

# ALS, MS & MD - How do they differ?

## Amyotrophic Lateral Sclerosis (ALS)

ALS is a form of Motor Neuron Disease. It involves the loss of the actual motor nerve cells. The nerves affected are in the spinal cord and those that travel to the voluntary muscles, so there are symptoms of both central and peripheral involvement, with weakness and wasting in arms, legs and mouth/throat (bulbar). The loss of nerve cells results in secondary atrophy - or wasting (amyotrophy) – of the muscles served by those cells. The hardening in ALS involves the lateral columns of the spine as a secondary phenomenon, providing the ‘lateral sclerosis’ part of the name. Although people with ALS usually have initial symptoms on one side of their body more than the other, both sides are involved and the effects usually become more symmetrical as the disorder progresses. Sensation is not affected. An estimated 3,000 Canadians live with ALS. Two to three Canadians die each day of ALS. Only 10 per cent of all cases of ALS are genetic. Treatments for ALS are developing and while the cause of ALS is unknown, research provides hope for a cure.

## Muscular Dystrophy (MD)

Muscular Dystrophy (MD) is the name of a group of about 40 different muscle disorders that are characterized by progressive weakness and wasting of the voluntary muscles that control body movement. As muscle tissue weakens and wastes away, it is replaced by fatty and connective tissue. MD are not diseases of the central or peripheral nervous system, but exclusively of the muscle. Two-thirds of MD strikes children, although dystrophies such as Ophthalmoplegic and late onset strike in adulthood. MD is inherited or caused through genetic mutation. Although there is no cure for muscular dystrophy as of yet, physiotherapy and occupational therapy can help people with muscular dystrophy achieve their maximum level of independence in daily living routines. In some cases, certain surgical procedures can

also improve the quality of life for many individuals with Muscular Dystrophy.

## Multiple Sclerosis (MS)

Multiple Sclerosis (MS) is an unpredictable – at times disabling – disease of the central nervous system: the brain and spinal cord. The disease attacks the protective myelin covering of the central nervous system, causing inflammation and often destroying the myelin in patches. The severity of MS, progression and specific symptoms cannot be predicted at the time of diagnosis. While symptoms may be similar to those of ALS – weakness and wasting of the arms and legs – sensation is often affected in MS because of demyelination in parts of the nervous system where sensation is transmitted. The actual word ‘sclerosis’ comes from a Greek word meaning ‘scar’. Scarring in MS distorts or blocks nerve signals. An estimated 50,000 Canadians have Multiple Sclerosis. Canada is a high risk area for MS, which occurs more often in countries which are further from the equator. MS is not a fatal disease – the vast majority of people can be expected to live a normal or near-normal lifespan thanks to improvements in the treatment of symptoms and in other therapies. The cause of MS is unknown but researchers are closer to finding the answer.

## How to explain the differences

- ALS is a rapidly progressive and fatal neurodegenerative disease.
- MS is a scarring and hardening of the sheath around the nerves in the brain, spinal cord and optic nerve.
- MD is a muscular disorder with specific kinds of MD involving different muscles in the body

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