The following diagnoses or symptoms are considered under Neurology:

- Carpal tunnel and other entrapment syndromes
- Headaches & Migraine
- Parkinsonism
- Progressive loss of Neurological function
- Movement Disorders
- Neurological symptoms in pregnancy
- Seizures
- Strokes & TIA
- Tremor

Key factors in the neurological history include:

- Neonatal History
- Drug History – including oral contraceptives
- Head injury
- Previous intracranial infections
- Alcohol
- Family history
- Occupation
- Pregnancy issues
- Psychiatric and psychosocial history

As per individual diagnosis.

As indicated below

The following conditions that are commonly referred to Neurology should be referred elsewhere in most cases:

<table>
<thead>
<tr>
<th>Diagnosis or Symptoms</th>
<th>Rationale:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep Disorders / Narcolepsy</td>
<td>Many of these conditions require a formal sleep study to make the diagnosis and should be referred to Sleep Medicine</td>
</tr>
<tr>
<td>Back Pain which has been fully investigated, with no surgical solution, and the patient is already taking medical therapy</td>
<td>A Pain Management clinic would be more appropriate to address the problem with a multi-disciplinary approach and consider other invasive therapies.</td>
</tr>
<tr>
<td>Elderly patients with complex medical problems</td>
<td>Referral to an Geriatric Medicine is more appropriate to address the multiple issues including how the patient is managing in home /hostel.</td>
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<tr>
<td>Diagnosis / Symptomatology</td>
<td>Evaluation</td>
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<td>----------------------------------------------------------------</td>
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<tr>
<td><strong>Carpal Tunnel and other Entrapment Syndromes</strong></td>
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<tr>
<td>Carpal Tunnel Syndrome</td>
<td>Typically intermittent tingling in hand or hands, predominantly nocturnal</td>
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<td></td>
<td>If symptom predominantly of pain with little or no tingling</td>
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<tr>
<td></td>
<td>Consider: Diabetes, Hypothyroidism if no other reasons for carpal tunnel syndrome developing</td>
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<tr>
<td>Other suspected isolated nerve entrapment syndromes</td>
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<tr>
<td>Suspected or definite papilloedema without other neurological symptoms/signs</td>
<td>Nil further by GP</td>
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<tr>
<td>Back and Neck Pain</td>
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</tbody>
</table>
## Headache

<table>
<thead>
<tr>
<th>Diagnosis / Symptomatology</th>
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<th>Referral Guidelines</th>
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<td><strong>Acute: Sudden onset / thunderclap or severe occurring after exercise</strong></td>
<td>Look for neck stiffness, signs of meningism.</td>
<td>Subarachnoid haemorrhage suspected.</td>
<td>Immediate referral to acute service – Urgent.</td>
</tr>
<tr>
<td><strong>Severe disabling headache</strong></td>
<td>May require urgent imaging</td>
<td>Pain relief/avoid sedatives or CNS depressing drugs.</td>
<td>Seek telephone advice or urgent neurological opinion.</td>
</tr>
<tr>
<td><strong>Chronic</strong></td>
<td><strong>Tension headache</strong>: dull non disabling, pressure or tightness type sensation without nausea, photophobia</td>
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<tr>
<td></td>
<td>Important to identify the two common causes of headache, ie: - Tension headache - Migraine</td>
<td><strong>Consider</strong> ergonomic, postural, stress related problems **Try low dose amitriptyline (explain the danger of chronicity) Avoid locking the patient into treatment of assumed neck problems and multiple consultations. If focal, then consider sinus disease, Temperomandibular joint dysfunction, dental disease, local eye problems, e.g. glaucoma.</td>
<td>Neither of which should require a neurologist referral unless there are problems with management or concerns about the presence of intracranial lesions – Routine. Refer to neurologist with any specific concerns – Routine. If symptoms do not resolve then refer to a neurologist – Routine.</td>
</tr>
<tr>
<td></td>
<td><strong>Migraine</strong>: Paroxysmal or intermittent headache with association of nausea, photophobia, phonophobia, and some disability. Duration of 4 – 72 hours</td>
<td><strong>Dietary advice, hormone manipulation if catamenial. Consider prophylaxis in selected case Acute treatment with analgesia / sumatriptan as appropriate</strong></td>
<td>Not for a typical presentation</td>
</tr>
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<tr>
<td>Movement disorders</td>
<td>Assessment of chorea, dystonia or other involuntary movements.</td>
<td></td>
<td>Refer to Neurologist – Routine</td>
</tr>
<tr>
<td>Neurological symptoms in pregnancy</td>
<td>Routine history and examination</td>
<td>Depends on Diagnosis</td>
<td>Patients should be dealt with promptly initially with telephone consultation and then suitable arrangements made – Urgent – Semi-urgent</td>
</tr>
<tr>
<td>Vertigo, unaccompanied by other neurological symptoms</td>
<td>ENT/neurological examination</td>
<td></td>
<td>Neurology/ ENT referral – Urgent</td>
</tr>
<tr>
<td>Visual disturbance</td>
<td>Hemianopia</td>
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<td>Neurology/ophthalmology referral – Urgent</td>
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<td></td>
<td>Visual failure</td>
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<td></td>
<td>Diplopia</td>
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<td></td>
<td>Amaurosis fugax</td>
<td>Treat as TIA</td>
<td></td>
</tr>
<tr>
<td>Parkinsonism</td>
<td>Drug history eg Phenothiazines</td>
<td>Consider disability support services when appropriate</td>
<td>Referral for consideration of causes and confirmation of the disease prior to commencing medication – Routine</td>
</tr>
</tbody>
</table>
### Progressive loss of Neurological function

- Cognitive disturbance
- Disturbance of swallowing and speech
- Spinal cord lesions
- Balance problems
- Muscle wasting and weakness
- Loss of sensation
- Neuropathy

Consider diabetes, alcohol, B12 deficiency, paraproteinaemia, syphilis, autoimmune disease in appropriate cases.

### Seizure

**Evaluation**

- Important to define the difference between syncope and seizure based on the history
  - Single seizure in child or adolescents: establish presence of family history, risk factors for epilepsy, triggers (eg flashing TV screens, photosensitivity), eyewitness account of seizure.
  - Focal features/finding or suspicion of underlying neurological disease
  - Ongoing seizures: Patients with chronic, poor or deteriorating seizure control

**Management Options**

- If syncope, elimination of potential triggers (most patients do not need referral)
  - Observation
  - EEG
  - Sodium Valproate may be commenced after the second seizure prior to referral for specialist assessment.
  - Check compliance, Optimise Dose
  - Blood levels if queries of compliance or toxicity (routine level monitoring is not appropriate)

**Referral Guidelines**

- Consider physician for elderly if in appropriate age group – Routine.
- All patients should be referred for specialist assessment after the first seizure – Routine.
- These patients need urgent referral for comprehensive investigation – Semi-urgent.
- Once a patient has been stabilised, ongoing care should be provided by the GP with access to specialist review on an “as required” basis.
### Stroke

**Note:** Stroke or TIs could be the result of either a haemorrhage or a thromboembolic stroke.

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<td>Acute loss of function with persisting deficit</td>
<td>Emergency assessment of admission important to establish whether the patient has had a haemorrhage or not.</td>
<td>Call an ambulance on 000</td>
<td>High index of suspicion for SAH needed. Any suggestion of thunder-clap headache or headache brought on acutely by exercise needs this diagnosis excluded by CT scan and or LP – Urgent.</td>
</tr>
</tbody>
</table>

**All patients with stroke require risk factor analysis.**

- Check:
  - Hypertension
  - Smoking history
  - Diabetes
  - Serum LIPIDS
  - ESR, FBC
  - Cardiac abnormality
  - Clotting abnormality (in younger subjects only)

- If lasting deficit or age < 45 years (younger subjects require extensive special and urgent investigations)
- If complete recovery

Admissions as per condition to acute facility or to a rehabilitation unit – Urgent.

Treat as TIA (see below)

### TIA

**Risk factor analysis**

- If atrial fibrillation or cardiac cause suspected.

Obtain: CT, EEG and carotid dopplers as soon as possible; and also “discuss with stroke unit medical staff”

Treat underlying condition and Aspirin so long as cardiac cause excluded.

Refer to appropriate speciality

Refer to an ultrasound facility private or public for an urgent scan of the carotid and or vertebral arteries.

For consideration of urgent anti-coagulation.

Refer to neurology service for admission – Urgent.

### Tremor

**Two main types:**

1. **Postural =** tremor which occurs during use of the limb usually the hands and is absent at rest. Common cause benign essential tremor, drug induced (eg, alcohol withdrawal, lithium) thyrotoxicosis, metabolic derangement.

2. **Rest Tremor =** with or without other features of Parkinson’s disease

**No Treatment or trial of Propranolol (or other beta blockers), primidone.**

Refer to Neurologist – Routine