

# Limb Lengthening in Skeletal Dysplasia.

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# Short Stature Problems

- **Social.**
- **Family.**
- **Psychological.**
- **Lumbar hyperlordosis.**
- **Physical obstacles.**

- \* **Public transport.**
- \* **Public telephone.**
- \* **Public bath rooms.**
- \* **Driving license.**  
**“140 cm”.**

# Why Leg lengthening in Skeletal Dysplasia?

- \* **Correct shortening.**
- \* “ **Angulation.**
- \* “ **Contractures.**
- \* “ **Rotation.**
- \* “ **Hyperlordosis.**
- \* **Joint stabilization.**

# Why short stature people ask for lengthening ?

1. To be friends with normal people.
2. To be able to do ordinary things.
3. To be comfortable.
4. To find a good job.
5. To drive a car.

**DeBastiani, Clin. Orth. 1990**

# Pre Operative assessment

- \* **Two visits.**
- \* **Physiotherapist.**
- \* **To meet another patient.**
- \* **Video tape of pin tract care.**
- \* **X-rays, measurements.**
- \* **Photography.**

# Osteogenesis after osteotomy

1. Maximum preservation of intraosseous & extraosseous blood supply.
2. Maximum preservation of periosteum.
3. Stable ext. fixator during & after lengthening.

**Ilizarov, Clin. Orth. 1990.**

# Osteogenesis after osteotomy

## CONT.....

4. Delay prior to distraction.
5. Distraction rate 1mm/d (Divided).
6. Physiological use of the limb.

**Ilizarov, Clin. Orth., 1990.**



# Functional Benefits

1. Improve hyper lordosis  
due to tension on Hamstrings.
2. Improve walking due to:
  - \* Decrease in the anserine movement.
  - \* Decrease rotation & angular deformities.

**De Bastiani, Clin. Orth., 1990.**

Professor Freih Abuhassan - University  
of Jordan

# Percutaneous releases in Hyperlordosis.

- \* Adductors.
- \* Sartorius.
- \* Rectus femoris.
- \* Fascia lata.

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**Vilarrubias, Clin. Orth., 1990.**

# Post operatively.

- \* **Observation for NVD.**
- \* **Pin tract care.**
- \* **Lengthening training.**
- \* **Chart for lengthening.**

7 patients

Age : 11 - 19 Y (14)

5 M, 2 F

# 16 Segments

- \* 12 tibia.
  - \* 04 femurs.
- 

**Orthofix Monolateral Lengthener.**

# Skeletal Dysplasia Group

4 Achondroplasia.

1 Hypo achondroplasia.

1 Metaphyseal Chond.Dys.

1 Acrodystosis.

**Increase in segment length.**

**14.6 Cm (11 - 17 cm).**

# Days in lengthener

**233 Day (210 - 540)**



Percentage increase in  
segment length.

53.25% (36.5% - 71%).

# Procedure per patient.

\* Total Procedures:      99  
7 patients.

\* 14.1 (10 - 19)

# Procedures per segment

\* Total Procedures:     99

Segments : 16

\* 6.18    (4 - 11)

# COMPLICATIONS

*Pin tract infection.	4
* Fracture.	3
* Axial deviation.	9
* Re osteoclasia tibia.	2

# COMPLICATIONS CONT..

- \* **Re osteoclasia fibula.** 1
- \* **Knee contracture.** 3
- \* **TA contracture.** 6
- \* **Thin osteogenic bone.** 2

# CONCLUSION

- \* **M**ultiple procedures.
- \* **M**anageable complications.
- \* **M**ore gain in height : Up to 34 cm.
- \* **M**orale for the patient.
- \* **M**any months of lengthening.
- \* **M**ore headache for the surgeon.

# Achondroplastic Females

<i>Patient</i>	<i>Age</i>	<i>Bone</i>	<i>Length Increase</i>	<i>Increase %</i>
<i>EB (F)</i>	<b>15 Y</b>	<b>L T</b>	<b>17 cm</b>	<b>48%</b>
		<b>R T</b>	<b>17 cm</b>	
<i>LS (F)</i>	<b>12 Y</b>	<b>L F</b>	<b>15 cm</b>	<b>46%</b>
		<b>R F</b>	<b>15 cm</b>	

# Achondroplastic Males

<i>Patient</i>	<i>Age</i>	<i>Bone</i>	<i>Length Increase</i>	<i>Increase %</i>
<b><i>JC (M)</i></b>	<b>11 Y</b>	<b>R F</b>	<b>15 cm</b>	<b>57%</b>
		<b>L F</b>	<b>15 cm</b>	<b>55%</b>
		<b>R T</b>	<b>15 cm</b>	<b>68%</b>
		<b>L T</b>	<b>15 cm</b>	<b>71%</b>
<b><i>MH (M)</i></b>	<b>15 Y</b>	<b>R T</b>	<b>12.5 cm</b>	<b>57%</b>
		<b>L T</b>	<b>12.5 cm</b>	<b>60%</b>



# Other Dysplasia Group

<i>Patient</i>	<i>Age</i>	<i>Dx</i>	<i>Bone Length</i>	<i>Increase %</i>
			<i>Increase</i>	
<i>SM</i>	<b>15</b>	<b>Acrod</b>	<b>L T 16 cm</b>	<b>57%</b>
			<b>R T 16 cm</b>	<b>57%</b>
<i>TK</i>	<b>12</b>	<b>H. Ach.</b>	<b>L T 15 cm</b>	<b>54%</b>
			<b>R T 15 cm</b>	<b>54%</b>
<i>JC</i>	<b>19</b>	<b>M.Cho</b>	<b>L T 11 cm</b>	<b>36.5%</b>
			<b>R T 11.5 cm</b>	<b>37.5%</b>

THANK YOU