Kids Brain Doc

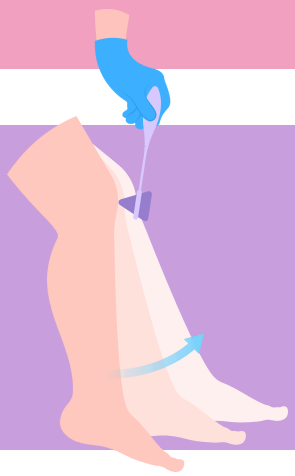
Dr. Laila Mohammad

Selective Dorsal Rhizotomy (SDR)

Patient Packet

www.KidsBrainDoc.com

Diagnosis: Spasticity



What is it?

Spasticity happens when muscles get stiff and tight because the brain and spinal cord send abnormal signals to the muscles. *Cerebral palsy* (CP) is a group of disorders caused by early brain injury or abnormal development that affects movement and muscle tone, and spasticity is a common feature.

Who does it affect?

Spasticity most commonly affects children with cerebral palsy or other conditions involving early injury to the brain or spinal cord that causes an imbalance of signals from the brain or spinal cord to the muscles.

How did my child get it?

Spasticity develops from damage to the parts of the brain or spinal cord that control movement, often occurring before birth, during birth, or early in life, such as from a brain bleed (*IVH*), stroke, or lesion.

Is it Harmful?

While spasticity itself is not life-threatening, it can stop muscles from growing properly, leading to muscle tightness and eventual bone problems. Over time, it can limit movement, prevent walking, cause pain, and affect the ability to perform tasks.

What is the Treatment?

If your child's muscle tightness makes it difficult for them to walk, do daily activities, or if it causes pain, treatments are available. Options like physical therapy, medications, injections, braces, or surgery such as selective dorsal rhizotomy (SDR) can help reduce tightness and improve movement.

WHO'S A GOOD CANDIDATE FOR SDR: AMBULATORY

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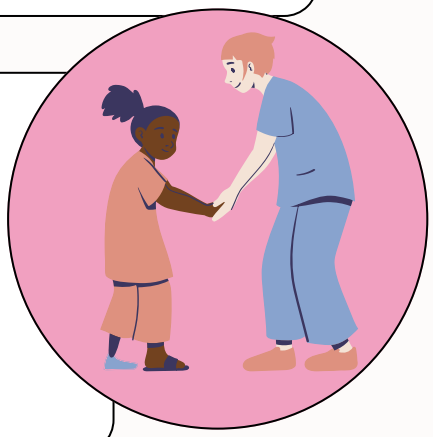
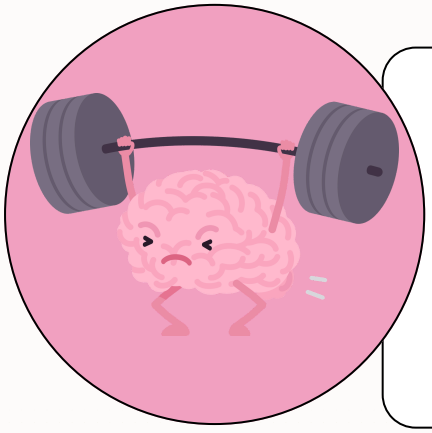
01. WHO

Children who can walk, with or without assistive devices, may experience muscle tightness that causes spasticity, affecting their walking pattern or endurance. With reduced spasticity, their strength and motor control can improve.

02. BENEFITS

It can permanently help kids who have trouble walking because of stiffness, scissoring, toe walking, or tiredness, not just weakness. The aim is to make walking smoother, more efficient, and independent.



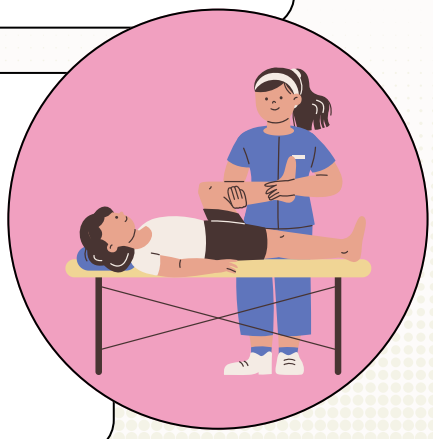


03. IMPROVEMENTS

Many kids notice better walking, improved balance, more endurance, and find it easier to join in therapy and daily activities. Progress is gradual, with strength and motor skills improving over several months after surgery.

04. REQUIREMENTS

For a successful recovery, regular physical therapy and active involvement in rehab are key. Families should get ready for a well-organized rehab process, focusing on building strength, stretching, and relearning movements.



WHO'S A GOOD CANDIDATE FOR SDR: PALLIATIVE

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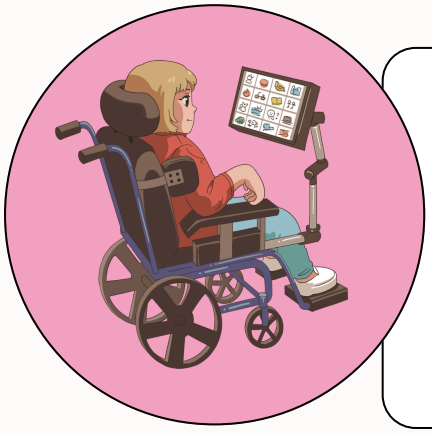


01. WHO

Kids who can't walk on their own and have very tight muscles may feel pain or have trouble with hygiene, positioning, or caregiver tasks. The aim is to make them comfortable and improve their quality of life, rather than focusing on walking.

02. BENEFITS

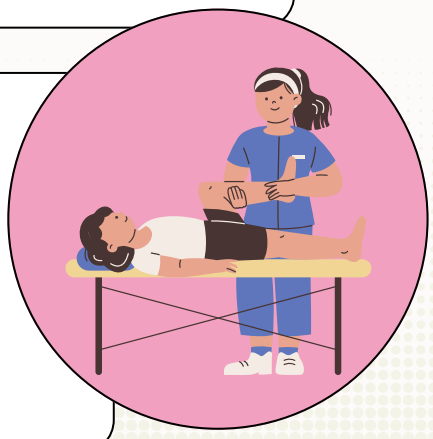
It can help ease muscle stiffness in the lower body muscles that make sitting, dressing, diapering, or sleeping hard. It might also lessen spasms that cause discomfort or make daily care tricky.

03. IMPROVEMENTS

Families often notice easier positioning, improved tolerance of wearing braces, reduced pain, and smoother caregiving routines. Functional mobility may not change significantly, but comfort and daily care often improve.

04. REQUIREMENTS

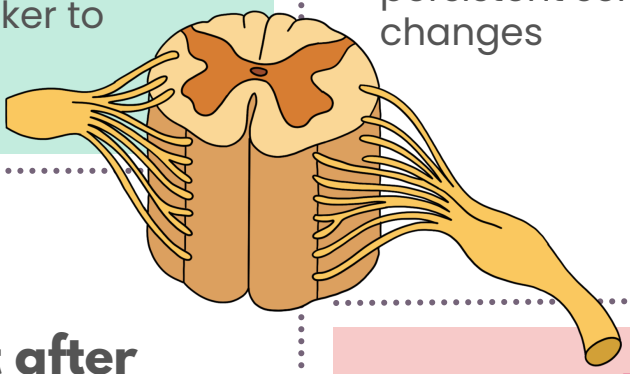
Postoperative therapy focuses on stretching, positioning, and maintaining joint mobility rather than gait training. Ongoing collaboration with therapy, orthotics, and medical teams helps maximize comfort and long-term results.



Surgery: Selective Dorsal Rhizotomy

1 Goals of Surgery

- Reduce leg spasticity permanently
- Improve long-term function and quality of life
- On average, will improve one level (from walker to walking)



2 Risks of Surgery

- Temporary side effects: tingling/numbness of legs, difficulty peeing, muscle spasms in the calves
- Rare complications: infection, CSF leak, persistent sensory changes

3 Alternatives

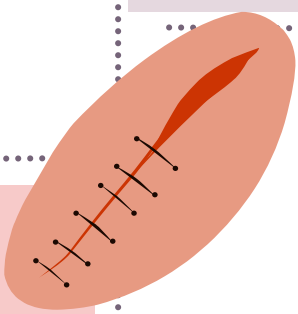
- Medications, therapy, casting/bracing
- Botulinum Injections
- Baclofen Pump
- The SDR in which the surgeon removes the bone of the entire lumbar spine

4 Right after Surgery

- Your child will be admitted to the ICU with a Foley catheter in the bladder
- They will lie on their back or side for the first night for their back to heal
- Pain medications: IV Tylenol, IV Motrin, Gabapentin.
- Antibiotics: 24 hours.
- Work with therapy on Day 1 after surgery.

5 Hospital Recovery

On Day 2 after surgery, we will work towards discharging you to inpatient rehabilitation for intensive therapy. Some patients will be discharged to outpatient therapy, based on their circumstances.



6 Incision Care

- Ok to shower 2 days after surgery
- No bathing or soaking incision in tub for 4 weeks after surgery
- Absorbable stitches will fall off on their own in 3-4 weeks
- Incision will be covered until you are discharged

Recovery & Follow-Up

ACTIVITY RESTRICTIONS

- Day 1 after surgery: sitting on edge of bed with support
- 0-6 weeks: inpatient physical therapy
- 6 weeks-2 years: Outpatient physical therapy

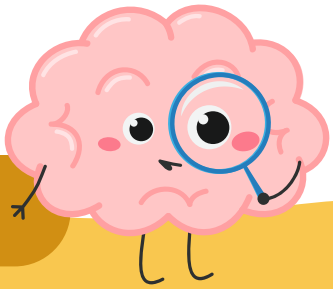
HOME CARE

After discharge for inpatient rehab, your child will begin intensive outpatient therapy

FOLLOW-UP

- 2-week: incision check
- 3 months
- Annual check-up

LONG-TERM CARE



- SDR is one step in your child's journey.
- Ongoing care with the physician managing your child's spasticity, typically a physiatrist (PM&R doctor) or neurologist, is very important.
- Long-term therapy and follow-up help maximize independence, mobility, and quality of life.