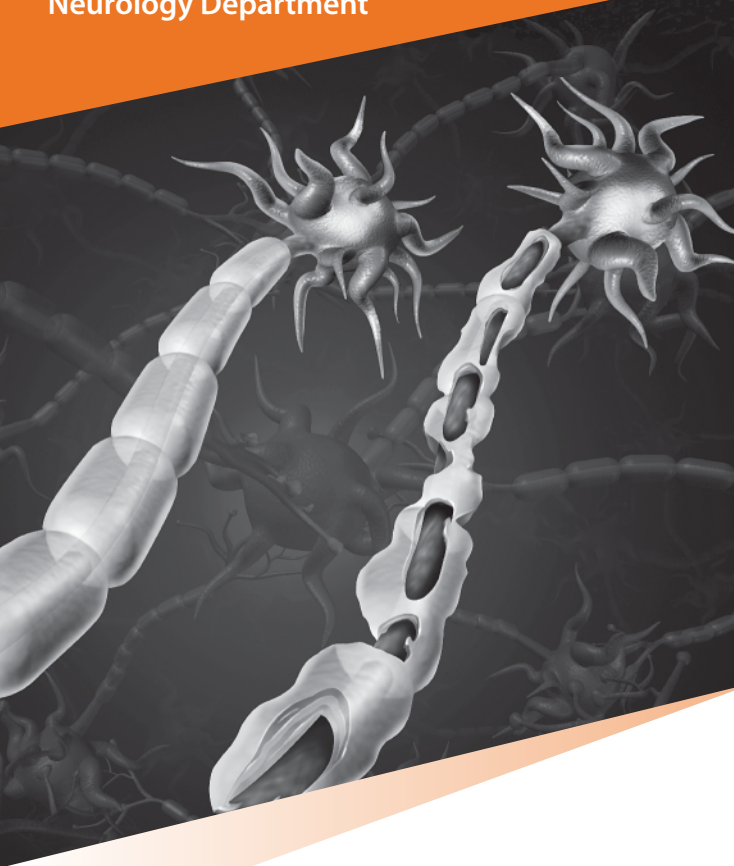


Neurology Department



Motor Neuron Diseases



National
Neuroscience Institute

SingHealth

Understanding Motor Neuron Diseases (MND)

Motor neuron diseases (MND) describe a group of conditions where the motor nerves are damaged. Muscles connected to the damaged nerves gradually lose their strength, and this results in the muscles wasting away.

There are different types of MND and the main ones include:

- Amyotrophic Lateral Sclerosis (ALS)
 - The most common type of MND, the hands and feet muscles are the first to become stiff and weak.
- Progressive Muscular Atrophy (PMA)
 - Similar to ALS but uncommon, the muscles on the hands weaken and become limp.
- Progressive Bulbar Palsy (PBP)
 - Muscles used for talking, chewing and swallowing (bulbar muscles), are the first to weaken.
- Primary Lateral Sclerosis (PLS)
 - A rare type of MND where there is progressive stiffness in the muscles, usually beginning in the leg muscles.

Signs of Motor Neuron Diseases

Depending on the type of MND, the signs differ:

- Weak hand grip e.g. difficulty opening bottle caps, turning keys, frequently dropping items
- Weak legs e.g. trip easily, feet dragging, difficulty climbing stairs
- Difficulty swallowing, speaking, singing

Diagnosing Motor Neuron Diseases

A thorough evaluation includes history-taking and neurological examination to assess motor skills and nerve function.

Tests include:

- **Electromyography (EMG)**
 - A thin probe attached to a machine will be inserted into the muscle to measure electrical activity.
- **Nerve Conduction Studies**
 - A probe is used to measure the electrical properties of nerve impulses, to detect abnormal nerve function (Image 1).



Image 1
Nerve Conduction Study

Living with Motor Neuron Diseases

Management of MND is overseen by a multidisciplinary team:

- Doctors and nurses assist in symptom management.
- Physiotherapists provide caregiver training, and help with mobility, pain relief and cardiovascular fitness.
- Prosthetists and orthotist prescribe and design support devices for the foot, neck and trunk.
- Occupational therapists prescribe home, work, vehicle modification and assistive equipment.
- Speech therapists provide tips for safe swallowing and communication.
- Dietitians plan meals to provide adequate nourishment and hydration.
- Medical social workers provide psychoemotional and social support, and avenues for funding.

Support for Motor Neuron Disease

NNI Motor Neuron Disease (MND)/Amyotrophic Lateral Sclerosis (ALS) Support Group

The NNI MND/ALS Support Group is a platform for peer-to-peer and inter-professional learning. In a support group led by healthcare professionals, volunteers and their family members gather to share their experiences, and provide support to one another. Each meeting includes an introductory talk, mass exercise and discussion around a relevant topic.

For details, contact **+65 6330 6363**.

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**National Neuroscience Institute (NNI)
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