Neuromuscular diseases (NMD) are a sub group of neurological diseases where the nerves that control movement are affected. They can be either acquired or genetic, with diagnosis often complex to establish particular strains of disease.

**NEUROMUSCULAR DISEASE**

Neuromuscular disabilities including multiple sclerosis, post-polio syndrome, and Parkinson’s disease.

Neuromuscular diseases can be broken down into six general types depending how they affect the body, these are:

- Muscular dystrophies (MD)
- Motor neuron conditions
- Metabolic muscle conditions
- Conditions of the peripheral nerve
- Conditions of the neuromuscular junction
- Neuromuscular myopathies

Most NMD’s are incurable, however exercise in neuromuscular diseases is known to improve:

- quality of life,
- reduce degradation rate of muscle,
- improve movement,
- improve symptoms or co morbidities of the disease,
- prolong independence
- reduce risk of falls and injury and can prevent or limit disability.

Exercise not only improves movement and muscle control but also physiology including improved cardiovascular and respiratory function, (often the last phase of the condition) leading to increased longevity.

Exercise improves mental wellbeing with social interaction and accomplishment.

**WHY IT’S IMPORTANT TO EXERCISE**

Exercise Right recommends resistance training modifications to improve motor function in persons with cerebral palsy, muscular dystrophy, spinal cord injury, and stroke.

**Resistance and aerobic training** improves physical fitness, strength and functional performance and capacity. Those with MS have shown to have increased walking mobility with combined resistance and aerobic training.

Regular **flexibility training** assists with reducing/preventing contractures in people with muscular dystrophy, spinal cord injury and stroke.
**THINGS TO REMEMBER**

- Avoid exercising alone or in abnormal conditions. With movement disorders the risk of falls is increased.
- Conditions affecting the peripheral nerves can reduce pain symptoms, where pushing an exercise program too hard can result in an injury without receiving the neural feedback i.e. pain.

- Allow 48 hours to recover from resistance training prior to the next session.
- Foot and hand straps may be needed on bicycle and arm ergo machines to allow for adequate movement and control.

**RIGHT PROFESSIONAL**

**Accredited Exercise Physiologist (AEP)**

As an exercise specialist, an Accredited Exercise Physiologist (AEP) can assess and prescribe the appropriate exercise plan for your condition and symptoms. Given the complexity and stages of degeneration, an individualised program that meets your current needs, goals and symptoms is required.

An AEP will monitor the risk versus benefits of exercise including fatigue levels and movement/technique. This expert advice and monitoring can result in greater independence, improved energy levels and functional capacity and reduced risk of falls and injury.

An AEP can assist you to high levels of fitness and function despite conditions. The goal is still attainable, only the timeframe has changed.

**RIGHT PLACE**

**Climate controlled environment, such as a gym or rehabilitation centre**

For some NMD’s such as Multiple Sclerosis it is important you exercise in a cooler environment as exercise in heat can exacerbate conditions. With decreased thermoregulation your body’s ability to adapt to climate is reduced leading to an increased risk of heat stress.

Exercise may need to be completed in a rehabilitation gym to allow for modified and safe equipment and the required hand and foot straps for you to be able to complete all exercises comfortably and safely.

**RIGHT TIME**

**Right time is medication dependent**

Exercise Right recommends timing sessions so that medications can be in full effect (e.g. in PD you may experience an increase in symptoms just before the next medication dose is due). Work in conjunction with you doctor or specialist to find out about timings of medication dose and full effect.

**TYPES OF EXERCISES RECOMMENDED**

If starting an exercise regime, Exercise Right recommends starting slowly. NMD’s may be aggravated by fatigue so even a 2 minute seated exercise session is of greater benefit than exercising to fatigue.

Start with a **low intensity exercise** first. The intensity can always increase if things are too easy, but if exercise is begun with too much too soon, people with NMD’s may experience multiple bad days in a row.

Always incorporate **resistance training** combined with **flexibility training**. The resistance training should target all the major muscle groups with low weight and high repetitions to begin with. Weight intensity should gradually be increased as fatigue and muscular endurance allows.

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