



## **Selective Dorsal Rhizotomy (SDR)**

### **Information for parents and patients**

#### ***Introduction:***

Spasticity is a condition that affects the muscles, making them more stiff and rigid than usual, and it may be accompanied by other problems such as uncontrolled movements. Selective Dorsal Rhizotomy is a Neurosurgical technique used to treat spasticity in the lower limbs. This is a complex procedure, that requires a pre- and post-operative programme of exercise and activity, monitored by a physiotherapist. The operation is irreversible, and it is therefore recommended that patients and their parents gain as much information as possible prior to surgery.

SDR is still not widely available in the UK. However, the technique itself is not new. It has been performed mainly in the USA for the treatment of cerebral palsy. However, it is now available on the NHS. Potential risks, benefits and alternatives will be discussed with you prior to agreeing (giving consent) to the surgery.

#### ***What are the aims of this surgery?***

- To reduce spasticity
- To improve function
- To improve walking (in those who can)
- To increase range of motion and improve body positioning

#### ***What does the procedure involve?***

This procedure aims to tackle the cause rather than the effects of spasticity. Muscles send information along sensory nerve fibres to the spinal cord to control their own tone and in neighbouring muscles. This is usually a helpful reflex. The brain informs the spinal cord how much tone or tightness each muscle should have. However, in cerebral palsy this communication route from the brain to the spinal cord does not function effectively. It is this loss of communication which contributes to spasticity. The muscles and sensory nerves then become over-active, and the reflexes become too strong and unhelpful. By identifying the correct sensory nerve fibres and 'cutting' them will consequently reduce muscle tone and tightness.

During the surgical procedure, the sensory nerve roots are identified using electrical stimulation. The ones that generate unusual electrical activity are considered to be those which contribute to too much muscle tone. The remaining nerves which carry the correct messages will remain in-tact.

### ***How long does the surgery take?***

The operation takes approximately 4-6 hours.

### ***Is my child suitable for the surgery?***

Patient selection will be carried out by a team of health professionals, including a neurosurgeon, a neurologist, an orthopaedic surgeon and a specialist physiotherapist. This team are highly trained professionals who have a specific interest in the care of spasticity and cerebral palsy. They will offer information and advice and work in partnership with you to decide the best treatment goals and options.

### ***What care will my child need after the operation?***

Provision of physiotherapy will vary for each child. It is important that an exercise programme is in place prior to the procedure, and advice will be given by a physiotherapist regarding which exercises to practise in the post-operative period. Participation in an activity or structured exercise is necessary each day following the operation.

### ***Where can I get more information?***

- Alder Hey Website                    [www.alderhey.com](http://www.alderhey.com)
- Cerebra                                    [www.cerebra.org.uk](http://www.cerebra.org.uk)
- Scope                                        [www.scope.org.uk](http://www.scope.org.uk)
- National Institute for Health and Clinical Excellence                    [www.nice.org.uk](http://www.nice.org.uk)

### **CONTACT NUMBERS**

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The information contained within this leaflet is based on evidence where available and the consensus opinion of the consultant neurosurgeons working with this NHS Trust.

This information can be made available in other languages and formats if requested.

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