Local Guideline

Health
Hunter New England
Local Health District

Perioperative Management of Patients with Parkinson's Disease

Sites where Local Guideline applies	
This Local Guideline applies to:	John Hunter Hospital
1. Adults	Yes
2. Children up to 16 years	No
3. Neonates – less than 29 days	No
Target audience	Nurses, doctors, anaesthetists, surgeons, neurologists, movement disorders team members.
Description	This document provides guidance for nurses and doctors in the perioperative setting on how to assess and safely manage patients with Parkinson's Disease who are undergoing elective surgery.

Go to Guideline

Keywords	Parkinson's Disease, PD, DBS, unipolar diathermy, bipolar diathermy, surgery, theatre, perioperative, anaesthetics
Document registration number	
Replaces existing document?	No

Related Legislation, Australian Standard, NSW Ministry of Health Policy Directive or Guideline, National Safety and Quality Health Service Standard (NSQHSS) and/or other, HNE Health Document, Professional Guideline, Code of Practice or Ethics:

- See Reference Section on Page 7

Prerequisites (if required)	Patients with Parkinson's Disease undergoing elective surgery should be reviewed by a doctor in the perioperative clinic to determine if medication management, Parkinson's Disease optimisation, or management of advanced therapies are required.
Local Guideline note	This document reflects what is currently regarded as safe and appropriate practice. This guideline does not replace the need for the application of clinical judgment in respect to each individual patient. If staff believe that the guideline should not apply in a particular clinical situation they must seek advice from their unit manager/delegate and document the variance in the patient's health record. If this document needs to be utilised outside of the John Hunter Hospital please liaise with the local Neurology Service to ensure the appropriateness of the information contained within the Guideline and Procedure.
Position responsible for the Local Guideline and authorised by	JHH Perioperative Executive Committee
Contact person	Dr. Paul Healey
Contact details	Paul.Healey@health.nsw.gov.au (02) 49223013
Date authorised	Insert date once periop exec signs off
This document contains advice on therapeutics	Yes Approval gained from Local Quality Use of Medicines Committee on (insert date)
Issue date	October 2021
Review date	October 2024

Note: Over time links in this document may cease working. Where this occurs please source the document in the PPG Directory at: http://ppg.hne.health.nsw.gov.au/

PURPOSE AND RISKS

Parkinson's Disease (PD) is a relatively common neurological disorder that is characterised by the progressive death of dopaminergic neurons in the Substantia Nigra leading to resting tremor, muscle rigidity, and bradykinesia.

PD patients often have complex and highly individualised drug regimes, due to a fine balance between disease symptoms and treatment side effects. When patients with Parkinson's Disease are admitted to hospital for surgery, they are at risk of:

- Exacerbation of their PD symptoms due to missed or delayed medication doses
- Rare but severe, or even life-threatening, withdrawal syndromes
- Adverse drug reactions between PD medications and those used commonly in the perioperative period
- Perioperative complications

The purpose of this guideline is to reduce the risk of adverse outcomes for all patients with PD undergoing elective surgery at the John Hunter Hospital.

Risk Category*:* Clinical Care & Patient Safety

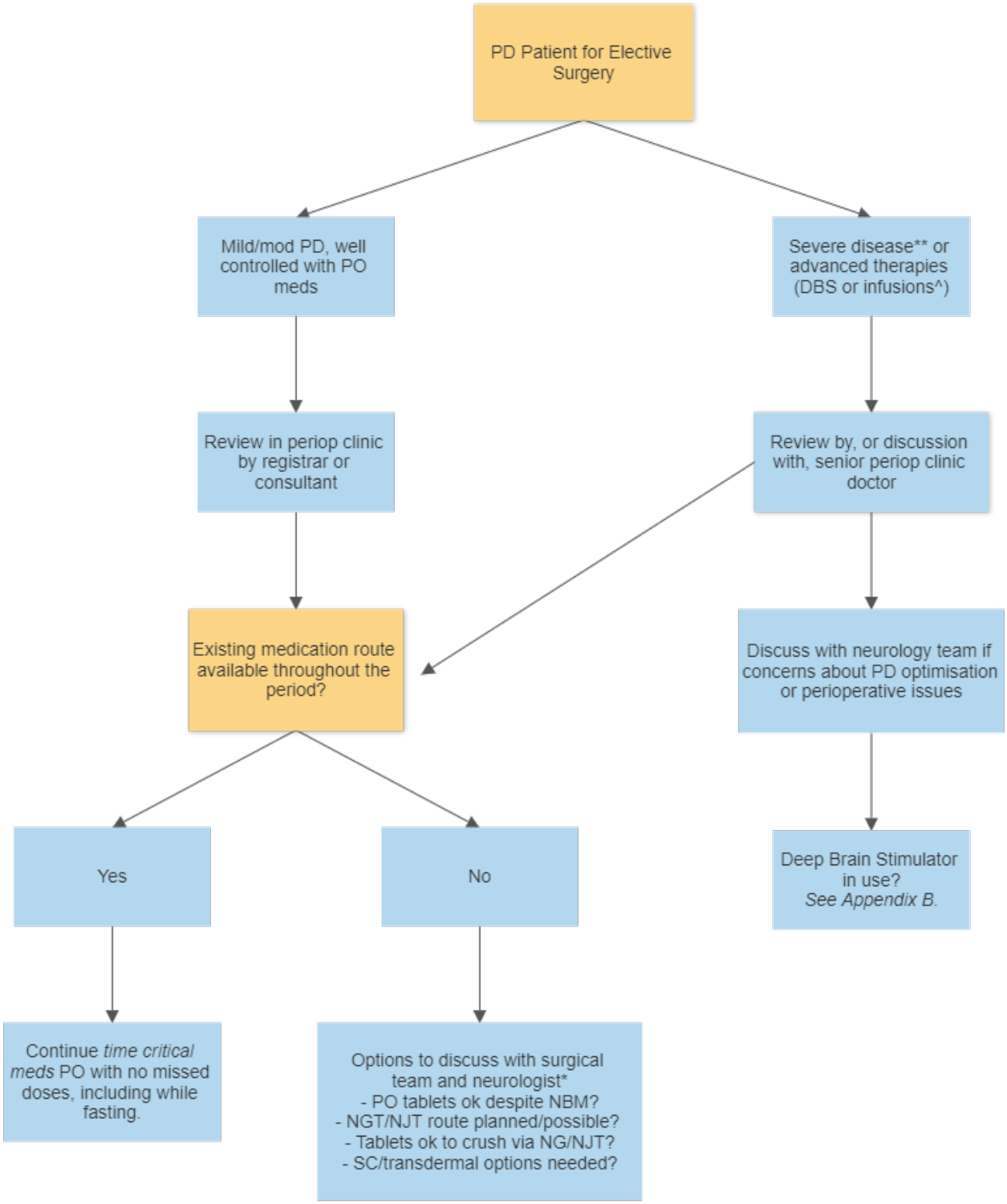
GLOSSARY

Acronym or Term	Definition
CNC	Clinical Nurse Consultant
CVS	Cardiovascular system
DBS	Deep brain stimulator
ECG	Electrocardiogram
GORD	Gastro-oesophageal reflux disease
MAO-B	Mono-amine oxidase-B
MRI	Magnetic resonance imaging
MRN	Medical record number
NBM	Nil by mouth
NGT	Nasogastric tube
NJT	Nasojejunal tube
OSA	Obstructive sleep apnoea
OT	Operating theatre
PD	Parkinson's Disease
PO	Per oral
TCI	To come in

GUIDELINE

This Guideline does not replace the need for the application of clinical judgment in respect to each individual patient. If you have concerns about the suitability of this advice for an individual patient, contact the PD CNC, Movement Disorders Team or the patient's neurologist.

Perioperative Clinic Doctor Roles:



* Nb. Alternative routes need to be arranged well in advance of hospital admission as the patient may require a drug challenge.
** Severe disease shown by need for substantial assistance with all ADLs, Hoehn and Yahr classes 4-5 (Appendix A)
^ Infusions via PEG/PEJ are small volume and able to continue while fasting.

Key Features of Perioperative Anaesthetic Review:

- *Document medication names, dosages, specific times (confirmed with two sources).*
- *Advanced therapies (e.g. infusion therapies), are usually able to be continued throughout the perioperative period. Document guidance for their used based on information provided by the patient. If concerns, contact the PD CNC.*
- See Deep Brain Stimulator guideline in Appendix B, if relevant.
- Document all discussions with neurologist, PD CNC or surgeon.
- Identify key features, and severity of, the patient's PD symptoms including GORD/dysphagia, upper airway dysfunction, respiratory impairment, fixed flexion neck deformity, OSA, CVS autonomic dysfunction, falls, movement features, malnutrition, and cognitive decline.
- Add a Warning Note for Severe Comorbidity
- Discuss risks with the patient including, where appropriate, delirium, aspiration, respiratory failure, exacerbation of PD symptoms, veno-thromboembolism, and increased length of stay.
- Patients taking MAO-B (eg rasagiline or safinamide) – Continue perioperatively. Highlight MAO-B inhibitor use on the anaesthetic chart as there are multiple anaesthetic implications https://www.ukcpa-periophandbook.co.uk/medicine-monographs/monoamine-oxidase-b-mao-b-inhibitors
- **Adverse drug reactions for *all* PD patients:**
  - Phenothiazines (e.g. prochlorperazine)
  - Benzamides (e.g. metoclopramide)
  - Butyrophenones (e.g. haloperidol, droperidol)

Additional patient information and support:

- Consider referring the patient to handouts from Parkinson's Australia
  - Parkinson's and Hospitalisation https://www.parkinsonsnsw.org.au/wp-content/uploads/2020/04/Parkinsons-Hospitalisation-Guidelines.pdf
  - Medication Safety https://www.parkinsonswa.org.au/wp-content/uploads/2017/03/Parkinsons-WA-Medications-to-be-Used-with-Caution-April-2017.pdf
- The patient may wish to contact the PD CNC Evelyn Collins on (02)49855442 Evelyn.Collins@health.nsw.gov.au

Nursing roles for *all* PD patients:

Notify PD CNC	List Management
• Email the PD CNC who will triage movement team involvement: Evelyn.Collins@health.nsw.gov.au • Specify: Patient name, MRN, surgery, surgeon, TCI date, name of neurologist, medications details and DBS make/model (if present)	• 1st on list where possible • Add a Perioperative Warning Note (Severe Comorbidity) • Add an iPMS alert

Consultation

This guideline has been developed in consultation with the John Hunter Hospital Parkinson's CNC Evelyn Collins and neurologists as part of the Movement Disorders Team.

IMPLEMENTATION, MONITORING COMPLIANCE AND AUDIT

The perioperative doctors and nurses, and the neurology team will be educated on this document at their Continuing Medical Education meetings.

APPENDICES

Appendix A – Hoehn and Yahr Scale

Appendix B – Perioperative Implications of DBS

REFERENCES

Management of medication for patients with Parkinson disease. NSW Ministry of Health Safety Alert Broadcast System. SN:002/20

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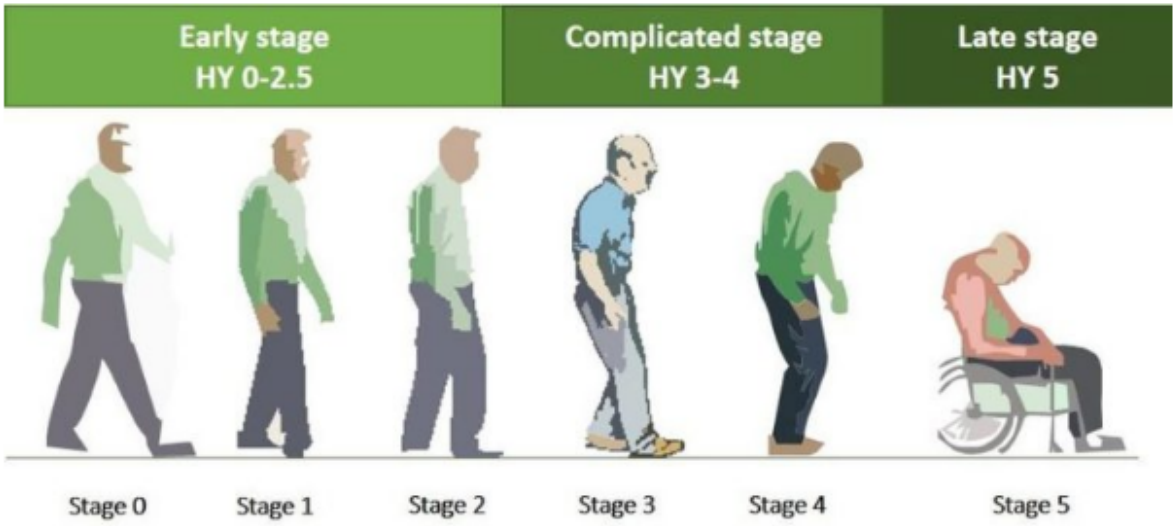
FEEDBACK

Any feedback on this document should be sent to the Contact Officer listed on the front page.

Appendix A – Hoehn and Yahr Scale



Source: Claesson, Ingrid. (2018). Better Balance with Somatosensory Exercises-a Parkinson Perspective.

Appendix B – Perioperative Implications of DBS

General considerations:

- *A plan for the DBS should be formulated and documented in the Perioperative Clinic, where possible.*
- Perioperative recommendations should be sought from the manufacturer (Medtronic, Boston Scientific etc), as this technology continues to evolve and recommendations may vary over time.

- **Switching the DBS off and on again:**

    - Discuss preoperatively with the patient's neurologist or the Parkinson's CNC to determine if alternative medication coverage will be needed while DBS is off, based on patient's symptoms and surgery length. Alternate medication usually needs to be initiated *before* switching off the DBS.
    - For patient comfort, the device is usually switched off after induction of anaesthesia and back on before emergence.
    - Device is switched off/on by the anaesthetist using the Patient Programmer, based on the patient's instructions, device booklet, or the web-based instruction manual.
    - The device does not need to be interrogated after switching back on, unless it becomes apparent that it is not functioning correctly.

- Identify by palpation the anatomic course of the entire device (usually subclavicular space with leads up the neck, posterior to ear and to the crown of the head). Occasionally the IPG (battery/stimulator) is in the abdomen and not in the chest.

- **If any concerns or questions, contact:**
    - Within hours: PD CNC (Evelyn Collins 4985 5442) or the device rep.
    - After hours: Device rep/helpline (preferred) or the Neurology AT.

Safety Considerations for patients with a DBS:

MRI
- Compatibility depends on the device type, scan duration and MRI machine type/capabilities.
- Consultation of the manufacturer's guidelines *must* occur.

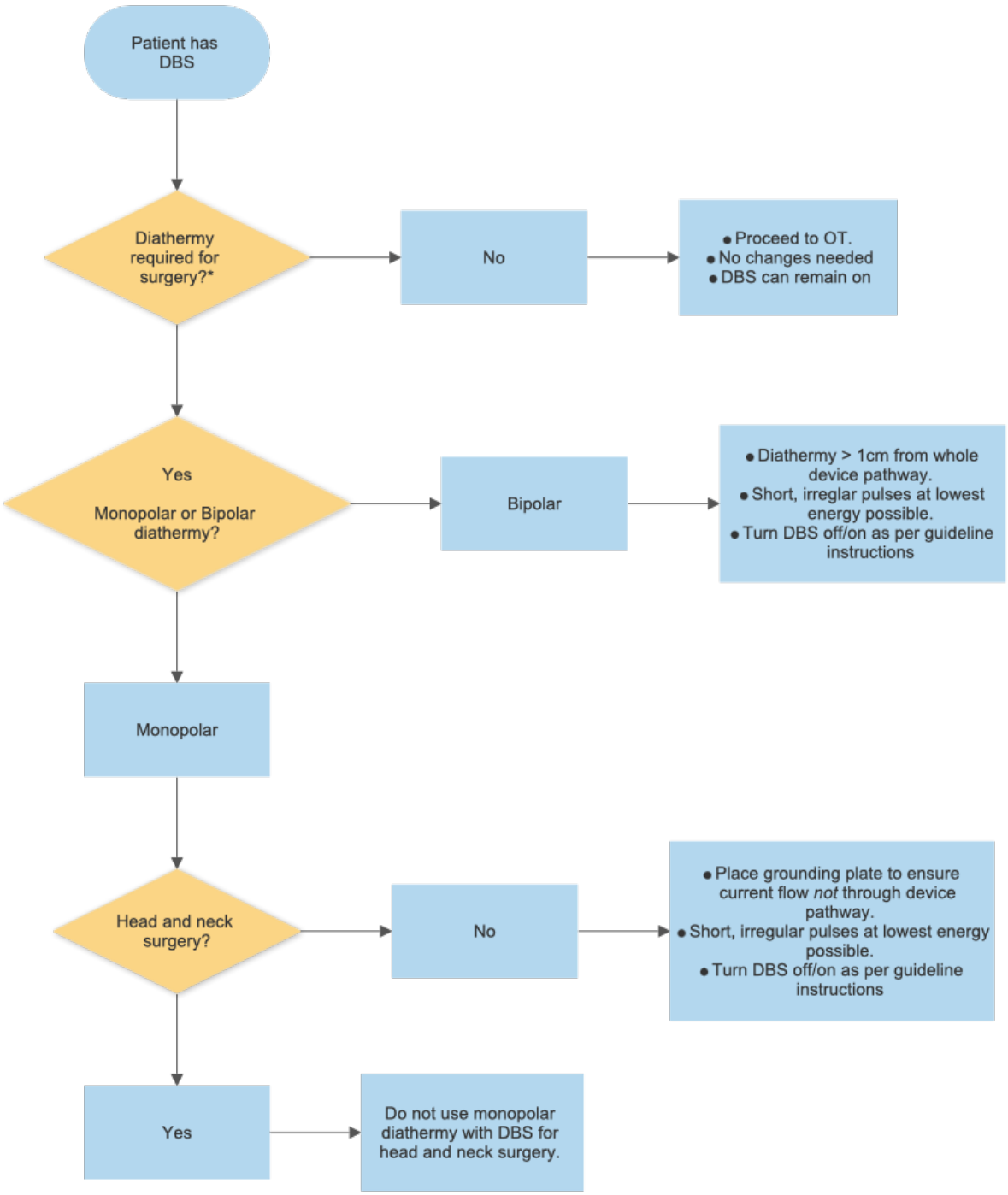
ECT, radiofrequency neuroablation and peripheral nerve stimulation
- May be used with the device off and the stimulation as far from the device as possible (based on case studies).

Short wave diathermy
- Used as a musculoskeletal therapy.
- Should *not* be used over/near the device site.

ECG
- DBS may cause interference.
- Note if the DBS is turned off in an un-anaesthetised patient, tremor may also cause interference.

Cardiac defibrillators
- Should be used far from the device, perpendicular to the leads, and at the lowest energy possible.
- The device should be interrogated afterwards.

- **Diathermy**



- *Risk of damage to surrounding neural tissue, and the device.

<u>Perioperative Nursing roles with DBS:</u>

- Add alert to iPMS including the brand and technical support line phone number
- Add a Perioperative Warning Note (Other)
- Email the make/model of DBS to the PD nurse, as per the nursing instructions for all PD patients.
- Include a photocopy of the patient's device card in Perioperative Clinic notes.
- Advise patient to bring labelled Patient Programmer with them to hospital and instruction booklet.
- If the DBS is a rechargeable unit ask the patient to bring the charger for their hospital stay.