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# Dementia & Movement Disorders

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# Types of Dementia

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- **Alzheimers disease (60%)**
- **Vascular (6-25%)**
- **Lewy Body Disease (10-15%)**
- **Fronto-temporal dementia (5%)**
- **Others**
  
- **Mixed!**

# Types of Movement Disorders

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- **Parkinsonism**
- **Chorea**
- **Tremor**
- **Dyskinesia**
- **Dystonia**
- **Myoclonus**
- **Gait Disorder**
- **Restless Legs Syndrome**

# Types of Movement Disorders

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- **Parkinsonism- PD, LBD, PD+, drugs, strokes**
- **Chorea - Huntington's Disease, drugs**
- **Tremor – PD, ET, drugs**
- **Dyskinesia – PD, drugs**
- **Dystonia - PD**
- **Myoclonus - CJD**
- **Gait Disorder – PD, strokes**
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# Types of Movement Disorders

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# Huntington's Disease

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- Genetic:
  - autosomal dominant (chromosome 4p)
- Chorea, psychiatric problems, dementia
- Usual onset in 30s
- May be late onset
- May be sporadic

# Assessing Dementia

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## Aims:

- Distinguish early dementia from non-organic causes e.g. depression
- Distinguish dementia subtypes
- Diagnose unusual and potentially reversible causes of dementia

# Interview for memory

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Interview informant alone:

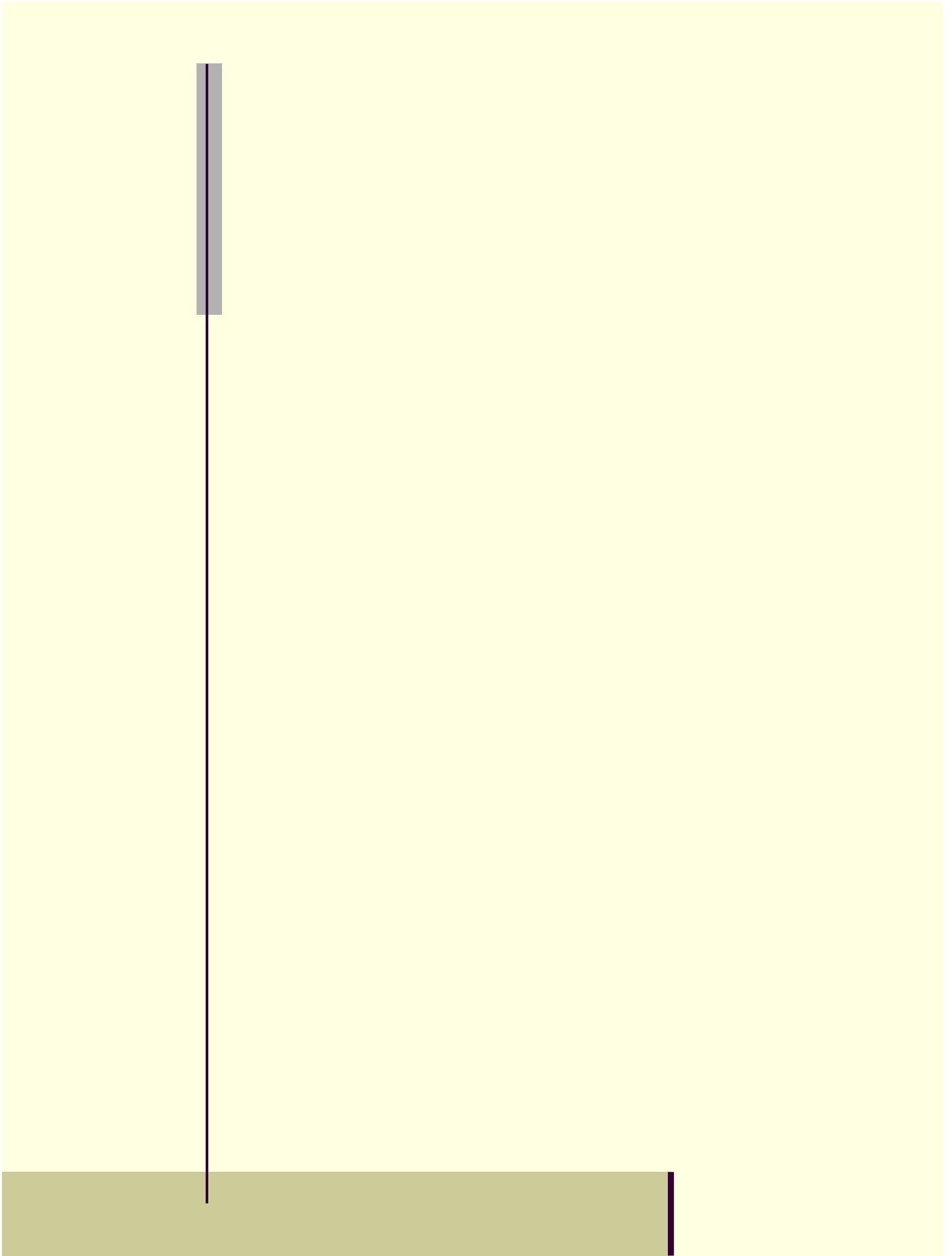
- What was the first symptom?
- How has it evolved?
- What impact is there on everyday life?
- Are there specific behavioural changes?  
e.g. affection? aloofness?



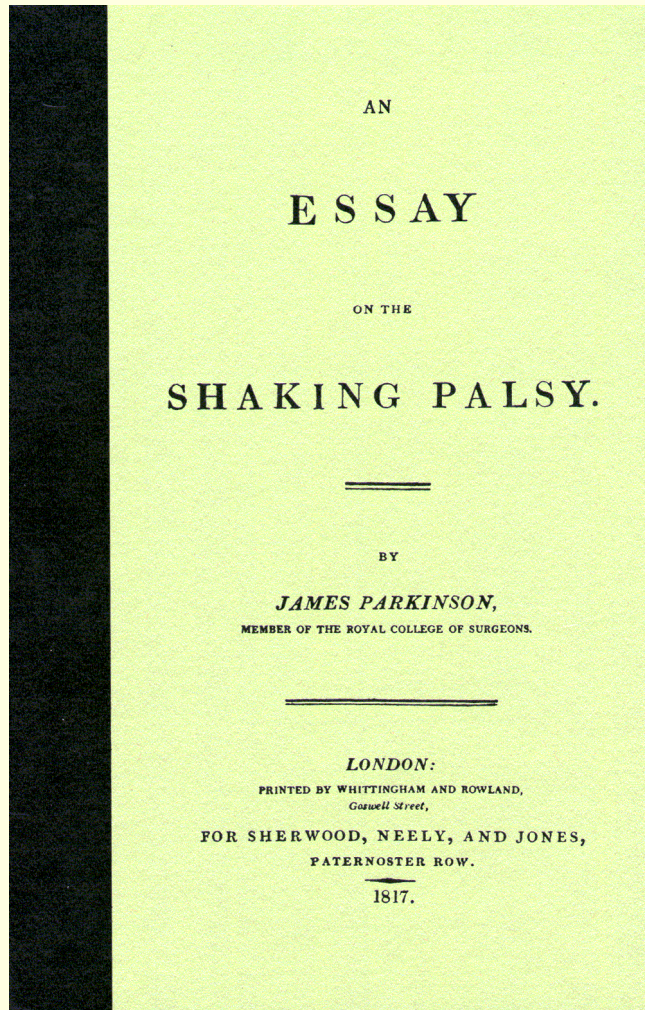
# Lewy Body Dementia

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- **Dementia**
- **Fluctuating cognition / delirium**
- **Visual hallucinations**
- **Spontaneous parkinsonism**
- **Other possible features:**
  - **repeated falls**
  - **syncope**
  - **neuroleptic hypersensitivity**
  - **systematised delusions**
  - **hallucinations in other modalities**
- **Less likely if stroke or other illness**



# Parkinson's Disease



# Classic Motor Symptoms of PD

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Rigidity

Hypokinesia

Tremor

Postural  
Problems

# My Clinic

Hallucination

Apathy

Constipation

Confusion

Sweating

Rigidity

Hypokinesia

Fatigue

Falls

Tremor

R.L.S.

Depression

Postural Problems

R.B.D.

Vivid Dreams

Urinary Problems

Pain

Anxiety

# Types of parkinsonism

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- Parkinson's Disease
- Diffuse Lewy Body Disease
- Parkinson's Plus Syndromes
- Drug induced parkinsonism
- Vascular parkinsonism
- Structural damage
- Other tremors

# Drug-Induced Parkinsonism

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- **Crucial to rule out, since most cases are reversible**
- **Careful medication history—list drug names**
- **Common offending drug types**
  - **Antipsychotics**
  - **Antiemetics**
- **Treatment: Stop offending medication + follow up**

# Vascular Parkinsonism

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- Abrupt onset, usually unilateral
- Step-wise or no progression
- Other signs—hemiparesis, aphasia, hyperreflexia
- Upright posture
- Marche a petit pas
- Strokes on neuroimaging helpful in confirming diagnosis
- May respond to L-dopa



# Is it PD?

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- Prominent tremor
- Asymmetry
- Good response to L-dopa

Less likely if

- Symmetrical rigidity, little tremor, legs>arms
- Prominent gait disorder, early falls
- Early dementia, autonomic dysfunction
- Poor response to L-dopa

# Non-motor Symptoms of Parkinson's Disease

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- Olfactory Dysfunction
- Visual
- Language
- Sleep Disorders (RBD)
- Restless Legs Syndrome
- Mood Disorders / Depression / Anxiety
- **Cognitive Impairment / Dementia** / Psychosis
- Addictive Behaviour
- Dysautonomia
- Pain

# Cognitive Deficits in PD

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- ↓ executive function
- Slowness in thinking (bradyphrenia)
- Attention – impaired reaction time, distracted
- Visuospatial
- Memory - ↓ working memory
  - ↓ retrieval (word finding) -improved by cueing – rather than recognition
  - ↓ temporal sequencing
  - poor learning strategies
- Language – impaired verbal fluency, word generation

# Dementia in PD

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- Prevalence of 40% - up to 70%
- Incidence 4-6 x greater than controls
- Types:
  - Dysexecutive
  - Generalised Limbic (↓ memory – storage>retrieval)

# Risk factors for Dementia in PD

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- Age
- Akinetic-rigid disease
- Atypical symptoms

# Psychosis in PD

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- **6%–40%**
- Perceptual disorders
  - Sense of a presence
  - Illusions - pattern
  - Hallucinations (visual, auditory and tactile)
- Paranoid delusions
  - often pathologic jealousy (e.g., spouse having sexual encounters with another person) - causes distress and reduces quality of life.



# Psychosis

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## ■ Risk Factors

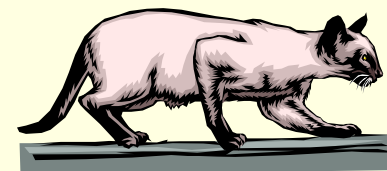
- Advanced age
- Prolonged disease duration & severity
- Cognitive impairment
- Depression
- Sleep disorders
- Probably in part dopaminergic induced



# Visual Hallucinations in PD

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- **90%** of psychotic PD have VH
- Usually well formed
- People or animals
- Usually recurrent
- Stable over time and place
- Not usually threatening
- Insight usually present – except if GP
- Intermittent – last seconds or minutes
- High association with dream phenomena





# Slippery Slope.....

Reduced Deep Sleep

Day Time Sleepiness

Illusions

Vivid Dreams

Hallucinations

Delusions

Delirium

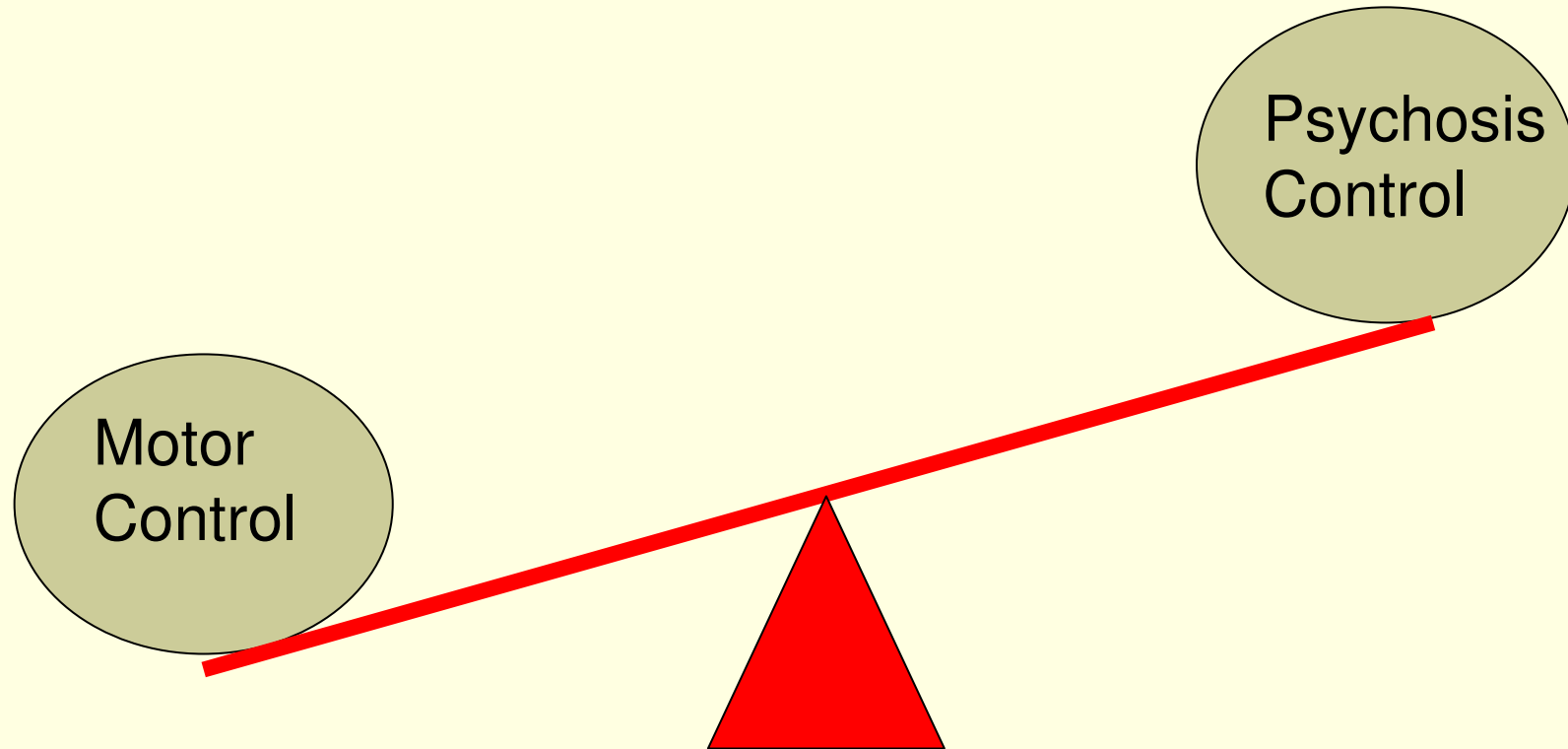


# Sequelae of Dementia in PD

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- Increased morbidity
- Increased burden of disease
- Decreased tolerability to drugs
- Decreased survival

# Management



# Medications for Parkinson's Disease

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- L-dopa (+ dopa decarboxylase inhibitor)
- Dopamine agonists (e.g. bromocriptine, cabergoline, pramipexole, ropinirole, rotigotine)
- COMT inhibitors (entacapone)
- Anticholinergics (benzhexol)
- MAO-B inhibitors (selegiline)
- Amantadine

# Adverse effects of PD medications

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- Delirium
- Psychosis – visual hallucinations
- Hypotension
- Motor fluctuations

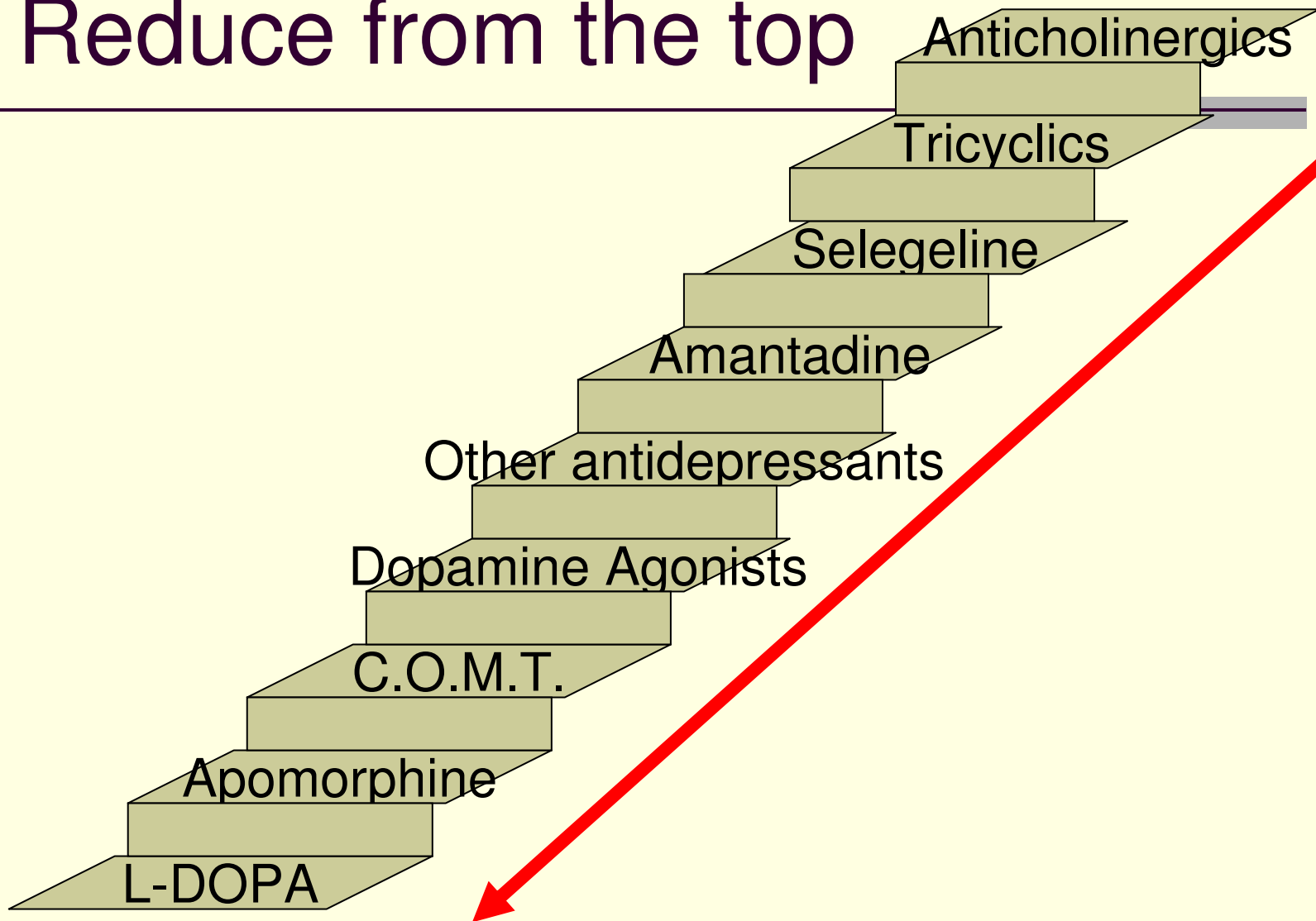
# Management

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- Reversible causes
- Eliminate Psychoactive Drugs
  - benzodiazepines / TCAD / anticholinergics
- Treat co-morbid psychiatric illness
- Non-Pharmacological Treatment – Carers:
  - Don't argue
  - Direct attention away
  - “let's check again – it may be a shadow”
- Eliminate P.D. medications
- Anticholinesterase e.g. rivastigmine →
- Antipsychotics – clozapine / quetiapine

# Reduce from the top

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# Lewy Body Dementia

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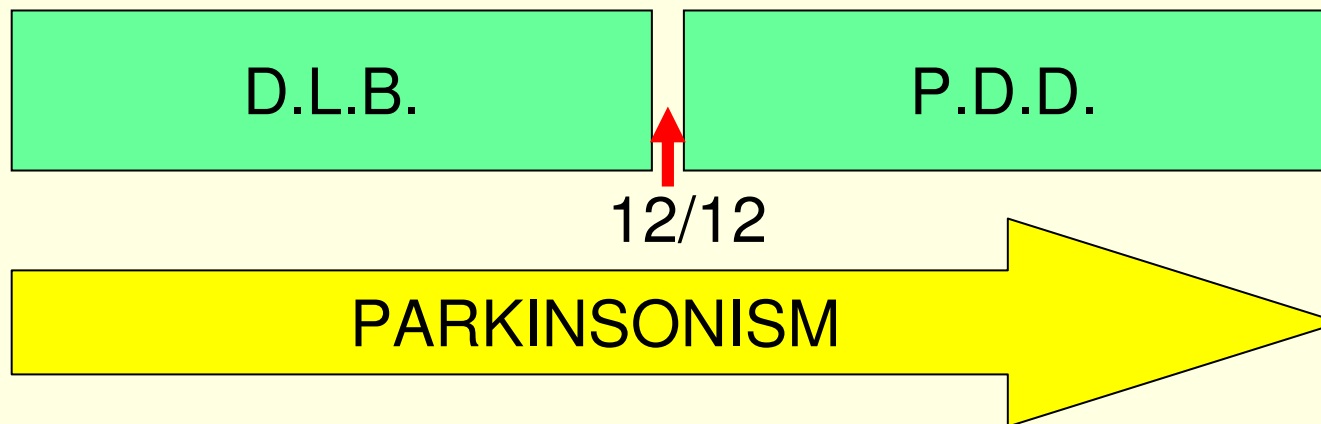
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# Parkinson's Disease Dementia vs Lewy Body Dementia

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- Temporal
- 12 month rule
- DLB = Dementia before or concurrent with parkinsonism



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- Lewy Body Dementia matters because medical treatment with antipsychotics or dopaminergics may be dangerous

# Quality of Life in PD

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- Motor disability (17%)
- Fatigue
- Impaired cognitive function
- Depression
- Pain
- Social isolation
- Explanation of disease at time of diagnosis