

Patient Information

## Neurosurgery

# Spinal Tumours - Information for Patients and Carers

This booklet aims to provide general information on spinal tumours. We hope it will answer some of the questions you, your family, or carers may have.

The medical information in this booklet is evidence-based and draws on current best practice guidelines.

However, because the condition affects each person differently, it is important that you speak to your own Consultant or to the doctor or nurse who is looking after you, since they are in a position to offer advice and information to meet your own specific needs.

## What symptoms do spinal tumours cause?

No single symptom on its own is likely to be caused by a spinal tumour, but a combination of symptoms may. However, it is important to bear in mind that even a combination of symptoms may be due to other conditions that can be identified using a number of different tests. The more common symptoms are listed below:

- **Pain in or near the spine**
- **Night Pain**  
Neck ache or low backache is most likely to be due to wear and tear in the joints and discs, or indeed due to disc protrusion (slipped disc). Back pain that is not relieved by rest may be due to a tumour. Pain that radiates round the body from the back suggests nerves are affected. This sort of radiating pain can be due to a tumour, though it need not be.
- **Problems affecting one limb**  
There may be numbness, tingling or weakness and sometimes pain.



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However, pain spreading down a limb from the spine is a common symptom of disc protrusion (slipped disc) in the neck or the lower back. Disc protrusions are far more common than tumours.

- **Problems affecting both legs**

Worsening numbness, tingling or weakness of the legs is a serious matter that may indicate disturbance of the spinal cord or nerves inside the spine. Sometimes this is due to a tumour pressing on the spinal cord or the nerves. Any such symptoms should always be reported to a doctor. This applies particularly to people who have had cancer diagnosed, even in the past. Occasionally, similar complaints occur affecting all four limbs, from problems in the cervical spine (neck). Disturbances of feeling affecting only the feet are more commonly due to problems with the longest nerves (peripheral neuropathy).

- **Problems with control of the bladder or bowels or sexual function**

Before bladder problems start, there is usually at least some change in feeling or weakness affecting the legs. Problems with bladder control, with either leakage of urine or difficulty in emptying the bladder, can be due to pressure on the spinal cord or nerves. It is important to discuss any bladder or bowel control problems with your doctor, particularly if sexual function or feeling between the legs is affected.

## How is the diagnosis made?

A firm diagnosis can usually only be made after an MRI (magnetic resonance imaging) scan and possibly, a biopsy.

### **MRI (Magnetic Resonance Imaging) scan**

An MRI scanner does not use X-rays; instead pictures of the spine are produced by a strong magnetic field and radiowaves. Before you are scanned, you will be asked to complete a safety questionnaire because of the very strong magnetic field around the scanner. For example, if you have had a heart pacemaker fitted, you cannot be scanned. If you have any other metal in your body, such as a joint replacement or heart valve, you should check with the MRI department whether it is safe for you to be scanned.

The length of time of the examination will depend on how much of the spine is scanned. An average scan time would be around 30 minutes. MRI

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contrast (sometimes called dye) may be injected into a vein in the arm, to help show any area of abnormality. During the scan, you will be asked to lie on a couch, which is moved into a long tube. The scan is painless, but the scanner is very noisy – you will probably be offered earplugs or headphones to deaden the noise. Some people do find the MRI scanner rather claustrophobic. Trying to keep your breathing slow and steady will help you to stay relaxed.

### **What will these tests reveal?**

The scans will show whether there is any pressure on the spinal cord or nerves due to a tumour or any other sort of lump. CT scans may also be carried out to check for primary tumours elsewhere in the body, if biopsy samples prove inconclusive. The exact location of the abnormality will have been shown and a mark may be made on the overlying skin after completion of the scan. This is to help with planning treatment.

### **How are spinal tumours treated?**

There are four objectives in treatment:

1. Diagnosis
2. Freedom from neurological compression or compromise
3. Stable spine
4. Freedom from pain

Before treatment can start, a clear idea is needed of which kind of treatment would be best. There are three main choices:

- Surgical treatment
- Radiotherapy
- Chemotherapy

However, when it is not entirely clear what sort of tumour is present, a biopsy (taking a sample of tissue) may be necessary to decide on the best treatment. Although this can sometimes be done under local anaesthetic with a large needle, it may require a small operation.

### **Biopsy**

If done by needle, local anaesthetic may be all that is required, depending

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on the location and the size of the lesion. Either X-ray equipment is used for guidance of the needle, or a CT scanner may be used. It usually has to be done whilst lying face down. Some people find this procedure rather uncomfortable.

An open surgical biopsy is carried out under general anaesthetic and involves making a small cut, typically over the back of the spine. Removal of a small amount of bone is usually all that is necessary to obtain a suitable sample of the tumour. Biopsy results take a few working days before answers become available.

## Surgical removal

Surgical removal is used for benign tumours, for example those within the membranes surrounding the spinal cord and nerves and at least some malignant tumours, e.g. chordoma. Often benign tumours can be removed completely in this way, but not always. In some circumstances, it is safer to leave a small fragment behind than to risk serious damage trying to remove the tumour completely. Tumours inside the spinal cord are particularly difficult to treat and complete removal may not be possible.

Tumours of the bone, although separated from the nerves and spinal cord by the protective membranes, may be very difficult to remove. This is due to a combination of size, access to the whole of the tumour lump (which may extend round the spinal cord from the front to the back) and the need to preserve stability of the bony structure of the spine. However, even if complete removal of a spinal tumour is not possible, relief of pressure on the spinal cord and nerves may permit recovery of weakness or paralysis. In some cases, the spine will need to be strengthened by an implant, which may involve a rather bigger operation and a longer recovery period.

The basic process of opening the spinal canal to deal with a tumour is usually carried out from behind and is called a laminectomy.

## Radiotherapy

Radiotherapy is frequently used to treat malignant tumours and may be the main treatment of choice once the nature of the tumour is known. It may also be used after surgery to deal with any remaining disease. If a primary cancer has been diagnosed for the first time elsewhere in the body, during the tests and treatment of a secondary deposit, radiotherapy may also be

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used to treat the primary cancer.

Radiotherapy is planned by radiotherapists or oncologists (who specialise in treatment of all cancers).

Radiotherapy in the form of high energy X-rays is used to damage or destroy tumour cells. Radiation may delay tumour regrowth or cure the condition entirely. The exact method of giving the radiotherapy varies a great deal, depending on the type of tumour and the purpose of the treatment. For example, a single dose may be all that is necessary to relieve pain, whereas multiple treatments on a daily basis may be necessary to cure a tumour. Radiotherapy does not affect anyone other than the patient.

Common side effects of radiotherapy may include a temporary worsening of the symptoms of the tumour and inflammation of the skin, which is rather like sunburn. The effects on the skin gradually improve although it is best to avoid washing the affected area too vigorously and to stay out of direct sunlight until any reaction has disappeared. Other side effects may include bone fractures and changes in the bone marrow.

### **Chemotherapy**

Drugs can be given to destroy tumour cells. Chemotherapy is mostly used for cancers with secondary deposits in the spine from primary cancers that are known to be sensitive to chemotherapy.

### **Steroid treatment**

Steroids are often used when there is pressure on the spinal cord or nerves. They are usually given during a course of radiotherapy or at the time of surgery. They reduce swelling in the spinal cord and nerves and provide some degree of protection from compression. The most common steroid used is dexamethasone. Side effects can include an increased appetite and an improvement in mood, both of which affect people to different degrees. After several weeks of treatment, weight gain, acne, stretch marks, muscle weakness and even diabetes can develop. Since steroid tablets can irritate the lining of the stomach, they increase the likelihood of developing ulcers. This effect can be reduced by taking anti-ulcer drugs or antacids. Steroids are usually tapered off slowly if they have been taken for more than a couple of weeks. Side effects tend to reverse after withdrawal.

### **What other treatments are used?**

#### **Painkillers**

Painkillers may be necessary for back pain that can be severe at times. If morphine-based treatment is used, something to control the resulting constipation will be necessary and often something to control nausea will also be needed.

#### **Physiotherapy**

If there is any significant weakness in the limbs, physiotherapy can help to improve power, co-ordination and balance (e.g. with exercises). This will maximise the speed and extent of recovery, ensuring that independence is regained as soon as possible. Even when there is complete paralysis of a limb, moving the limb is important. This ensures that the joints do not become stiff.

Sometimes, special techniques can be used to compensate for a paralysis which allows a degree of movement to be produced and aspects of mobility and independence to be maintained, e.g. getting in and out of bed and using a wheelchair.

Paralysis, even if incomplete, may be associated with stiffness in the limbs. This is called spasticity. Legs may tend to jump in bed and may be difficult to move. Drugs can be given to reduce stiffness and spasm. These drugs, especially when used in conjunction with regular gentle stretching of the muscles involved, can improve mobility and comfort.

#### **Occupational therapy**

Where activities such as personal independence are affected, e.g. washing, dressing and feeding, an occupational therapist will be asked to assess and advise on the best way to overcome the problem. All that may be required is a small piece of equipment or adaptation to make the activity easy. Sometimes, alterations in the home or at work are required to ensure ease of access, e.g. hand rail, ramps etc.

#### **Bladder and bowel management**

If there are problems with bladder control, a urinary catheter may be required to prevent leakage. When the bladder malfunctions, there are often problems with bowel function as well and 'training' the bowel may be

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necessary to ensure regular motions.

### **Social services**

Social Services are an important part of the multidisciplinary team. They work very closely with other agencies and occupational therapists to ensure that the appropriate level of support is provided especially in the home. They also have access to information on a wide range of topics such as benefits and support groups in your area. They can be contacted either directly, by your family or through any member of the healthcare team.

### **Skin care**

Any numb areas will be susceptible to pressure sores as pressure will not be felt. If there is severe weakness, regular and frequent turning with attention to pressure areas is important to prevent sores forming. The skin must be kept clean and dry to maintain good condition. This sort of nursing care is quite demanding and may be difficult to undertake at home. However, there are specially designed cushions and beds available to help prevent pressure sores, which can make home care easier.

### **What is the outlook?**

This will depend very much on two factors. Firstly, the nature of the underlying condition and secondly, the presence of major paralysis. The degree to which treatment has been effective is important and is easier to assess in the case of benign tumours. In malignant tumours, where treatment is sometimes less effective, the long-term outlook depends on the type of cancer and the extent to which it has spread.

The spinal cord and nerves are slow to recover if severely compressed or badly damaged. The longer complete paralysis has been present, the less likely recovery becomes.

### **The underlying condition**

With a benign tumour, it is often possible to achieve complete removal. It may also be possible to completely remove malignant primary tumours. This gives a good chance of cure with a rather small risk of the tumour recurring. At the other end of the spectrum, a secondary deposit from a

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cancer elsewhere in the body will be difficult to cure. The long-term outlook will depend on the type of the original cancer, the degree of spread and the success in treating secondary deposits in the spine. The specialist team dealing with the primary cancer will often take on the follow-up and treatment of a spinal secondary tumour.

### **What happens when the initial treatment is over?**

If further hospital or nursing care is needed, suitable arrangements will need to be made. Any remaining symptoms are very important in determining what happens next.

### **Neurological Deficiencies**

These refer to disturbances of function and affect the parts of the body supplied by the spinal cord or nerves below the affected level in the spine. They may include disturbance of feeling, movement, coordination, or of control of pelvic functions. These include proper control of the bladder and the bowels and sexual function. Since the spinal cord and nerves, like the brain, recover slowly, major paralysis may also recover very gradually over several weeks or months, even if compression of the spinal cord or nerves has been completely relieved. The severity of the compression is also important. When it is very severe and particularly when it is also very prolonged, recovery is less likely. Whenever there is some function remaining, the outlook for useful improvement is better. Physiotherapy is important to improve movement if there is weakness or a lack of co-ordination.

### **Return to normal activities**

This is usually determined by two factors. The first is persisting disability such as incomplete control of bladder or bowel function, which can lead to accidents. The second factor is spinal instability, which is a weakness of the supporting structures of the spine, allowing abnormal movement to take place. This could further damage the spinal cord or nerves and may require an external brace or surgical implants, which are inserted during an operation. An external brace is useful where there is uncertainty about the effectiveness of an implant, for example when the bones have been weakened by disease so that they provide insufficient foundation for

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implanted metal supports.

Some specific activities are considered below:

### **Flying**

Flying should not be a problem except with persisting major neurological disturbances. Paralysis may make the practicalities of getting on and off an aeroplane difficult. Furthermore, moving from the seat, e.g. to the toilet, may also be extremely frustrating in the confined space of an aircraft. Incomplete control of the bowels may be a problem and if there is any difficulty with bladder control, a catheter may be necessary to prevent accidents.

### **Sexual intercourse**

This is safe, but pregnancy is best avoided during neurological recovery, as it can place considerable additional strain on the back and muscles.

### **Driving**

The usual regulations apply, in other words, proper control of the arms and legs in order to drive safely and the ability to move the neck/shoulders sufficiently in order to see around the car. Persisting major neurological disturbance in the lower limbs may require vehicle modifications, for example to hand controls. The use of an automatic car is safe, if there is isolated weakness of the left leg. If there is any disability or if in doubt, contact the DVLA (see Other Organisations that may be able to help).

### **Return to work**

This will depend on the type of work, the nature of the tumour and the presence of any persisting disability. It is best arranged on an individual basis after treatment has been completed. An occupational therapist may be able to help with adaptations to the work and home environments, in the case of long-term persisting disability.

### **Fatigue**

There is often a feeling of tiredness and even depression after any major illness, operation or radiotherapy. It tends to pass after some weeks.

### **Sport**

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Body contact sports are probably best avoided even after excellent neurological recovery. Any operation or disease in the spine is likely to have caused at least some weakness of the spinal column.

## Conclusion

Though not common, spinal tumours can cause serious problems. Many are treatable, by one means or another, but not all are curable. Useful treatment to improve function or control pain is often practical, even if cure cannot be achieved. Supportive care, when there is major disability, is available for those who are unable to care for themselves. Rehabilitation is important for anyone still significantly affected after treatment, in order to maximise recovery.

If you would like more information or clarification, please contact the Neurosciences Unit. Ward 43 Tel 024 7696 7802 or 024 7696 5330

## Useful Organisations

### Brain and Spine Helpline

[www.brainandspine.org.uk](http://www.brainandspine.org.uk)

Telephone: 0808 808 1000 (Information and support on neurological disorders for patients, carers and health professionals)

### BackCare

[www.backcare.org.uk](http://www.backcare.org.uk)

### Macmillan Cancer Information Centre

University Hospital

Ground Floor

Clifford Bridge Road

Coventry CV2 2DX

Tel. 024 7696 6052 (Monday to Friday 9.00am to 4.00pm)

[www.macmillan.org.uk](http://www.macmillan.org.uk)

(Cancer information and support, resources for self-help groups)

### DVLA Drivers' Medical Enquiries

[www.gov.uk/driving-medical-conditions](http://www.gov.uk/driving-medical-conditions)

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### **Spinal Injuries Association**

Telephone 0845 678 6633

Freephone advice line 0800 980 0501 Monday to Friday 9.30am to 4.30pm  
(closed 1pm to 2pm)

[www.spinal.co.uk](http://www.spinal.co.uk)

(Information, practical support, counselling, campaigns, social policy and publications)

### **UHCW Contact:**

Clinical Nurse Specialists

Neuro-Oncology

Ward 43

UHCW NHS Trust

Page via Switchboard: 024 7696 4000 or 024 7696 5326

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