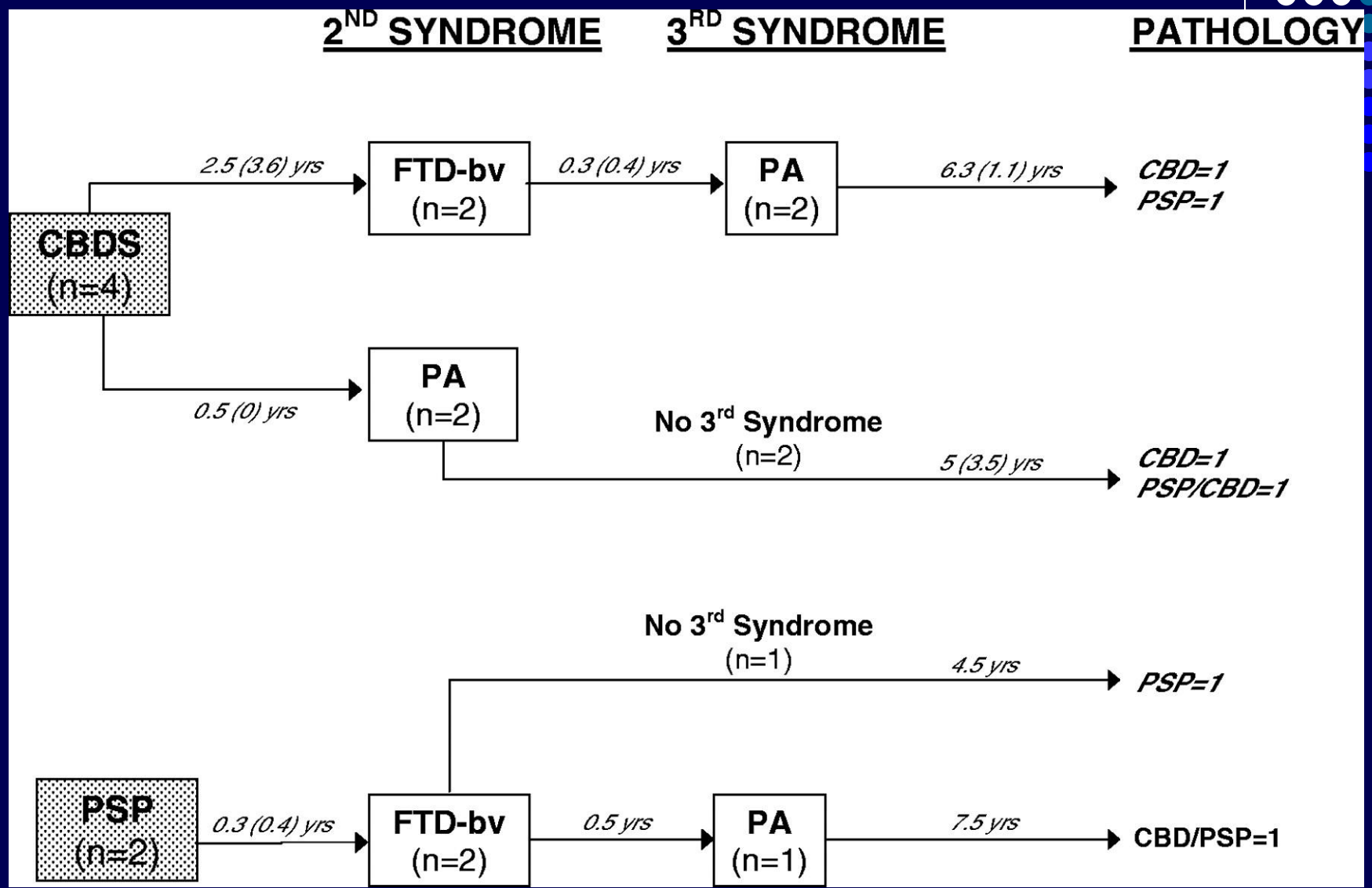


Kertesz et al., Brain 2005

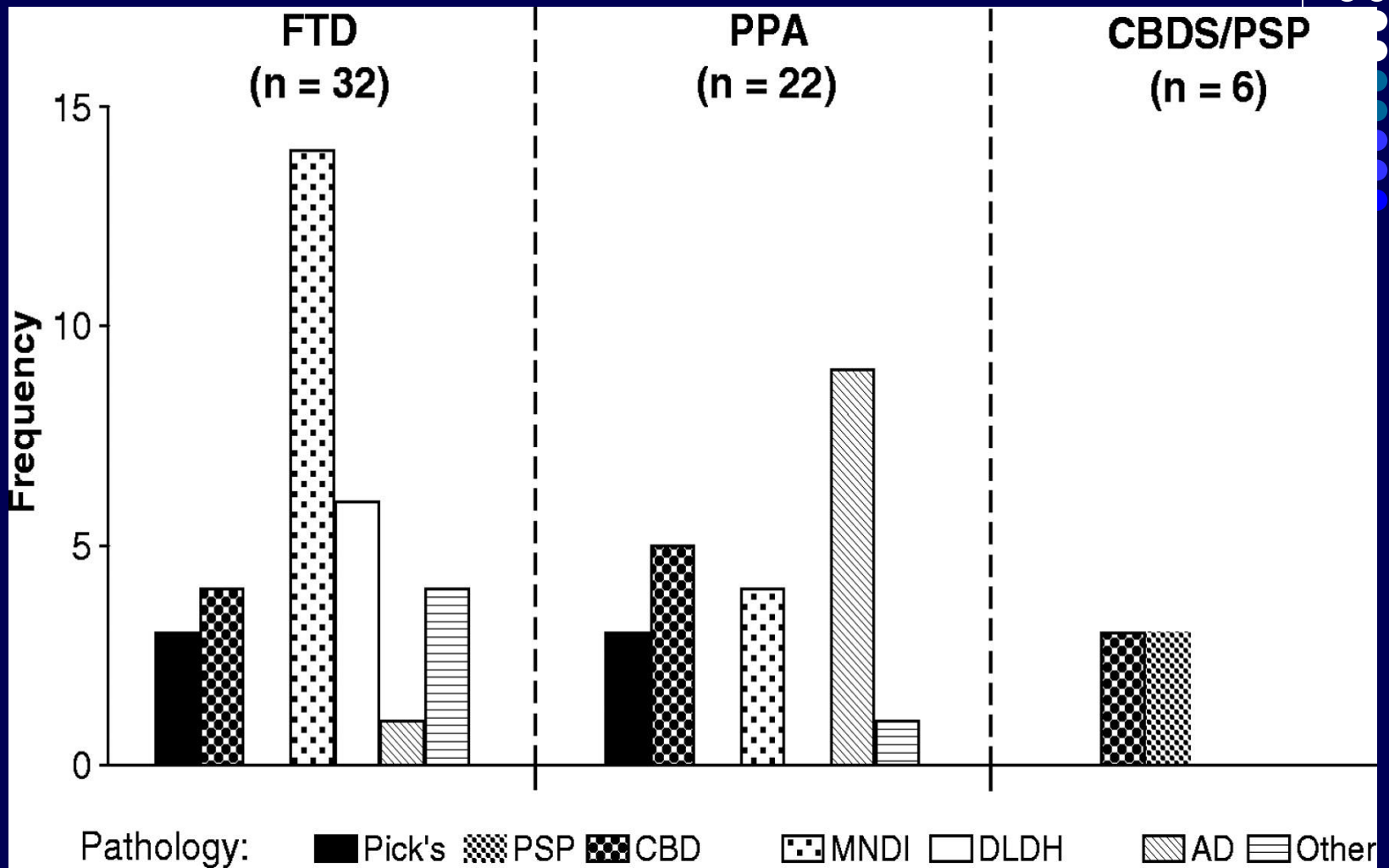




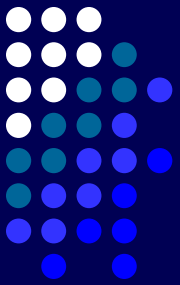
Kertesz et al., Brain 2005



Kertesz et al., Brain 2005

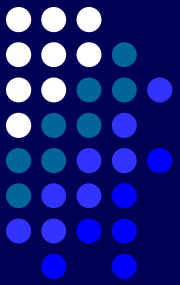


Kertesz, A. et al. Brain 2005 128:1996-2005



Record review

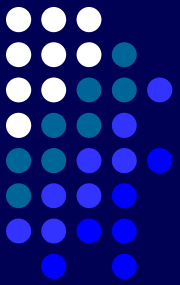
- These disorders progress, so important to have information from previous points in time



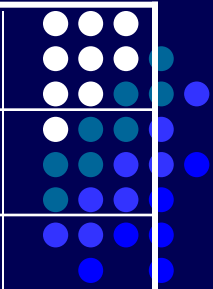
Taking a history

- History of present illness
- Past medical, neurologic, and psychiatric history
- Medications
- Social history
- Family history

Normal functions of brain areas

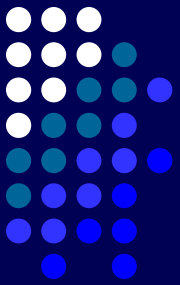


- Prefrontal cortex
 - Site of personality, higher cognitive functions, language production, how to perform complex activities, attention, motivation, emotional response, empathy, theory of mind
- Temporal lobe
 - Language comprehension, storage of knowledge about the attributes and characteristics of things



Symptom	Percentage
Agitation	45%
Anxiety	43%
Apathy	81%
Eating behaviors	66%
Delusions	25%
Depression	49%
Disinhibition	55%
Euphoria	36%
Hallucinations	8%
Irritability	42%
Aberrant motor behavior	42%

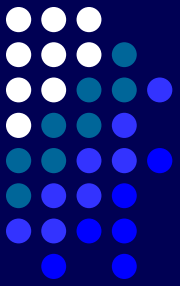
Whitwell et al., Brain 2009



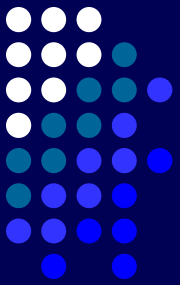
Neurologic examination

- Evaluate for:
 - Motor aspects of FTD
 - Parkinsonism
 - Motor neuron disease
 - Related illnesses (CBS, PSP)
 - Other nervous system illnesses

Neurologic examination, cont.



- Look for signs of frontal dysfunction
 - Eye movement abnormalities
 - Frontal release signs
 - Gait abnormalities
- Informal cognitive examination



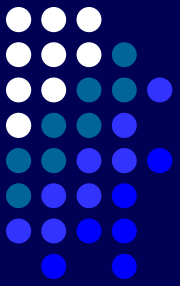
Laboratory work-up

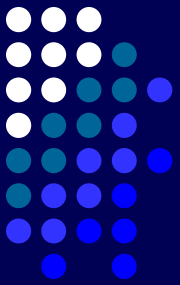
- Reversible causes of dementia
 - Thyroid, B12
 - Complete blood count, electrolytes, glucose, and renal and liver function tests
 - Testing for neurosyphilis
- Genetic testing

Imaging

- MRI
- FDG-PET

- Neuropsychological testing





Pulling it all together

- All aspects of the evaluation are weighted and combined to give the diagnosis that best explains the information gathered
- Often we will make a “differential diagnosis” – a list of possible diagnoses in order of likelihood
- The diagnosis is the basis of prognosis and treatment
- The symptom profile should be re-assessed over time