

## PAEDIATRIC LIMB LENGTH DISCREPANCIES AND LIMB RECONSTRUCTION

Limb length discrepancy (LLD) in children occurs when one leg is shorter than the other. This condition can arise from various causes, which are broadly classified into congenital, developmental, and acquired factors:

### 1. \*Congenital Causes\*:

- \*Congenital Limb Deficiencies\*<sup>\*</sup>: Conditions like congenital femoral deficiency or fibular hemimelia.
- \*Hemihypertrophy\*<sup>\*</sup>: Overgrowth of one side of the body, which can lead to limb length differences.

### 2. \*Developmental Causes\*:

- \*Growth Plate Injuries\*<sup>\*</sup>: Trauma to the growth plates (epiphyses) can result in premature closure, affecting limb growth.
- \*Infections\*<sup>\*</sup>: Osteomyelitis or septic arthritis can damage growth plates, leading to discrepancies.

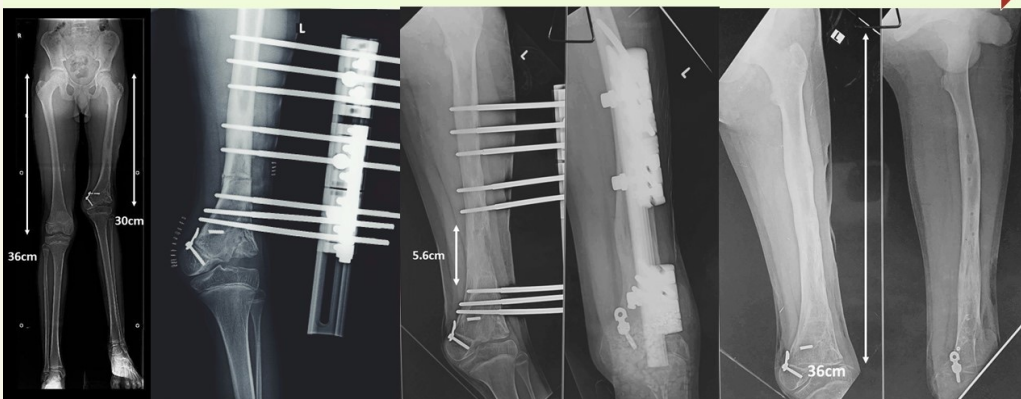
### 3. \*Acquired Causes\*:

- \*Fractures\*<sup>\*</sup>: Malunion or nonunion of fractures can result in limb length differences.
- \*Neuromuscular Conditions\*<sup>\*</sup>: Conditions like cerebral palsy or polio can affect muscle tone and bone growth, leading to discrepancies.
- \*Tumors\*<sup>\*</sup>: Bone tumors can disrupt normal growth patterns.

*Grow grow grow your bone, With the Paed-Ortho team!  
Merrily merrily merrily oh, Limb equality is a dream!*

Contact your Paed-Ortho for limb reconstruction, alignment and length inequalities in your child.

Scanogram showing 6cm length inequality. LRS application, osteotomy and gradual distraction. Final result



It can be very concerning, when your child starts limping and is unable to run, play or keep up with the activities of his friends. The thoughts of a parent will also look to the quality of life, he child will have as an adult. It's best to Seek an Expert Pediatric Orthopedic Opinion like Dr Shravan, as the treatment options are extremely successful in the background of modern technology.

Consulting a pediatric orthopedic specialist is crucial when:

1. **\*Significant Discrepancy\*:**
  - A noticeable difference in limb length, typically more than 2 centimeters.
  - The discrepancy is increasing over time.
2. **\*Functional Impairment\*:**
  - Difficulty in walking or running.
  - Noticeable limping or abnormal gait patterns.
  - Back, hip, or knee pain due to compensatory mechanisms.
3. **\*Associated Symptoms\*:**
  - Visible deformity or asymmetry in the limbs.
  - Recurrent fractures or injuries.
4. **\*Underlying Conditions\*:**
  - Presence of congenital anomalies, neuromuscular disorders, or history of significant trauma or infection.

### Treatment Options for Limb Length Discrepancies

Treatment options for LLD depend on the severity of the discrepancy, the child's age, and the underlying cause. They include:

1. **\*Non-Surgical Treatments\*:**
  - **\*Shoe Lifts\*:** Used for minor discrepancies to even out leg lengths and improve gait.
  - **\*Physical Therapy\*:** Helps to improve strength, flexibility, and gait mechanics.
2. **\*Surgical Treatments\*:**
  - **\*Epiphysiodesis\*:** A procedure to slow down the growth of the longer limb, allowing the shorter limb to catch up. Typically performed in children nearing the end of their growth period.
  - **\*Limb Lengthening\*:** Involves cutting the bone and gradually lengthening it using an external fixator or internal lengthening device. This is a lengthy process but can effectively correct significant discrepancies.
  - **\*Bone Shortening\*:** Surgically shortening the longer limb, typically considered when the child is fully grown and the discrepancy is substantial.
  - **\*Ilizarov Technique\*:** A specialized external fixator technique used for limb lengthening and correction of complex deformities.

Early evaluation and management of limb length discrepancies by a pediatric orthopedic surgeon can help ensure optimal outcomes, minimizing functional impairments and improving the child's quality of life.