This fact sheet provides information on spinal strokes. Our fact sheets are designed as general introductions to each subject and are intended to be concise. Sources of further support and more detailed information are listed in the Useful Contacts section. Each person is affected differently by spinal strokes and you should speak with your doctor or specialist for individual advice.

What is a spinal stroke?
A spinal stroke is a disruption in the blood supply to the spinal cord. The spinal cord depends on a supply of blood to function properly. A disruption in the blood supply causes tissue damage and can block messages (nerve impulses) travelling along the spinal cord.

The blood supply to the spinal cord involves a complex system of blood vessels. The main blood vessels are the anterior spinal artery (at the front of the spinal cord) and the posterior spinal artery (at the back). Spinal strokes are most common in the anterior spinal artery.

Most spinal strokes are caused by blockages (usually blood clots) in the blood supply. These are called ischaemic spinal strokes. Some spinal strokes are caused by bleeds. These are called haemorrhagic spinal strokes.

Spinal strokes are a rare condition. They are less common than strokes that affect the brain. They account for 1.25% of all strokes.

The Central Nervous System

The central nervous system is made up of the brain and spinal cord.

Messages (nerve impulses) from the brain travel along the spinal cord and control the activities of the body such as the movement of the arms and legs or the function of the organs (for example, the bowel and bladder).

The peripheral nervous system (the network of nerves outside the central nervous system) carries messages between the central nervous system and the rest of the body.

What are the symptoms of spinal stroke?
The symptoms of spinal stroke depend on what section of the spinal cord is affected. The severity of the symptoms depends on how much damage is done to the spinal cord.
The main symptoms of spinal stroke are muscle weakness in the legs, change in sensation (unusual feelings) in the lower half of the body, pain, and problems with the bowel and bladder.

The symptoms of spinal stroke usually appear suddenly. Sometimes a horizontal line or band can be drawn around the torso (the trunk of the body) or around the waist where the symptoms begin. This is the point at which the damage has occurred to the spinal cord.

Muscle weakness in the legs can progress to a complete loss of movement (paralysis) very quickly. People might experience muscle spasms (spasticity).

The unusual feelings people experience can include numbness, burning or tingling sensations, a heightened sensitivity to touch and temperature, and the inability to tell the temperature of water or objects.

Bowel and bladder problems might include incontinence (a loss of control over bowel movements or passing urine) or needing to go to the toilet with increased urgency.

**What causes spinal strokes?**
Most spinal strokes are caused by damaged arteries (the blood vessels through which blood flows from the heart to the rest of the body). Damage to the arteries carrying blood to the spinal cord can cause spinal strokes in the same way that damaged arteries in the heart can cause heart attacks.

Our arteries tend to harden, narrow and weaken as we get older but people with high blood pressure, smokers, people with high cholesterol, and people with heart disease or diabetes (or a family history of heart disease or diabetes) are at an increased risk.

Some spinal strokes are caused by a blood clot blocking one of the arteries supplying the spinal cord. Clots can form in these arteries or form in a blood vessel elsewhere in the body and travel to the spinal cord. Clots commonly form where arteries have narrowed due to a build-up of fatty deposits (cholesterol) on their inner walls. The narrowing or furring of the arteries is called atherosclerosis.

Some spinal strokes are caused by one of the blood vessels supplying the spinal cord bursting and causing a bleed. The most common cause is high blood pressure which damages and weakens the arteries making them more likely to tear. Some people have this type of spinal stroke because they have aneurysms (balloon-like swellings in the arteries) which burst.

Other less common causes of spinal strokes include abnormally tangled blood vessels called arteriovenous malformations (AVMs) or benign blood vessel tumours called haemangiomas. There is also an increased risk of spinal stroke after abdominal surgery.

**Tests and investigations**
At hospital, your medical history will be checked and you will have a physical examination as part of your assessment. The combination of weakness in the legs and unusual sensations is a sign of problems with the spinal cord whatever the cause. It is important to rule out any conditions which might be causing pressure on the spinal cord such as a slipped disc, an abscess, inflammation, or a tumour. People with any of these conditions will require specific treatment for them.

The key test for spinal stroke is an **MRI scan** (Magnetic Resonance Imaging scan). An MRI scan produces pictures of the spine using strong magnetic fields and radio waves. It differs from a standard X-ray as it produces very detailed pictures.

The results of the scan will be checked to rule out any conditions causing pressure on the spinal cord and to confirm that the blood supply has been disrupted by a blockage or a bleed.

(You might be interested in reading our fact sheet on brain and spine scans for further information.)
What are the treatments?
If your spinal stroke was caused by a blockage (ischaemic) you might be given medication to thin your blood and make it less sticky to reduce your risk of blood clots. If you have high blood pressure or high cholesterol you might be given medication to reduce and control your levels.

As each person is affected differently by spinal stroke, your treatment will depend on your individual symptoms. The outcome and extent of recovery also differs for individuals. It is likely that you will receive similar treatment and support to people who have damage to their spinal cords caused by injuries or other conditions.

Longer-term effects
The longer-term effects of spinal stroke include physical problems and paralysis, pain, bowel and bladder problems, sexual problems, and depression.

If you experience these longer-term effects, you might benefit from the specialist services of physiotherapists, occupational therapists, continence specialists, clinical psychologists or counsellors.

Useful contacts
Brain and Spine Helpline
0808 808 1000
www.brainandspine.org.uk

Run by neuroscience nurses, providing support and information on all aspects of neurological conditions for patients, their families and carers, and health professionals.

The Spinal Injuries Association
SIA House
2 Trueman Place
Oldbrook
Milton Keynes MK6 2HH
0800 980 0501
www.spinal.co.uk

Support and information on spinal cord injuries and paralysis.

The Brain and Spine Foundation provides support and information on all aspects of neurological conditions. Our publications are designed as guides for people affected by brain and spine conditions - patients, their families and carers. We aim to reduce uncertainty and anxiety by providing clear, concise, accurate and helpful information, and by answering the common questions that people ask. Any medical information is evidence-based and accounts for current best practice guidelines and standards of care.

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