

## Neurological Conditions Factsheet

Here is a list of some of the more **common neurological conditions** that the member organisations of the **Neurological Alliance of Scotland** represent. There is a brief explanation about each condition with a website link where further information can be found.

**Neurological conditions** are caused by **damage to the nervous system**, often as a result of **illness** or **injury**. Problems of the nervous system usually affect the **brain** and **spinal cord** and the **nerves** and **muscles** in the body.

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### Acquired Brain Injury

An Acquired Brain Injury (ABI) is an injury caused to the brain since birth. There are many possible causes, including a fall, a road accident, tumour and stroke. The effects of a brain injury can be wide ranging, and depend on a number of factors such as the type, location and severity of injury. Every person's injury is unique, so they may experience any number of symptoms, which can range from mild to severe. People may experience physical effects such as headaches or epilepsy as well as numerous 'hidden disabilities' which are cognitive, emotional and behavioural and which result in changes to personality, thinking and memory.

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### Ataxia

Ataxia is the name given to a group of neurological disorders that affect balance, coordination, and speech. There are many different types of ataxia that can affect people in different ways. Anyone of any age can get ataxia, but certain types are more common in certain age groups. Some forms of ataxia are treatable, but in most cases there is still no cure. Ataxia is a symptom and may occur as a result of many different underlying conditions (such as Multiple Sclerosis), and may also occur due to head trauma or intoxication. Ataxia not due to any of these factors may be inherited (caused by a gene which is passed down through families) or non-inherited (sporadic).

<http://www.ataxia.org.uk>

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## **Brain Tumour**

A brain tumour is a growth caused by the brain cells dividing in an abnormal and uncontrolled manner. Primary brain tumours develop in the brain cells, without having spread from another cancer in the body (metastasis) which is what defines a secondary brain tumour. There is no explanation why they occur, making it impossible to predict who will develop a brain tumour.

Most primary brain tumours develop from cells that support the nerve cells of the brain. Symptoms depend on how big the tumour is and where it is in the brain and may be different for each person. Almost half of all brain tumours are non-cancerous and, if located favourably, can be removed by surgery. Many brain tumours that are found and treated early, cause little or no permanent damage to mental or physical abilities. Many others can be treated with surgery, radiotherapy and other therapies, resulting in prolonged life and a considerable amount of enjoyable time.

<http://www.braintumouruk.org.uk>

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## **Dementia**

Dementia is the progressive loss of the powers of the brain. There are many kinds of dementia but the most common is Alzheimer's disease. Other kinds of dementia include vascular dementia, Lewy body dementia, Parkinson's dementia, frontotemporal dementias (including Pick's disease) and alcohol-related dementias. What all these diseases have in common is that they damage and kill brain cells, so that the brain cannot work as well as it should. One of the most common symptoms of dementia is memory loss but it also causes confusion and personality and behaviour changes. Gradually, over a period of years, most functions of the brain will be affected.

<http://www.alzscot.org>

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## **Dystonia**

Dystonia is the term used to describe uncontrollable and sometimes painful muscle spasms caused by incorrect signals from the brain. This forces the body into twisting, repetitive movements or abnormal postures. In the vast majority of cases, Dystonia does not impact intelligence or shorten a person's life span.

There are different types of dystonia. Focal Dystonias are limited to specific parts of the body and there are Dystonias which affect multiple areas of the body. The cause of dystonia is not fully understood and it affects men, women and children of all ages. There appears to be a problem with the region of the brain called the basal ganglia. In most cases where dystonia appears in adults and some cases where it appears in children, there is no clear explanation for why this problem arises. However, in a minority of cases, the dystonia does have a clear cause such as

another medical condition, genetic inheritance or is caused by a reaction to certain medication. There is no cure for dystonia but most Dystonias can be successfully managed.

<http://www.dystonia.org.uk>

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## **Epilepsy**

Epilepsy is defined as repeated seizures, starting in the brain. A brief disturbance in the brain's normal electrical activity causes the nerve cells to fire off random signals. The result is like an electrical storm, causing a temporary overload in the brain.

There are many different kinds of seizure. Some end in seconds while others may last several minutes. People might lose their awareness of what is happening or where they are during a seizure. They may lose consciousness altogether.

Each person's experience of epilepsy is unique. Epilepsy is the most common, serious neurological disorder in the world. It is not contagious, nor is it a disease. Between seizures the brain works normally. Although seizures can appear dramatic and frightening to an observer, it is important to realise that the person affected normally feels no pain during a seizure and may have no memory of it afterwards. Most seizures are not harmful to the brain and the person affected recovers quickly.

<http://www.epilepsyscotland.org.uk>

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## **Functional and Dissociative Neurological Symptoms**

Some people experience functional and dissociative neurological symptoms including functional weakness and dissociative (non-epileptic) attacks. These are neurological symptoms that are genuine (and not imagined) but not due to a neurological disease. Instead they are due to a problem in the way the nervous system is working. Most people with functional or dissociative neurological symptoms have a combination of symptoms such as weakness, numbness and fatigue or blackouts and sleep problems which can be very debilitating.

There is much that is still not known about what goes wrong in the nervous system to cause functional symptoms and as people with functional symptoms do not have actual damage to their nervous systems, there is nothing visible on a scan or under a microscope. Instead the nervous system is not functioning properly, causing a range of symptoms and making it difficult for a neurologist to know how to provide treatment.

<http://www.neurosymptoms.org>

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## **Meningitis**

Meningitis and septicaemia are deadly diseases that can kill in hours. Meningitis is the inflammation of the lining around the brain and spinal cord. Septicaemia is the blood poisoning form of the disease. Meningitis and septicaemia can cause symptoms such as a severe headache, vomiting, high fever, stiff neck and sensitivity to light. Many people (but not all) also develop a distinctive skin rash.

Most people who get meningitis and septicaemia survive, often without any after effects, but sometimes these diseases cause a range of disabilities and problems that can alter people's lives. After effects may be temporary or permanent, physical or emotional and can include cognitive difficulties, epilepsy and coordination problems.

<http://www.meningitis.org>

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## **Motor Neurone Disease**

Motor Neurone Disease (MND) is the name given to a related group of diseases which destroy the motor nerves (neurones) in the body. Symptoms vary, but among them, MND can cause paralysis, impair speech, and cause eating and drinking difficulties. As MND progresses, the motor neurones of the body are gradually damaged. This blocks the stimulating signals from the brain reaching the muscles, causing them to weaken.

There are four main kinds of Motor Neurone Disease. Less than 10% of cases are thought to be inherited, so called 'familial MND'. The vast majority of cases, in the region of 90%, occur to people whose families have no previous history of the condition and are therefore described as 'sporadic'.

If lower motor neurone damage occurs the reflexes of the affected muscles are slowly destroyed, so the muscle becomes flaccid and paralysed. If the upper motor neurones are damaged eventually the muscles becomes spastic and paralysed. As MND progresses symptoms can combine. Unfortunately there is currently no cure for MND.

<http://www.mndscotland.org.uk>

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## **Multiple Sclerosis**

Multiple sclerosis (MS) is a neurological condition which affects around 100,000 people in the UK. Almost twice as many women have MS as men and it affects everyone differently. No one knows the exact cause of MS, but it is likely that a mixture of genetic and environmental factors play a role.

There are different types of MS with a range of symptoms. Physical symptoms of MS might commonly include vision problems, balance problems and dizziness, fatigue, bladder problems and stiffness and/or spasms. It can also affect memory and thinking, and have an impact on emotions. There's no cure for MS, but there are different ways to manage it which might include drug treatments for individual symptoms or relapses, diet, exercise and complementary and alternative therapies.

<http://www.mssociety.org.uk>

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## **Muscular Dystrophy**

Muscular dystrophy and related muscle diseases cause muscles to waste and weaken. These conditions affect either the muscles, such as those in the arms and legs or heart and lungs, or the nerves which control the muscles. Different conditions affect different muscles.

Most conditions are progressive, causing the muscles to gradually weaken over time affecting mobility and usually leading to some sort of disability. The severity of conditions and how they affect individuals varies greatly from person to person. Muscle disease affects babies, children and adults, both males and females and all ethnic groups. Conditions are often inherited but can also occur out of the blue where there is no family history.

<http://www.muscular-dystrophy.org>

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## **Myalgic Encephalomyelitis (ME)**

Myalgic Encephalopathy (ME), Chronic Fatigue Syndrome (CFS), Post-Viral Fatigue Syndrome or "PVFS", Chronic Fatigue Immune Dysfunction Syndrome or "CFIDS" are all names for an illness of unknown cause. All types of people at all ages are affected. Severe and debilitating fatigue, painful muscles and joints, disordered sleep, gastric disturbances, poor memory and concentration are commonplace. In many cases, onset is linked to a viral infection. Other triggers may include an operation or an accident, although some people experience a slow, insidious onset.

A small number of people with ME/CFS will manage to return to completely normal health, even though this may take a considerable period of time. The majority however, tend to follow a fluctuating pattern with both good and bad periods of health. There are some who remain severely affected and may require a great deal of practical and social support.

<http://www.meassociation.org.uk>

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## **Parkinson's disease**

Parkinson's is a progressive neurological condition where those affected don't have enough of a chemical called dopamine because some nerve cells in their brain have died. The main symptoms of Parkinson's are tremor, rigidity and slowness of movement.

As well as affecting movement, people with Parkinson's can find that other issues, such as tiredness, pain, depression and constipation, can have an impact on their day-to-day lives. The symptoms can be controlled using a combination of drugs, therapies and occasionally surgery but as Parkinson's progresses, an increased amount of care and support may be required. There is no currently no cure and it is not yet known why some people get the condition.

<http://www.parkinsons.org.uk>

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## **Progressive Supranuclear Palsy (PSP)**

Progressive Supranuclear Palsy (PSP) is a degenerative brain disease which affects eye movement, balance, mobility, speech and swallowing. It involves the progressive death of neurons (nerve endings) in the brain and over time can rob a person of the ability to walk, talk, feed themselves or communicate effectively with the world around them.

PSP is a difficult disease to diagnose, particularly in its early stages, when it often mimics Parkinson's disease and its exact cause is unknown. There is however known to be a complex genetic component involved and the disease itself appears to be triggered environmentally and selectively, perhaps by any one of a variety of neurotoxins, or injury to the head.

The average life expectancy of a patient is some seven years, but it is a very individual disease and the rate of progression of symptoms varies considerably from person to person.

<http://www.pspeur.org>

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## **Huntington's disease**

Huntington's disease (HD) is a hereditary illness passed through families where a child who has a parent with the illness has a fifty percent chance of inheriting the gene that causes the disease. It is a progressive neurological condition which affects the brain and central nervous system. In HD, specific brain cells stop working properly and then die which causes three types of symptoms affecting how muscles work, how the person processes thoughts and information and affecting mental health. There are some other symptoms which include weight loss, problems with

sleep and difficulty regulating body temperature which also relate to changes in the person's brain and are more common as the illness progresses.

There is presently no cure for HD which is a long-term illness and usually brings about very gradual changes over a period of fifteen to twenty five years. There is however a great deal that can be done to improve and manage symptoms ensuring that families living with the illness get the support they need.

<http://www.hdscotland.org>

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## **Spina Bifida and Hydrocephalus**

Spina Bifida is a fault in the spinal column in which one or more vertebrae (the bones which form the backbone) fail to form properly, leaving a gap or split, causing damage to the nervous system. There are two types of Spina Bifida always present at birth – Spina Bifida Cystica where there is a visible sac or cyst on the back which contains either tissue and cerebro-spinal fluid but also nerves and part of the spinal cord and Spina Bifida Occulta which is a hidden form. The most serious and common type of Spina Bifida Cystica is called Myelomeningocele and causes some paralysis and loss of sensation. The cause of Spina Bifida is unknown but folic acid supplementation during pregnancy is known to reduce risk.

Hydrocephalus is caused when fluid accumulates in the ventricles inside the brain, causing them to swell and resulting in compression of the surrounding tissue. Most babies born with Spina Bifida also have Hydrocephalus. In addition to the lesion in the spinal cord, there are abnormalities in the structure of certain parts of the brain that develop before birth. This prevents proper drainage of the CSF. The increase in pressure due to this can also compress the abnormal parts of the brain even further. Hydrocephalus usually requires surgical treatment where a shunting device is inserted to drain excess CSF.

<http://www.ssba.org.uk>

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## **Spinal Injury**

A spinal cord injury refers to any injury to the spinal cord that is caused by trauma instead of disease. Depending on where the spinal cord and nerve roots are damaged, the symptoms can vary widely, from pain to paralysis to incontinence. Spinal cord injuries are described at various levels of "incomplete", which can vary from having no effect on the patient to a "complete" injury which means a total loss of function.

Treatment of spinal cord injuries starts with restraining the spine and controlling inflammation to prevent further damage. In many cases, spinal cord injuries require substantial physical therapy and rehabilitation. Spinal cord injuries have many causes, but are typically associated with major trauma from motor vehicle accidents, falls, sports injuries, and violence. Research into treatments for spinal cord injuries

includes controlled hypothermia and stem cells, though many treatments have not been studied thoroughly and very little new research has been implemented in standard care.

<http://www.sisonline.org>

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## **Stroke**

A stroke happens when the blood supply to part of the brain is cut off and brain cells are damaged or die. Strokes are sudden and have an immediate effect. A person may become numb, weak or paralysed on one side of the body. They may slur their speech and find it difficult to find words or understand speech. Some people lose their sight or have blurred vision, and others become confused or unsteady.

Strokes affect people in different ways, depending on the part of the brain that is affected, how widespread the damage is and how healthy the person was before the stroke. But strokes can damage, bodily functions, thought processes, ability to learn, and feelings and communication. About a third of people who have a stroke make a significant recovery within a month. But most stroke survivors will have long-term problems. It may take a year or longer for them to make the best possible recovery. In the most severe cases, strokes can be fatal or cause long-term disability.

<http://www.stroke.org.uk>

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## **Tourette Syndrome**

Tourette Syndrome (TS) is a complex neurological condition. It is more than just 'tics', i.e. involuntary movements and sounds, for the majority of sufferers and is commonly associated with conditions such as Obsessive Compulsive Behaviour/Disorder, ADHD (Attention Deficit Hyperactivity Disorder), Motor-skills/co-ordination difficulties and more.

People with TS can sometimes have no control over making noises like grunting, coughing or barking, twitching their face, eyes, nose or mouth, nodding or jerking their head, neck or limbs, having bad temper outbursts and saying things that sound rude or unpleasant (though this only affects a small percentage of sufferers). In most people TS is a genetic, i.e. inherited, condition. However, there is not a single gene that causes the condition. At least 3 possible gene sites have been identified. The symptoms of TS can be treated but the condition cannot be cured.

<http://www.tourettescotland.org>

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## **Transverse Myelitis**

Transverse Myelitis (TM) is a rare neurological disorder which involves inflammatory attacks in the central nervous system. There is tremendous variability in the

presentation of symptoms, which are based on the level of the spinal cord affected and on the severity of the damage to the myelin and the neurons in the spinal cord. The symptoms of TM include muscle weakness, paralysis, parasthesias or uncomfortable nerve sensations, neuropathic pain, spasticity, fatigue, depression and bladder, bowel and sexual dysfunction. TM can be acute or slow developing. It may occur in isolation or with another illness. Approximately one third of patients with TM report a flu-like illness with fever, around the time of the onset of neurological symptoms. One third of those diagnosed with TM make a good recovery, one third have only a fair recovery with a moderate degree of permanent disability, and one third show no recovery.

<http://www.myelitis.org.uk/scotland>