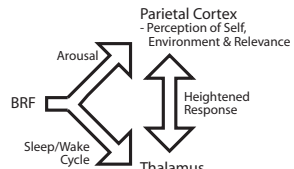


Problem 6.08

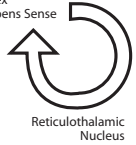
Dementia



Parietal Cortex
- Perception of Self, Environment & Relevance

Heightened Response

Thalamus
- Superior Colliculi
- Reflex Attention
- Input From Retina
- Output to Motor Neuron
- Pulvinar
- Input from Thalamus, Cortex Sup. Colliculi
- Find Novelty in Stimuli
- Output to Cortex
- Sensory Thalamus
- Sensory Input
- Filters & Amplifies
- Output to Cortex
- Feedback Sharpens Sense



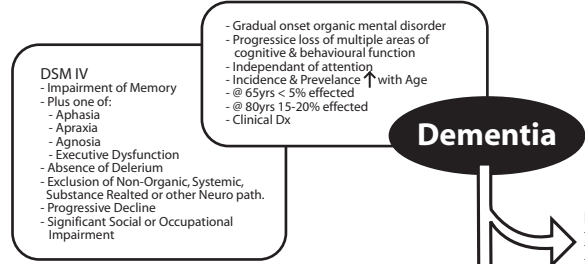
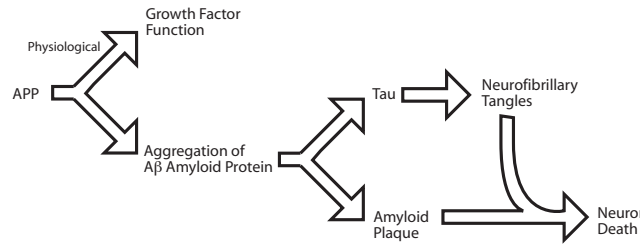
Reticulothalamic Nucleus

Age Associated Brain Changes
- Neurofibrillary Tangles
- Amyloid Plaques
- Brain Atrophy
- Neuronal Loss (Controversial)
- Cognitive Decline
- Neurodegenerative Decline
- Cerebrovascular Disease

Neurofibrillary Tangles & Amyloid Plaques
- Found in Majority of Elderly Patients
- @ 95 yrs Present in All Patients
- Only 25% of these will Have AD

Brain Atrophy
- White Matter Volume
- No Cortical Atrophy
- Mild Ventricular Expansion

MND
- Progressive Muscle Weakness
- Death within 3-5 yrs (avg.)
- 10% Familial
- Subtypes
- Amyotrophic Lateral Sclerosis (UMN & LMN)
- Progressive Muscular Atrophy (LMN)
- Primary Lateral Sclerosis (UMN)
- Progressive Bulbar Palsy (LMN)

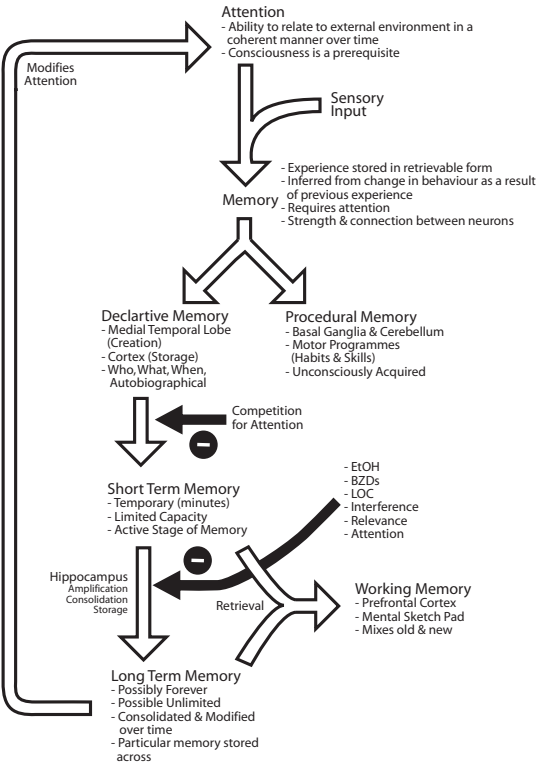


DSM IV
- Impairment of Memory
- Plus one of:
- Aphasia
- Apraxia
- Agnosia
- Executive Dysfunction
- Absence of Delirium
- Exclusion of Non-Organic, Systemic, Substance Related or other Neuro path.
- Progressive Decline
- Significant Social or Occupational Impairment

- Gradual onset organic mental disorder
- Progressive loss of multiple areas of cognitive & behavioural function
- Independent of attention
- Incidence & Prevalence ↑ with Age
- @ 65yrs < 5% effected
- @ 80yrs 15-20% effected
- Clinical Dx

- Diffuse Lewy Body Dementia
- Fluctuating Cognition
- Recurrent Visual Hallucinations
- Parkinsonism
- Parkinsons Disease
- Alzheimer's Disease
- Frontotemporal Dementia
- Younger Population Effected
- Family Hx in 50%
- Memory not effected
- Clinical Subtypes
- Wernicke-Korsakoff Syndrome
- Vascular Dementia
- Focal Neurological Signs
- Stroke on MRI or CT
- Onset within 3 Months of Stroke
- Effect Memory Late
- Frontal Executive Dysfunction

Amnesia
- Anterograde
- No New Memories Formed
- Medial Temporal Lobe
- Retrograde
- Old Memories Lost
- Cortex & Thalamus



Attention
- Ability to relate to external environment in a coherent manner over time
- Consciousness is a prerequisite

Memory
- Experience stored in retrievable form
- Inferred from change in behaviour as a result of previous experience
- Requires attention
- Strength & connection between neurons

Declarative Memory
- Medial Temporal Lobe (Creation)
- Cortex (Storage)
- Who, What, When, Autobiographical

Procedural Memory
- Basal Ganglia & Cerebellum
- Motor Programmes (Habits & Skills)
- Unconsciously Acquired

Short Term Memory
- Temporary (minutes)
- Limited Capacity
- Active Stage of Memory

- ETOH
- BZDs
- LOC
- Interference
- Relevance
- Attention

Long Term Memory
- Possibly Forever
- Possible Unlimited
- Consolidated & Modified over time
- Particular memory stored across

Working Memory
- Prefrontal Cortex
- Mental Sketch Pad
- Mixes old & new

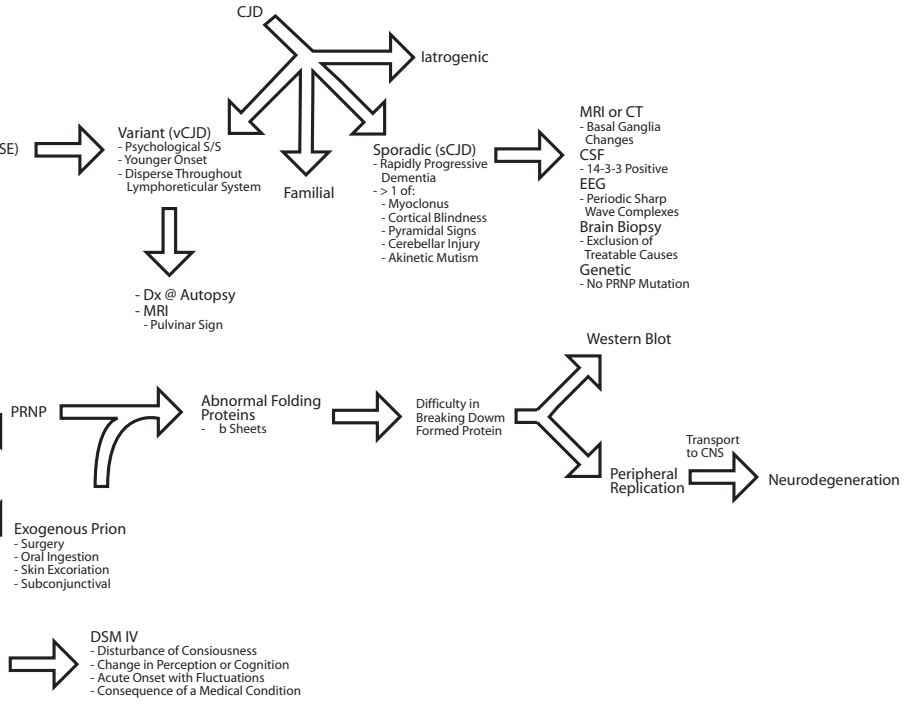


Amygdala
- Adds Emotion to Memory
- Enhances Consolidation
- Facial Memory

AAP = Amyloid Precursor Protein
CJD =
PNRP =

Derangement of Cerebral Metabolism
- Systemic Infection
- Poisons, Drugs or Withdrawal
- Seizures or Head Trauma
- Hypoxia
- Hypoglycaemia
- Fluid, Electrolyte or Acid Base Imbalances
- Hepatic or Renal Failure

Delirium
- Acute, reversible organic mental disorder with impaired attention & disorganised thinking
- 50% Unrecognised
- Rambling, irrelevant or incoherent speech
- Alterations in Sleep/Wake Cycle
- Psychomotor Fluctuations
- Incomplete or Absent Memory of Episodes
- More frequent in very old & very young
- Dementia is a predisposing factor



Bovine Spongiform Ecephalopathy (BSE)
- New disease in cattle from the UK in 1980s
- Rapid Clinical Course in Cattle
- Behavioural Disturbance
- Progressive Ataxia

Prion Disease
- Very Long Asymptomatic Incubation Period
- Protein only disease
- Species barrier hinders transmission

Prion
- Normal Cell Surface Protein
- Found Throughout Body
- Role in Neuro. & Lymphocyte Signalling

Varient (V(C)JD)
- Psychological S/S
- Younger Onset
- Disperse Throughout Lymphoreticular System

Sporadic (sCJD)
- Rapidly Progressive Dementia
- 1 of:
- Myoclonus
- Cortical Blindness
- Pyramidal Signs
- Cerebellar Injury
- Akinetic Mutism

Abnormal Folding Proteins
- b Sheets

Difficulty in Breaking Down Formed Protein

Western Blot

MRI or CT
- Basal Ganglia Changes
CSF
- 14-3-3 Positive
EEG
- Periodic Sharp Wave Complexes
Brain Biopsy
- Exclusion of Treatable Causes
Genetic
- No PRNP Mutation

DSM IV
- Disturbance of Consciousness
- Change in Perception or Cognition
- Acute Onset with Fluctuations
- Consequence of a Medical Condition