

# NEUROPHYSIOLOGY TESTING SERVICES

## Diagnostic Support for Neurological and Neuromuscular Conditions

southern  
neurology

At Southern Neurology, we offer a comprehensive suite of clinical neurophysiology tests designed to assist in the diagnosis, assessment, and management of a broad range of neurological and neuromuscular disorders.

Our testing services are conducted by experienced neurophysiology technicians and clinical neurophysiologists.

### Available Tests

1. **Nerve Conduction Studies (NCS)** NCS evaluate the functional integrity of peripheral nerves by measuring conduction velocity, amplitude, and latency. They are indicated for conditions such as:

- Entrapment neuropathies (e.g., carpal tunnel syndrome, ulnar neuropathy, peroneal neuropathy)
- Generalised peripheral neuropathies (diabetic, inflammatory, hereditary)
- Radiculopathies and plexopathies
- Traumatic nerve injury

2. **Electromyography (EMG)** Needle EMG complements NCS by assessing muscle activity and identifying patterns suggestive of:

- Motor neuron diseases (e.g., ALS)
- Myopathies
- Neuromuscular junction disorders
- Plexopathies
- Radiculopathies
- Severity of generalised neuropathies
- It can also assist in determining the degree and severity of traumatic nerve lesions and help with prognostication.

3. **Electroencephalogram (EEG)** EEG captures cortical electrical activity and is primarily used in the evaluation of:

- Epileptic and non-epileptic seizure disorders
- Altered mental states and encephalopathies
- Sleep abnormalities
- Functional vs organic syndromes

Standard (routine) EEG, prolonged EEG and Ambulatory EEG monitoring are available.

4. **Evoked Potentials** We perform a range of evoked potential studies:

- **Visual Evoked Potentials (VEP)** – for assessment of optic nerve function (e.g., optic neuritis, MS)
- **Somatosensory Evoked Potentials (SSEPs)** – to evaluate central sensory pathways in the arms and legs
- **Brainstem Auditory Evoked Potentials (BAEPs)** – useful in assessing brainstem lesions or auditory nerve disorders



### Referral Considerations

Neurophysiology testing may be appropriate in patients presenting with:

- Focal neurological deficits
- Sensory disturbances or paraesthesia
- Muscle weakness, cramps, fasciculations or atrophy
- Suspected seizure activity
- Diagnostic uncertainty requiring objective physiological data

Our team works closely with referring GPs and specialists to ensure that the selected tests are appropriate and clinically relevant to the referral query.

### Reporting and Communication

- All studies are performed on-site and interpreted by our consultant neurologists.
- Comprehensive reports are provided within 2-4 business day turnaround. Urgent reporting can be arranged on request.
- Findings are clearly aligned with clinical questions to assist in diagnosis and management planning.

### Referral Process

Referrals can be sent via:

- **Secure messaging** via Healthlink: sthn3uro
- **Email:** admin@southern-neurology.com.au
- **Fax:** 02 9553 7090
- **Download our referral form here:**

<https://www.southern-neurology.com.au/for-referrers>

Please include relevant clinical information, provisional diagnosis, and any specific diagnostic questions to guide the testing process as there is not a one size fits all testing protocol.

### Contact

For referral forms, further information, or to discuss suitability of testing, please contact:

**Ph:** 02 8566 1500

**E:** admin@southern-neurology.com.au

**W:** <https://www.southern-neurology.com.au/>