PARKINSON’S DISEASE

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INTRODUCTION

- Progressive neurodegenerative disorder causing problems with movement

- Caused by a deficiency of dopamine due to loss of dopamine producing brain cells in substantia nigra

- Dopamine is the neurotransmitter between SN and the rest of the basal ganglia to produce smooth purposeful movement
  - Lost 60-80% of cells in SN at onset of symptoms
HISTORY

1817 – James Parkinson first described 6 cases in “An Essay on the Shaking Palsy”

19th century – Charcot referred to disease as “maladie de Parkinson or Parkinson’s disease

Charcot also recognised non-tremolous forms of PD

- Slowness of movement is different to weakness

1919 – Recognised that patients with PD lose cells in SN
1957 – Dopamine discovered
1960 – Decreased dopamine concentrations in striatum
1961 – Injected Levodopa improved akinesia
1971 – Oral Levodopa developed
INTRODUCTION

Minority hereditary and linked to genetic mutation
- Alpha-synuclein (PARK 1) - Early onset with AD inheritance
- Parkin (PARK 2), PINK1 and DJ-1 – Rare, early onset
- LRRK2 (dardarin) – late onset

Majority are sporadic
- Due to combination of genetic susceptibility and exposure to environmental factors that trigger the disease
  - Pesticides and other toxins
  - Smoking protective
INTRODUCTION

- Mean age of onset – 60
  - 10% present before age of 50

- 50% more men than women

- Generally progression of disability is slow
  - Mean duration to death after diagnosis – 14 years

- Diagnosis sometimes difficult and uncertain
  - No definitive test
  - No biological markers (blood or CT changes)
  - Based on clinical criteria
Queen Square Brain Bank
Clinical Diagnostic Criteria for PD

**BRADYKINESIA** (slowness of movement)

+ 1 of the following

- Rest Tremor – 4-6 Hz
- Muscle Rigidity
- Loss of Postural Reflexes
BRADYKINESIA

- Slowness of voluntary movement
  - Difficulty planning, initiating and executing movement when performing sequential and simultaneous tasks
  - Decrement in amplitude of repetitive movements

- Characteristic symptoms
  - Slowness of performing ADL’s
  - Slow reaction times

- Best correlates with degree of dopamine deficiency

- Elderly with Parkinsonism
  - Decreased neuronal density in SN regardless of PD diagnosis
BRADYKINESIA

Characteristic signs

- Reduced facial expression (hypomimia) and blink rate
- Difficulty of fine finger movements and tasks
  - Doing up buttons, shoe laces, cleaning teeth, shaving
  - Micrographia
- Short, shuffling gait with reduced arm swing (freezing)
- Slow, soft, monotonous speech (hypophonic dysarthria)
- Difficulty swallowing and choking
- Drooling due to impaired swallow
FREEZING

Form of akinesia (loss of movement)

47% of patients report freezing

Most commonly affects legs

- Sudden and transient (<10sec) inability to move

Frequent cause of falls

Types

- Start hesitation – when beginning to walk
- Sudden inability to move feet in specific act
  - Turning, narrow passage, crossing street
- Tricks – marching, stepping over, music
TREMOR

Rest Tremor – 4-6 Hz
- Unilateral onset and asymmetrical
- Increased by anxiety, excitement, cold
- Decreased by action and sleep
- Hands, arms, legs, jaw and lips
  - Rarely involves neck, head or voice (ET or CD)
- Intrinsic hand muscles - pill rolling

Postural (re-emergent) tremor – 4-6Hz
- Tremor DELAYED after hands outstretched and horizontal
- Also responsive to dopamine

69% at onset and 75% during course of disease
RIGIDITY and POSTURAL INSTABILITY

**Stiffness**
- Increased resistance throughout range of passive movement of limb
- Limbs and axial
- Lead pipe rigidity and cog-wheeling (underlying tremor)
- Reinforcing manoeuvre increases rigidity esp. if mild
- Associated pain (misdiagnosed as arthritis, RC)

**Impaired balance**
- Retropulsion, propulsion and festination
- Pull test (>2 steps abnormal)
- 1st fall in PD (108 months), early PSP (16.8) and MSA (42)
Prospective Positive Criteria

3 or more of the following:

- Unilateral onset
- Rest tremor
- Progressive disorder
- Clinical course of greater than 10 years
- Persistent asymmetry

- Excellent response (>70%) to levo-dopa
- Levo-dopa response for greater than 5 years
- Severe levo-dopa induced dyskinesia
Non-specific Initial Presentation

- Slowness
- Excessive tiredness and fatigue
- Generalised aches and pains
- Unexplained weight loss
- Changes in posture
  - Flexing one elbow
  - Failing to swing one arm when walking
- Restless legs syndrome
- Loss of sense of smell (olfactory bulb affected early)
Other Problems

- **Urinary frequency and urgency**
  - Detrusor instability - TCA / oxybutinin
  - Enlarged prostate

- **Constipation**
  - Reduced mobility of bowel muscles – fluid intake

- **Dietary imbalance**
  - Swallowing dysfunction
  - Poor eating and drinking
  - Loss of weight

- **Autonomic dysfunction**
  - Postural hypotension and syncope – Fludrocortisone
  - Impotence
Other Problems

Cognitive problems
- Subtle frontal lobe dysfunction
- Some develop coincidental Alzheimer’s dementia
- Confusional and psychotic states
  - Seroquel (quetiapine) or Abilify

Mood changes
- > 50% are depressed - reaction to disability
- Apathy – lack of motivation
- Nocturnal dose of SSRI – Lexapro
- Severe depression - ECT - may improve PD temporarily
EXCLUSION CRITERIA

- Repeated strokes – stepwise progression
- Repeated head injury
- History of encephalitis
- Neuroleptic treatment at onset of symptoms
- Strictly unilateral after 3 years
- Supranuclear gaze palsy
- Cerebellar signs
- Early severe autonomic dysfunction
- Early severe dementia
  - Disturbances in memory, language and praxis
- Communicating hydrocephalus
- Negative response to large doses of levodopa (>750mg/day)
PARKINSONISM

Idiopathic Parkinson’s Disease
- Most common form of PARKINSONISM - no cause found

Genetic Parkinsonism – (70% < 20 years of age)
- Alpha-synuclein (PARK 1) - Early onset with AD inheritance
- Parkin (PARK 2), PINK1 and DJ-1 – Rare, early onset
- LRRK2 (dardarin) – late onset

Other disorders
- Multiple System Atrophy
- Progressive Supranuclear Palsy
- Diffuse Lewy Body Dementia
- Cortico-Basal Degeneration
- Drug-Induced Parkinsonism – Maxolon, anti-psychotics
- Arteriosclerotic (vascular) – tremor rare
Multiple System Atrophy (MSA)

- Early autonomic features
  - postural hypotension, impotence, constipation, incontinence
- Cerebellar – poor co-ordination and dysarthria

Progressive Supranuclear Palsy (PSP)

- Early postural instability - falls backwards
- Abnormal eye movements – esp. vertical
- Severe axial rigidity in extension
- Prominent speech involvement
PARKINSONIAN SYNDROMES

Diffuse Lewy Body Dementia
- Range from typical PD to Alzheimer’s dementia
- Fluctuation in attention and alertness
- Early visual hallucinations – well formed and detailed
- Prominent psychiatric features – delusions and depression

Corticobasal Degeneration
- Dystonia
- Myoclonus
- Visuo-spatial impairments
- Dyspraxia – inability to make familiar, purposeful movement
RATING SCALES

Hoehn & Yahr
- Provides gross assessment of disease progression

UPDRS (Unified Parkinson’s Disease Rating Scale)
- Assesses disability and impairment
HOEHN & YAHR

Stage 1
- Unilateral symptoms only

Stage 2
- Bilateral symptoms – No impairment of balance

Stage 3
- Mild-Moderate disease with balance impairment
  - Physically independent

Stage 4
- Severe disease, still able to walk with aids

Stage 5
- Fully dependent - wheelchair bound or bedridden
UPDRS

4 subscales

- Part I – Mentation, behaviour and mood (4 questions)
- Part II – Activities of daily living (13 questions)
- Part III – Motor function (14 questions)
- Part IV – Motor and other complications of advanced disease (11 questions)

Questions in parts I - III scored from 0-4

Questions in part IV scored 1-3 or yes/no

UPDRS total score = 199
EXAMINATION

- **Observation during consultation**
  - Reduced facial movements
  - Reduced blink rate

- **Olfaction**
  - Scratch test – coffee, soap, chocolate, petrol

- **Eye movements**
  - Supranuclear gaze palsy

- **Glabellar tap** (Present 80.5% - 83.3% sensitive, 47.5% specific)

- **Palpomental reflex** (Present 34% - 33% sensitive, 90% specific)

- **Speech**
  - Soft, slow, monotonous

- **Drooling**
EXAMINATION

- **Tremor**
  - Rest, increased with concentration

- **Tone**
  - Lead pipe and cog-wheeling, increased on reinforcement

- **Sequential fine finger and foot movements**
  - Bradykinesia and inco-ordination

- **Gait**
  - Slow, shuffling
  - Flexed posture
  - Reduced arm swing
  - Poor postural reflexes - retropulsion
MANAGEMENT

- Maintenance of **Quality of Life** – presently, no CURE

**TEAM APPROACH**
- Neurologist
- Rehabilitation Specialist
- Nurse
- Physiotherapist
- Occupational Therapist
- Speech Pathologist
- Dietician
- Psychologist
Begin symptomatic treatment when symptoms start to **interfere with function** to provide relief of symptoms:

- Threat to employment
- Difficulty with domestic ADL’s
- Worsening gait and balance problems

- Restore function

- Individualise treatment
## MEDICATIONS

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LEVODOPA – Sinemet and Madopar

Most effective medication

- Carbidopa or benserazide
  - delays conversion of levodopa to dopamine until reaches the brain

- Replenish brains dwindling supply
- Effective in 75% of cases

- Bradykinesia and rigidity respond best
- Tremor marginally reduced (anti-cholinergics better)
- Balance, speech and swallow may not improve

- Improve absorption
  - Take away from meals – 30 mins before or after
  - Empty stomach and avoid protein rich meals

- Each year of therapy – 10% chance of complications
Levodopa Side Effects

Nausea
- Motilium (Doperidome)
- Maxolon and Stemetil – extrapyramidal SE’s

Postural Hypotension
- Fludrocortisone and Mestinon

Dyskinesias
- Reduce dose
- Amantadine

Hallucinations and psychosis
- Reduce dose
- Last tablet earlier at night
- Anti-psychotics (last resort) - Seroquel or Abilify
Motor Fluctuations

Levodopa honeymoon
- Good initial period lasting 2 - 5 years on 2 - 4 doses/day
- Benefit smooth and stable
- Subsequently no good effect after each dose

On-off phenomenon – (wearing off)
- Beneficial effect linked to doses of levodopa
- Start of relief after latency period
- Termination of beneficial effect
- Progressive shrinkage of benefit
- Nocturnal bradykinesia and stiffness
Motor Fluctuations

**Rescheduling levodopa daily doses**
- 3 - 4 doses – every 3 - 4 hours from waking (6,10,2,6)
- Doses given during the day, when patient needs medication
- Improves ‘wearing off’
- Prolongs duration of ‘on’ hours
- Doses and times tailored to patients needs
  - First dose in morning higher to produce initiation
  - Increase afternoon doses that fail to induce ‘on’

**Controlled release – Sinemet CR**
- Nocturnal – improves sleep and reduces rigidity
- May improve morning bradykinesia and foot dystonia
Yes

Functional impairment

No

Pharmacological management

Yes

Severe tremor

No

Nonpharmacological management

- Group support
- Education
- Exercise
- Nutrition

Specialist referral

Anticholinergics or levodopa or dopamine agonists or amantadine

Inadequate response or no response

Consider deep brain stimulation
Motor manifestations

Maintain on lowest possible dose

• Increase levodopa
• Add dopamine agonist

Good response

Yes

Inadequate response or no response

No

Consider alternative diagnosis (e.g. multiple system atrophy)

Wearing off

• Combine levodopa and dopamine agonist
• Switch dopamine agonist
• Controlled-release levodopa
• Smaller, more frequent doses of levodopa

• Dietary protein adjustment
  • COMT inhibitor (entacapone)
  • Selegiline
  • If refractory, liquid levodopa or apomorphine

Dyskinesia

• Decrease levodopa dose
  • Add amantadine
• Add or increase dopamine agonist
• Switch dopamine agonist

Consider deep brain stimulation
Non-motor manifestations

Orthostatic hypotension
- Increase salt and water intake
  - Domperidone
  - Pyridostigmine
  - Fludrocortisone
  - Ephedrine
  - Stockings
  - Midodrine
  - Octreotide

Bladder symptoms
- Bladder training
  - Oxybutynin,
  - propantheline,
  - nocturnal intranasal desmopressin

Constipation
- Dietary modification and exercise
- Stool softeners, bulking agents

Sexual dysfunction
- Urological evaluation
  - Erectile agents

Sialorrhea
- Intraperatid botulinum,
  - toxin A

Psychosis
- Review antiparkinson drugs
- Low dose quietapine, low dose clozapine
DUO-DOPA

- Advanced stage of PD
- Motor fluctuations difficult to control with oral levodopa

- Continuous intraduodenal levodopa / carbidopa gel
  - Less variability in levodopa concentrations
  - Trial with naso-duodenal tube
  - Significant improvement
    - PEG with tube placed at duodenal-jejunal junction
  - Portable pump

- SE’s similar to oral levodopa
- Safe alternative for patients not suitable for DBS
COMT inhibitors

Comtan / Stalevo

- Stalevo – 100/25/200 150/37.5/200 200/50/200
- Catechol-O-methyltransferase (enzyme that breaks down dopamine)

- Prolongs effect of levodopa
- Decrease duration of ‘off’ periods
- Allow reduction of total levodopa dose

SE’s
- Urine discoloration
- Nausea, diarrohoea, dizziness, insomnia, hallucinations
DOPAMINE AGONISTS

- Directly stimulate post-synaptic dopaminergic receptors
- Generally first line in ‘younger’ patients (< 60 yo)
- Reduces or delay motor complications
- Effective monotherapy and useful adjunct to levodopa
- Less symptomatic benefit but can prolong ‘on’ hours

- Lower risk of motor complications
  - Limit need for levodopa

- Poorly tolerated in elderly
  - Drowsiness, confusion, postural hypotension, hallucinations, dyskinesia, compulsive behaviour (gambling, hypersexuality)

- Fibrosis caused by older agents – chest and valvuopathy
PRAMIPEXOLE

Non-ergot (June 2008)
- Selective activity D2 receptors and preferential affinity for D3 receptors
- Approved for monotherapy in early PD
- Adjuvant therapy in advanced Parkinson’s disease
- May delay need for levodopa for up to 4 years
- Better side effect profile
  - Nausea, dizziness, drowsiness, insomnia, hallucinations
  - Cognitive and behavioural changes may occur - gambling
- No associated cardiac fibrosis
- 250 ug to 4.5 mg per day (tds dosage)

Ropinirole
- 24 hour prolonged release, once daily 2-8 mg /day
- Approved in Australia for Restless legs syndrome
PRAMIPEXOLE – Early PD

Levodopa naïve patients

- Improved motor score (25%) and ADL ability (22%) from 3 weeks as monotherapy
PRAMIPEXOLE – Advanced PD

Sifrol + levodopa vs placebo + levodopa at 4 months

- Improved motor score (25%) and ADL ability (22%) at 18 weeks
CALM-PD: a 4-year study of Pramipexole vs levodopa as initial treatment for PD

- Delays onset of motor complications

- Improves dyskinesia

- Enables reduction in levodopa (38%)
PRAMIPEXOLE
Drug resistant Tremor

- Placebo + levodopa (n=39)
  - Baseline: 10.9
  - End of 12-week maintenance: 9.4 (14% decrease)

- Sifrol + levodopa (n=44)
  - Baseline: 11.9
  - End of 12-week maintenance: 6.1 (49% decrease)

*p<0.0001
DOPAMINE AGONISTS

🌟 Rotigotine (not available in Australia yet)

- Lipid–soluble, non ergot, D1, D2, D3 receptor agonist
- Transdermal patch
- Continuous, once daily administration
- Avoids pulsatile dopaminergic stimulation
- Better patient compliance
- Well tolerated
APOMORPHINE

- Used since mid-1980’s
- Potent, non-selective, short-acting dopamine agonist
- Fluctuating PD with recurrent off periods despite optimised oral therapy
  - Reduces “off” time by 50%
    - rapid onset within 15 min and lasts 90 mins
  - Reduces levodopa requirements
  - Reduced dyskinesia
- Subcutaneous infusion or intermittently
  - 75% improve with 2-6mg /day with mean of 3 rescues doses per day
- Subcutaneous injection site reactions
- Peripheral dopaminergic SE’s – regular domperidone
  - Nausea, vomiting, dizziness, hypotension, yawning, rhinorrhea
MAO-Inhibitors

MAO-B (monoamine oxidase-B) inhibitors
- Prolong duration of action of dopamine

Selegiline
- MAO-B (monoamine oxidase-B) inhibitor
- Originally thought to slow the loss of nerve cells
- May delays need for levodopa therapy for 1 year
- With levodopa, may enhance and prolong its effect
  - Reduce wearing off
- SE’s - Nausea, postural hypotension, insomnia

- Interaction with Fluoxetine (Lovan, Prozac)
- Approved in US for treatment of Depression
MAO-Inhibitors

Rasagiline

- 2<sup>nd</sup> generation irreversible MAO-B inhibitor
- 10 x more potent than Selegiline
- Not metabolised to amphetamine derivatives

- Effective as monotherapy or adjunct therapy
  - Reduces motor fluctuations and “off” time

- Rapidly absorbed by GIT tract and crossed BBB
  - Well tolerated in elderly
  - 0.5 – 1mg once daily

- Neuroprotection trials ongoing
OTHER MEDICATION

**Amantadine**
- Anti-viral
- Reduce levodopa induced dyskinesia
- Effectiveness wears off after a few months
- SE’s – agitation, insomnia, hallucinations

**Anti-cholinergics – Akineton, Artane, Cogentin**
- Reduce tremor and rigidity in 50%
- Short-lived improvement
- SE’s – dry mouth, confusion, constipation, hallucinations
SURGERY

Advanced PD
- levodopa-responsive
- dyskinesia or disabling ‘off’ fluctuations despite therapy

Earliest surgery
- Selectively destroying specific parts of the brain
- Thalamotomy – VIM nucleus
  - Improved contralateral tremor
- Pallidotomy – posteroventral
  - Improved contralateral tremor, rigidity, bradykinesia
  - Improved gait and balance
  - Reduced need for levodopa – reducing dyskinesia and dystonia
- Permanent Complication - dysphasia
Deep brain stimulation

- Sub-thalamic stimulation by electrodes
- Reduce tremor, bradykinesia and rigidity
- Improve symptoms without fluctuations or dyskinesia
- Reduce need for levodopa and decrease dyskinesia
- Good response to levodopa = good response to stimulation
- No effect on speech, posture, balance, freezing or depression

- Battery life 3 – 5 years – surgically replaced
- Complications
  - Stroke, ICH, infection
  - Speech and balance problems
PROGNOSIS

- Chronic and progressive disease
- Some become severely disabled, others only minor
- Tremor may or may not be the major symptom
- Each case is individual and progression varies
- Generally symptoms progress over 20 years
- Not a fatal disease
- Does not reduce life expectancy
  - Late complications such as choking, pneumonia and falls
PARKINSON’S CLINIC

Multi-disciplinary clinic
- Cathie - Co-ordinator - 6652 8820

Allied Health Assessment – 4 hours
- Physiotherapist
- Occupational Therapist
- Nurse Educator
- Speech Pathologist and dietician (if required)
- Psychologist (if required)

Neurologist review – 1 hour
- History, examination, management review

Case conference
- Discuss patient and formulate management plan
CASE – Mrs SE – Young Onset

48 yo – registered nurse
6 month history of left sided tremor
  • Not interfering with function
  • Medication not commenced

Review 9 months later
  • Dragging left foot when walks
  • Left sided tremor – difficulty taking manual BP
  • Sifrol commenced 125mcs bd increasing slowly

Walking and tremor improved – Sifrol 500 mcg tds
  • Able to take manual BP easier
  • Occasional early morning nausea
  • Ongoing tremor and increased tone
  • Increased Sifrol slowly to 1mg tds
  • Motilium for nausea
CASE - Mr LO – Tremor dom

- 45 yo
- Self employed baker
- 12 month history of right hand tremor and stiffness of right leg
  - Sinemet 100/25 up to 2 tablet tds for 3 months – no improvement
- Seen first in May 2006 – commenced Cabaser
  - Tremor improved by 25% on 4mg daily
- Added Artane 2mg tds – SE’s drowsiness – ceased after a week
- Frustrated with lack of improvement - ceased Cabaser
  - Tremor worse within a week – recommenced and increased slowly up to 8 mg daily
  - No further improvement
- Sinemet 100/25 added up to 2 tablet tds
  - No improvement in tremor
- Sub-thalamic brain stimulation discussed
- Sifrol added and slowly increased to 500 mcg tds
  - Tremor improved but nausea and drowsiness, increased Sinemet to 100/25 3 tablet tds
  - Tremor well controlled, experiencing motor fluctuations (wearing off ½ hour)
- Changed Sinemet to Stalevo 200/50/200 tds and reduced Sifrol to 250mcg tds
CASE - Mr RP – Early PD

- 60 yo
- Parkinson’s disease Dx Aug 2005
- Commenced Sinemet 100/25 qid and Cabaser 0.5 mg nocte
- First reviewed in Aug 2005
  - Slow, shuffling, slurred speech
  - Cabaser increased slowly to 2 mg nocte
- Marked improvement in walking, transfers and bed mobility - 70%
- Wearing off – Sinemet changed to Stalevo 100mg qid
  - Improved by once again having difficulty with bed mobility and restless legs
- Sinemet CR added at night with improvement
- June 2008 – Cabaser ceased due to reports of valvopathy emerging and suggested Sifrol be commenced by GP, once available of PBS if deteriorates
  - Marked deterioration – shuffling and freezing but recommenced Cabaser
  - Despite remaining on Stalevo 100 mg qid and Sinemet CR nocte
- Sifrol commenced and slowly increased to 500 mcg tds.
  - Improved, but not as good as Cabaser
  - Increased further slowly to 1mg tds
CASE - Mr N McF – Advanced

- 78 yo
- Parkinson’s disease Dx 1994 – reduced right arm swing and tremor
- 9 months later commenced on Sinemet with improvement in symptoms
- Permax 500 mcs tds added with improvement
- Sinemet CR then added to improve bed mobility
- Initial review Jan 2004 – experiencing wearing off
  - Sinemet CR increased to bd
  - Echo organised as on Permax
- Increased tremor and drowsy
  - Permax weaned and Sinemet increased to 250/25 qid with improvement
- Apathy during the day – reduced Sinemet CR to nocte
  - Improved level of alertness, but mobility and balance worse
- Sifrol added as higher dose of levodopa result in cognitive SE’s
  - 250 mcg tds
  - Walking better and tremor improved
  - Tolerating well
  - Reduced Sinemet 250/25 to tds
CASE – Mrs EW – Elderly PD

83 yo

Parkinson’s disease Dx Feb 06

- Tremor of both hands
- Gait deterioration
- Sinemet 100/25 ½ tds helped tremor
  - Full tablet resulted in GIT SE’s
- Changed to Madopar 100/25
  - Tolerated well at 1 tablet tds
  - Improved tremor, handwriting and ability to play bridge
- Gait slowed – Increased Madopar to slowly 2 tablets
  - No improvement
- Added Sinemet CR
  - Headaches – ceased after 3 days
- Added Sifrol 125 mcg bd and reduced Madopar to 1 tablet qid
  - Improved tremor and walking
  - No side effects
CASE – Mrs NK

63 yo

12 month history of restless legs

- Painful legs
- Heaviness in legs
- Constantly move when gets into bed

Sifrol 250 mcg nocte

- “in heaven”
PHYSIOTHERAPY

- Improve gait patterns and avoid immobilisation

- Walking
  - Take larger steps and raise toes when stepping forward
  - Feet approx 12 inches apart and stand up straight
  - Swing arms - takes body weight off legs and reduces fatigue
  - Maintain good posture and head control

- Floor markings - visual cues and encourages stepping
- Walking over obstacles to encourage weight bearing
- Music to help regain rhythmic movement
- Walking aids - tend to carry but rollator frame best
PHYSIOTHERAPY

 Restore normal body alignment
  ♦ Minimise risk of falls
  ♦ Stimulate balance reactions
  ♦ Teach how to regain balance when centre of gravity changed
  ♦ Encourage weight transfer with correct head and trunk movements

 Reduce increased tone
  ♦ ROM exercises - passive stretching
  ♦ Relaxation with facilitating techniques:
    • Light touching, vibration
PHYSIOTHERAPY

- Reduced the effects of inactivity
  - Improve strength and flexibility
  - Maintain muscle tone
  - Prevent bones loss (osteoporosis)
  - Improve independence – improve sense of well being

- Release endorphins
  - Positive effective on brain
  - Increased energy levels
  - Reduce insomnia

- Group therapy
  - Promotes social growth and development
OCCUPATIONAL THERAPY

Adaptive equipment

- Elevating chair and bed
- Rails for the bathtub and toilet
- Toilet aids - raised toilet and bath seats
- Feeding - large rimmed plates and plate guards
- Large comfortable handles
- Velcro closures on clothes rather than buttons
- Bed poles and monkey bar

Home visit

- Individualise needs
SPEECH PATHOLOGY

Hypophonic dysarthria with hesitation and freezing

- Formal therapy
  - General speech and tongue exercises
  - Provide appropriate communication aids
  - Lee-Silverman voice therapy
  - Ice and stroking under chin (vibration of muscles)
  - Tilt head forward on swallowing

- Advise on dietary strategies
  - Eat smaller portions more frequently
  - Increase water intake (6-8 /day) to reduce constipation
  - Avoid protein rich food around time of medication
CONCORD PARKINSON’S DISEASE CLINIC
INITIAL ASSESSMENT

YEAR OF DIAGNOSIS:___________________

OTHER PERSONS PRESENT:

Name:________________________________________________________________________

Relationship:_______________________________________________________________

Phone:_______________________________________________________________________

MEDICAL PROBLEMS:

MEDICATION:
Type and dosage:_______________________________________________________________

MANAGEMENT:  □ dosette □ alarm □ none □ self medicates □ carer

RELIABILITY:  □ always remembers □ occasionally forgets □ unreliable

ISSUES:_____________________________________________________________________

CLIENT IDENTIFIED PROBLEMS:_______________________________________________
CONCORD PARKINSON’S DISEASE CLINIC
INITIAL ASSESSMENT

**SOCIAL SITUATION:**

- Occupants of house: ___________________________________________________________
- Support network: _____________________________________________________________
- Employment: _________________________________________________________________
- Social activities / recreation / interests / groups: _________________________________
- Would you be interested in counselling; ☐ yes ☐ no
- If yes; ☐ patient ☐ carer ☐ other _______________________________________________

**COMMUNITY SERVICES:**

- ☐ Nil ☐ SHNS ☐ Home care ☐ MOW ☐ Shopping bus
- ☐ Home respite ☐ Centre respite ☐ Residential respite
- ☐ Other:_____________________________________________________________________

**PRIVATE SERVICES:** ☐ Nil

- ☐ Other:_____________________________________________________________________
- Services required: ☐ no ☐ yes
- If yes, which services__________________________________________________________________
CONCORD PARKINSON’S DISEASE CLINIC
INITIAL ASSESSMENT

HOME ENVIRONMENT:

House structure:  □ single  □ double  □ other ________________________________
House ownership: □ own  □ rented  □ DOH

Comments: ________________________________________________________________

Access:

Front:  No. of steps:______  Rails: □ yes  □ no
Back:  No. of steps:______  Rails: □ yes  □ no
Inside: No. of steps:______  Rails: □ yes  □ no

Comments: ________________________________________________________________

Home visit:

Home assessment previously performed? □ yes  □ no
Year____  Provider____
Home assessment required? □ yes  □ no  □ maybe
CONCORD PARKINSON’S DISEASE CLINIC
INITIAL ASSESSMENT

MOBILITY:

Gait Aids:  □ Nil  □ W / C  □ W / S  □ PUF  □ Wheeled frame
□ Independent  □ Standby supervision  □ Assistance

Posture:  □ Unimpaired  □ Impaired

Falls:  □ no  □ yes  Number of falls in the last 3 months:___________________

Location:______________________________________________________________________

Activity:_______________________________________________________________________

Exercise Tolerance:

Outdoors: (distance in metres or time)
_____________________________________________________________________________

Frequency of outdoor mobility: (e.g. daily, weekly etc)
_____________________________________________________________________________

Limiting factors: (eg SOB, fatigue, freezing, pain, dystonic posture, dyskinetic movements)
_____________________________________________________________________________

Gait assessment required:  □ yes  □ no  □ maybe

Gait assessment performed:  □ yes  □ no  Details:__________________________________
CONCORD PARKINSON’S DISEASE CLINIC
INITIAL ASSESSMENT

ACTIVITIES OF DAILY LIVING:

Personal.

Eating: □ Independent □ Independent/equipment □ Supervision □ Assistance □ Dependent
Toileting: □ Independent □ Independent/equipment □ Supervision □ Assistance □ Dependent
Grabrails: □ yes □ no Nightlight: □ yes □ no

Voiding pattern day and night:_____________________________________________________

Bathing: □ Independent □ Independent/equipment □ Supervision □ Assistance □ Dependent
Grabrails: □ yes □ no

Dressing: □ Independent □ Independent/equipment □ Supervision □ Assistance □ Dependent
Bed mobility: □ Independent □ Independent/equipment □ Supervision □ Assistance □ Dependent

Handwriting: Problems: □ no □ yes Hand Dominance: □ R □ L
Comment:_____________________________________________________________________
Sample Client Name:________________________________________ Sample Client Signature___________________

Instrumental.

Cooking: □ client □ carer □ shared duties
Cleaning: □ client □ carer □ shared duties
Shopping: □ client □ carer □ shared duties
Financial: □ client □ carer □ shared duties
Laundry: □ client □ carer □ shared duties
CONCORD PARKINSON’S DISEASE CLINIC
INITIAL ASSESSMENT

NUTRITION SCREEN:

- Obvious underweight or frailty? □ Yes □ No
- Have you unintentionally lost weight? □ Yes □ No
- If yes to either above questions – refer to Dietitian.

- Form provided: “Unplanned weight loss” □ Yes □ No
- Has food intake declined over past 3 months? □ Yes □ No
- If yes, is this due to:
  - □ loss of appetite
  - □ digestive problems eg: reflux, nausea
  - □ chewing difficulties
  - □ swallowing difficulties
  - □ difficulties with feeding self/ fatigue
- If yes to any of above – refer to Dietitian
CONCORD PARKINSON’S DISEASE CLINIC
INITIAL ASSESSMENT

Protein-levodopa interaction:

Do you experience unpredictable “on-off”* fluctuations in movements?
* (“on” – improvement in PD symptoms, eg: less tremor/rigidity; “off” – return of PD symptoms, eg: bradykinesia)

☐ Yes ☐ No

If yes – refer to Dietitian.

Do you experience constipation once a week or more?

☐ Yes ☐ No

Form provided: “Parkinson’s disease & constipation”

☐ Yes ☐ No

Dietitian assessment required?

☐ Yes ☐ No

Forms provided:

“Good Nutrition and Parkinson’s disease”

☐ Yes ☐ No

“Reflux and Parkinson’s disease”

☐ Yes ☐ No

BMI weight (kg) / height (m2)
CONCORD PARKINSON’S DISEASE CLINIC
INITIAL ASSESSMENT

SWALLOWING AND COMMUNICATION:

Since having Parkinson’s Disease – Have you ever:
- Had any chest infections or pneumonia? □ yes □ no
- Had any problems when swallowing food, drinks or tablets? □ yes □ no
  (eg coughing, choking, food sticking, pain, reflux, extra effort, increased time)
- Had any problems with saliva? (eg too much drooling or dry mouth) □ yes □ no
- Had any problems chewing or holding food in your mouth? □ yes □ no
  Comment:___________________________________________________________

If answer is yes to any question – score 1. Score = ____________

- Had a change in your voice volume? □ yes □ no
- Had a change in the clarity, fluency or rate of your speech? □ yes □ no
- Noticed that others have difficulty hearing or understanding you? □ yes □ no
- Had any problems remembering words, making up sentences or understanding others? □ yes □ no

If answer is yes to any question – score 2. Score = ____________

If patient scores 1 or 2 please refer to speech pathologist.

Speech Pathology assessment required? □ yes □ no
CONCORD PARKINSON’S DISEASE CLINIC
INITIAL ASSESSMENT

Forms given to client / carer:

- “Ways You Can Compensate for Swallowing Difficulties” □ yes □ no
- Tips for Parkinson’s Disease – Swallowing Medications □ yes □ no
- Dry Mouth □ yes □ no
- Excess Saliva □ yes □ no
- Voice Volume □ yes □ no
- Unclear Speech □ yes □ no
CONCORD PARKINSON’S DISEASE CLINIC
INITIAL ASSESSMENT

**COGNITION:**

*NB: This information should be collected from a secondary source e.g. carer / partner.*

Previous cognitive assessment:  ☐ no  ☐ yes

By whom?__________________  When?__________________  Where?__________________

Has this client been experiencing any changes in memory (e.g. not knowing where they are, forgetting recent events, names of people; misplacing objects; leaving appliances on such as the stove)?

☐ no  ☐ yes  If yes, please specify:______________________________________________

Has this client been experiencing any changes in his / her thinking (e.g. difficulty organising things to do; taking longer to think things through; difficulty understanding someone else’s point of view; difficulty acknowledging own difficulty; persisting on one topic)?

☐ no  ☐ yes  If yes please specify:______________________________________________
CONCORD PARKINSON’S DISEASE CLINIC
INITIAL ASSESSMENT

a) Driving: □ yes □ no (If no please go to g).
b) Manual / Automatic car _____________________________
c) Renewal date of licence ___________________________
d) Aware of current RTA legislation? □ yes □ no □ n/a
e) Informed in this session: □ yes □ no □ n/a
f) Driving restriction: Self / RTA □ yes □ no □ n/a
g) Carer drives: □ yes □ no

Public transport: □ yes □ no
Independent: □ yes □ no
Comments:____________________________________________________________________

Disabled parking permit: □ yes □ no Forms provided: □ yes □ no □ n/a
½ price taxi: □ yes □ no □ n/a Forms provided: □ yes □ no □ n/a

PARKINSON’S AUSTRALIA:
Member: □ yes □ no
Membership package provided: □ yes □ no □ n/a
<table>
<thead>
<tr>
<th>Parkinson’s Disease Movement Disorders:</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROBLEMS WITH:</td>
</tr>
<tr>
<td><strong>Movements</strong></td>
</tr>
<tr>
<td>Present at any time of day</td>
</tr>
<tr>
<td>Impedes function to unacceptable level</td>
</tr>
<tr>
<td>Dyskinesia</td>
</tr>
<tr>
<td>Tremor</td>
</tr>
<tr>
<td>Dystonia</td>
</tr>
<tr>
<td>Rigidity</td>
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<tr>
<td>“On – off” periods</td>
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</tbody>
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**SUMMARY:**

**IDENTIFIED ISSUES:**

**INTERVENTIONS:**