MND Fast Facts

What is Motor Neuron Disease (MND)?

Motor Neuron Disease (also known as Lou Gehrig’s disease) is the name given to a group of related brain disorders that affect the motor neurons in the brain and spinal cord, leading to weakness and muscle wasting. The three main forms are: amyotrophic lateral sclerosis (ALS or muscle wasting), progressive muscular atrophy (PMA), and progressive bulbar palsy (PBP – progressive weakness of speech and swallowing). MND is ultimately fatal. On average, one Australian dies every day from MND.

What causes MND?

It’s unknown what causes MND. However, about 5–10% of cases seem to involve a family history, indicating that an inherited genetic factor may be involved (familial MND). Researchers have also suggested that the risk of developing sporadic MND (no family history of MND) may be linked to a variety of as yet undetermined genetic and environmental risk factors.

How is MND diagnosed?

MND is difficult to diagnose and there is no specific test. Diagnosis is made after eliminating other diseases that may mimic MND through magnetic resonance imaging (MRI), nerve conduction, muscle and blood tests.

How is research helping?

Currently there are studies being undertaken to:

• Understand the disease process and neuron function
• Identify genetic and environmental risk factors
• Develop early detection procedures
• Develop better treatment practices i.e. drug therapy, etc.
• Identify cellular mechanisms that may cause motor neuron degeneration.
From Ross Maclean

(Written in late 2004 – prior to Mr Maclean’s passing in February 2005.)

About five years ago, I contracted a very unpleasant disease known as Motor Neuron Disease (MND). Many doctors believe it is one of the worst ailments that can be contracted. Over a period of time, from three months and upwards, the muscles slowly contract and then die, although the mind is unaffected. This results in an immobile body. The disease is terminal.

The University of Queensland has established the Queensland Brain Institute, where highly qualified researchers are working to find cures for MND and allied illnesses. Professor Perry Bartlett, Dr Robyn Wallace and Dr Elizabeth Coulson are conducting research in the area. And while progress is being made, there is yet no answer to the question of how and why this disease strikes. The disease is terminal.

The condition is genetic, i.e. the patient inherits an altered form of a gene, which ultimately leads to the disease. Significantly, there is currently no therapy to reverse the effects of the disease or to prevent its progression.

1. The nervous system is capable of generating new nerve cells, including motor neurons. QBI is working to identify ways of stimulating these processes that boost or replace the number of new nerve cells (neural stem cells) in the brain.

2. QBI neuroscientists have identified substances that can specifically block cell death, and future studies will investigate their effectiveness in blocking the death of motor neurons in animal models.

Together, these two approaches could provide therapy that can both prevent further nerve cell loss and potentially regenerate the nerve cells already lost at the time of diagnosis.

Shortly before losing his own personal battle with MND, Mr Ross Maclean instigated a Fellowship to establish a postdoctoral research position at the Queensland Brain Institute which would accelerate research and discovery into MND. Named in honour of its founder, The Ross Maclean Fellowship has significantly enhanced fundamental research into MND, however ongoing financial support is needed to ensure this vital initiative can continue.

Professor Perry F. Bartlett, FAA
Director, Queensland Brain Institute

Maclean Family establishes QBI Fellowship to fight Motor Neuron Disease

Although Ross Maclean knew there was little chance he would benefit from new research into MND, that didn’t stop the Index Group founder from concentrated efforts during his final years to establish a fund to fight this most debilitating disease.

Before he passed away in 2005, Mr Maclean was instrumental in establishing a Fellowship to study Motor Neuron Disease at the Queensland Brain Institute. Mr Maclean’s company, the Index Group – one of Queensland’s top 400 privately owned companies and today headed by his son Jeff Maclean – is committed to continue supporting the Ross Maclean Fellowship for MND Research.

To his enduring credit, Mr Maclean conceived the idea to create a MND Fellowship after meeting with QBI’s inaugural Director, Professor Perry F. Bartlett.

Professor Bartlett is an internationally renowned neuroscientist who has set about to continue his groundbreaking research into the fundamental mechanisms that underpin brain function.

This unique Fellowship is one of the few research positions in Australia dedicated to fundamental research of the underlying neurological factors behind Motor Neuron Disease.

You can help ensure the continuation of focused research into MND by donating to the Queensland Brain Institute, at The University of Queensland.