

# SELECTIVE DORSAL RHIZOTOMY (SDR)

## Information For Regional Medical Teams

### The Team

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### Pre-Referral Guidance

Children over the age of two years with spastic diplegic cerebral palsy may be potential candidates for the selective dorsal rhizotomy (SDR) procedure. Care must be taken to ensure candidates will potentially benefit from the procedure due to its irreversible nature. Please see **Referral Assessment** section on next page.

### The Referral Process

Referrals for consideration of the SDR procedure are accepted from Consultant Paediatricians, Consultant Paediatric Neurologists, Consultant Orthopaedic Surgeons, and GPs. These referrals are discussed in the MDT Spasticity meeting before patients are listed for an outpatient appointment. If further information is required this will be requested before the referral is finally accepted.

An initial patient assessment will be undertaken in an MDT clinic by a paediatric neurosurgeon, paediatric neurologist and paediatric physiotherapist. An application for funding will then be made before the patient will be listed for surgery.

***Please ensure your physiotherapy colleagues are aware and in agreement with the referral as long-term rehabilitation is essential.***

### Referral Criteria

1. Spastic Diplegic Cerebral Palsy
2. Preterm birth or full term with typical signs of spastic diplegia
3. Age 3-9 years for surgery – although we would be happy to review children aged 2 years in clinic.
  - a. In July 2018 NHS England announced routine commissioning and funding for SDR for children aged 3-9 years old. We are willing to review children outside this age range and to then discuss them with NHS England, but the NHS Commissioners may not be willing to fund their surgery.
4. MRI shows typical cerebral palsy changes with no evidence of damage to key areas of brain controlling posture and coordination (cerebellum)
5. GMFCS levels II-III
  - a. Only these levels of function will be accepted by NHS England for SDR funding. We are willing to assess children outside this range for general spasticity management reviews.
6. Definite dynamic spasticity in lower limbs affecting function and mobility
7. No dystonia
8. No evidence of genetic or progressive neurological illness
9. Mild to moderate lower limb weakness with the ability to maintain antigravity postures. The stronger the better pre op.
10. No significant scoliosis or hip dislocation

## Referral Assessment

The assessment pre-referral should identify the following factors in the child's presentation:

### 1. Spasticity

- Spasticity of a grade 1+ or above on the Modified Ashworth Scale should be in evidence.
  - This means that fast movement of the limb should be met with a slight increase in muscle tone, manifested by a catch, followed by minimal resistance throughout the remainder (less than half) of the range of movement.

### 2. Gross Motor Function

- Children in levels II and III on the GMFCS are most likely to benefit from SDR.
  - This means that children should be able to demonstrate some independent sitting ability and independent mobility with or without assistive devices.
  - A child in levels I or IV may be considered for SDR where there is good evidence for their potential to improve their gross motor ability as underlying muscle strength is good and spasticity is interfering with their gross motor development.

### 3. Muscle Strength

- The child should be able to demonstrate the ability to actively isolate lower limb muscles that are antagonistic in nature to the primary spastic agonists.
  - For example, the child should be able to demonstrate some active dorsiflexion where equinus is a primary problem.
- They should also be able to maintain antigravity positions without support.

### 4. Muscle and Soft Tissue Contractures

- It is accepted that children with cerebral palsy may have some degree of contracture in their lower limb muscles.
- This does not exclude them from the SDR procedure but may inhibit their post-operative progress if not addressed.
- The greater the degrees of contracture the less effective the procedure will be at improving their gross motor function.
- Children with contractures must be prepared to undergo orthopaedic surgery to correct these issues after the SDR surgery.

### 5. Orthotic Appliances

- The need for orthotics may reduce post SDR but in the initial period after the operation children will need to wear some form of lower limb orthotic device.
- Potential candidates must be tolerant of orthotics and have the ability to attend orthotic appointments in their local service.

### 6. Cognitive Ability and Psychological Maturity

- Children that are put forward for the SDR procedure must be able to cooperate with intensive exercise session and have the cognitive ability to understand the importance of adhering to home programmes.

### 7. Family Support, Motivation and Adherence to Rehabilitation

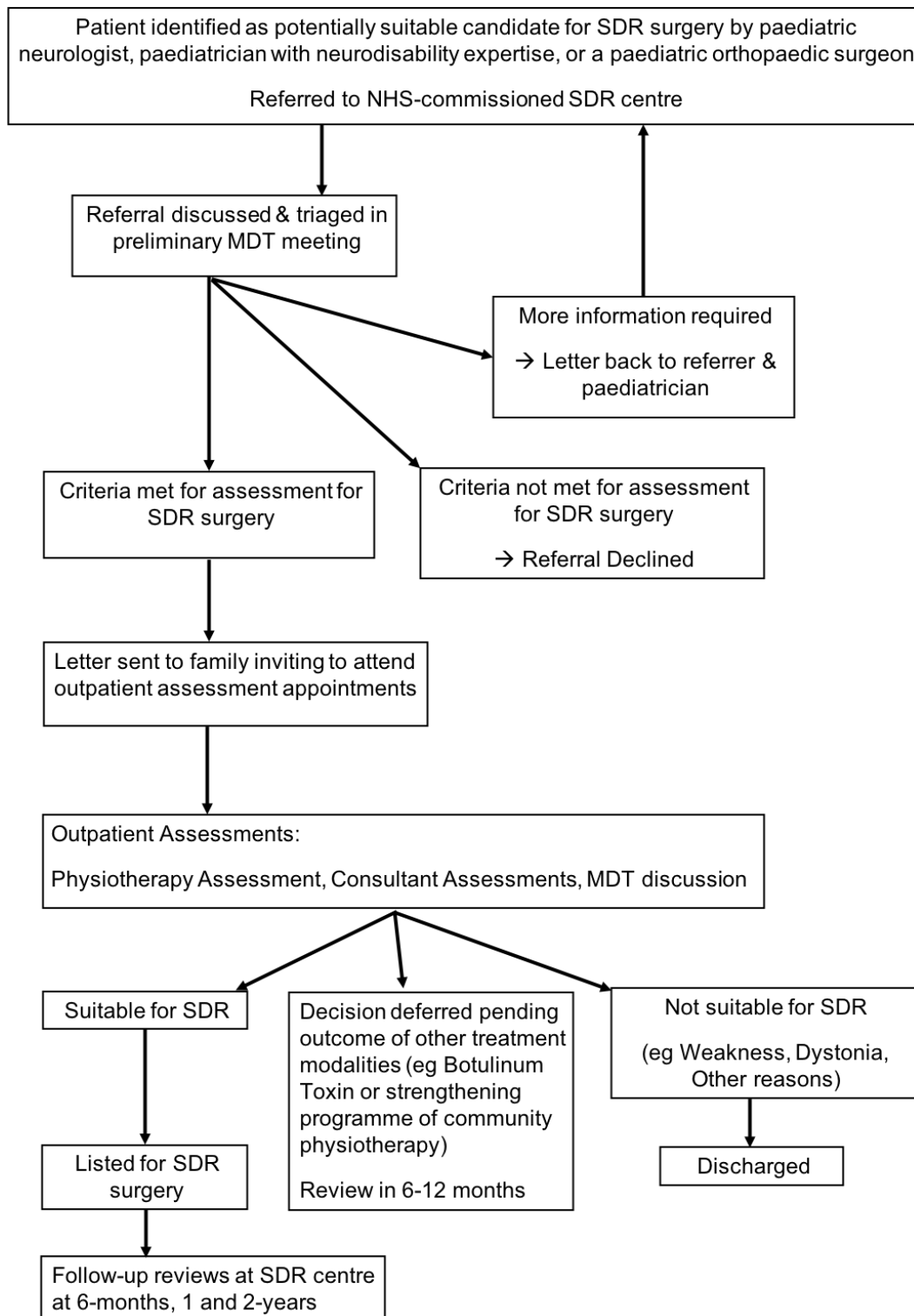
- Children undergoing SDR benefit from daily strengthening programmes that cannot realistically be the sole responsibility of the physiotherapist. Families must understand and commit to the long-term nature of the rehabilitative process post SDR.
- It may take up to 2 years for significant improvements in gross motor functioning to be seen.
- They must also be prepared to attend outpatient appointments at the Leeds General Infirmary.
- A significant past history of poor adherence to rehabilitation would have to be taken into consideration when assessing suitability for the procedure.

### 8. Physiotherapy Support

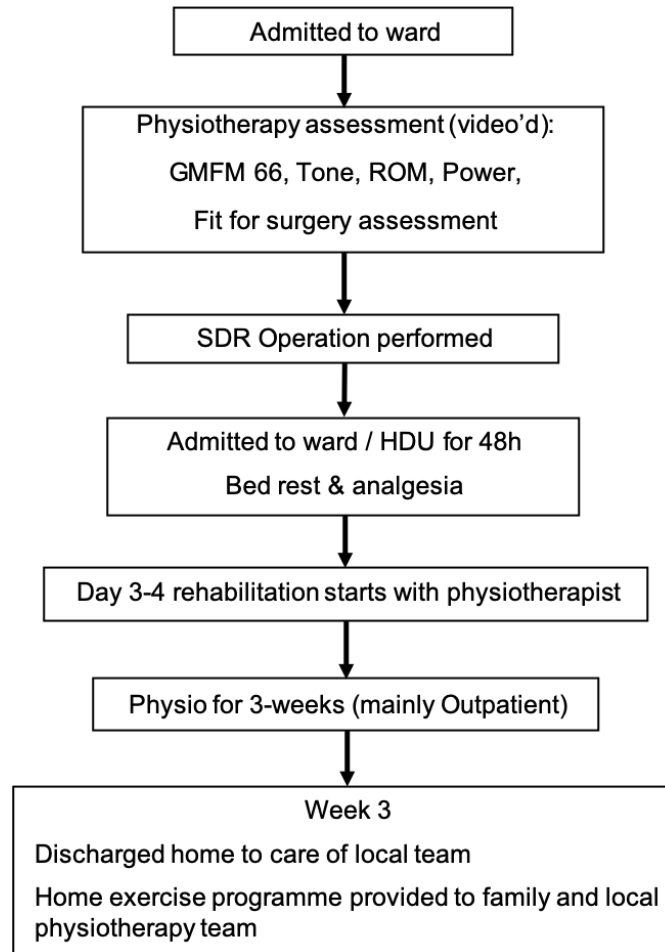
- The physiotherapist plays a key role post operatively in the long-term management of patients undergoing SDR.
- The physiotherapy team should be able to commit to this long-term input and be able to respond to the changing needs of the child.

- The team should have the capacity to review home strengthening programmes and provide blocks of treatment where progress is not being maintained.
- It is the local physiotherapy team's decision how these reviews and blocks of treatment should be structured.
- Physiotherapy teams are encouraged to discuss service provision with families prior to referrals being made.

## Out Patient Pathway



## In Patient Pathway



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