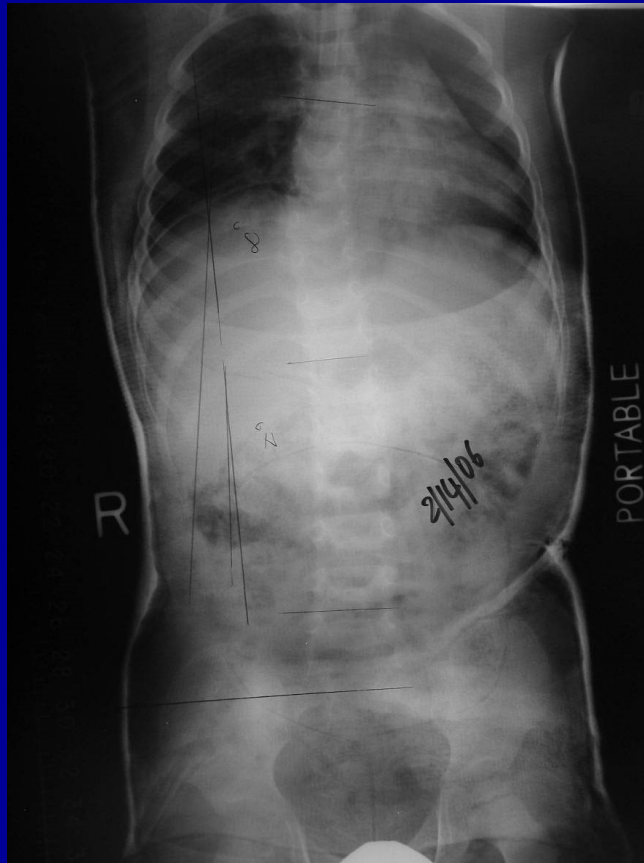


# Technique for Early Onset Scoliosis Casting



Jim Sanders, MD  
University of Rochester Dept. of Orthopaedics  
Golisano Children's Hospital

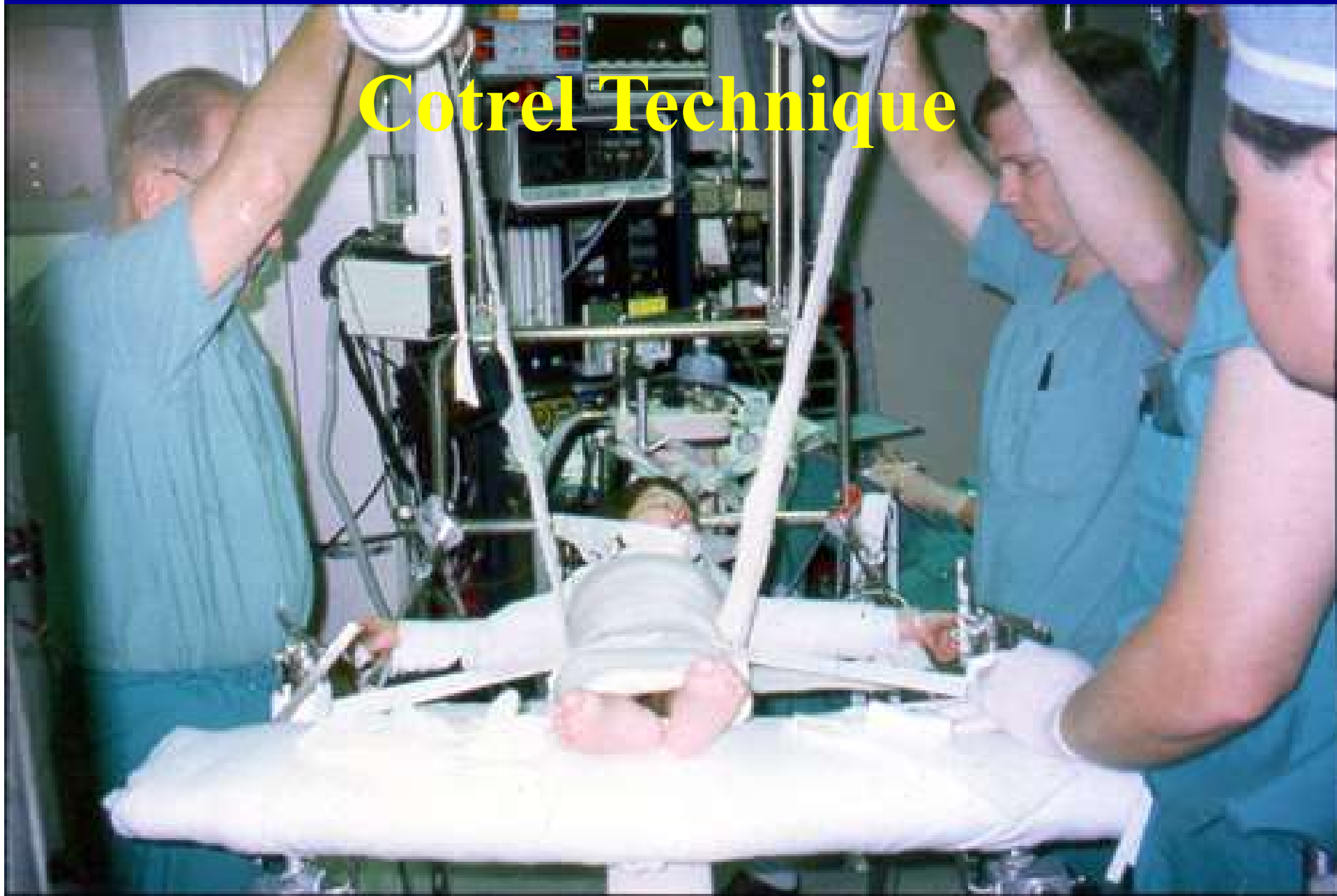


# Technique

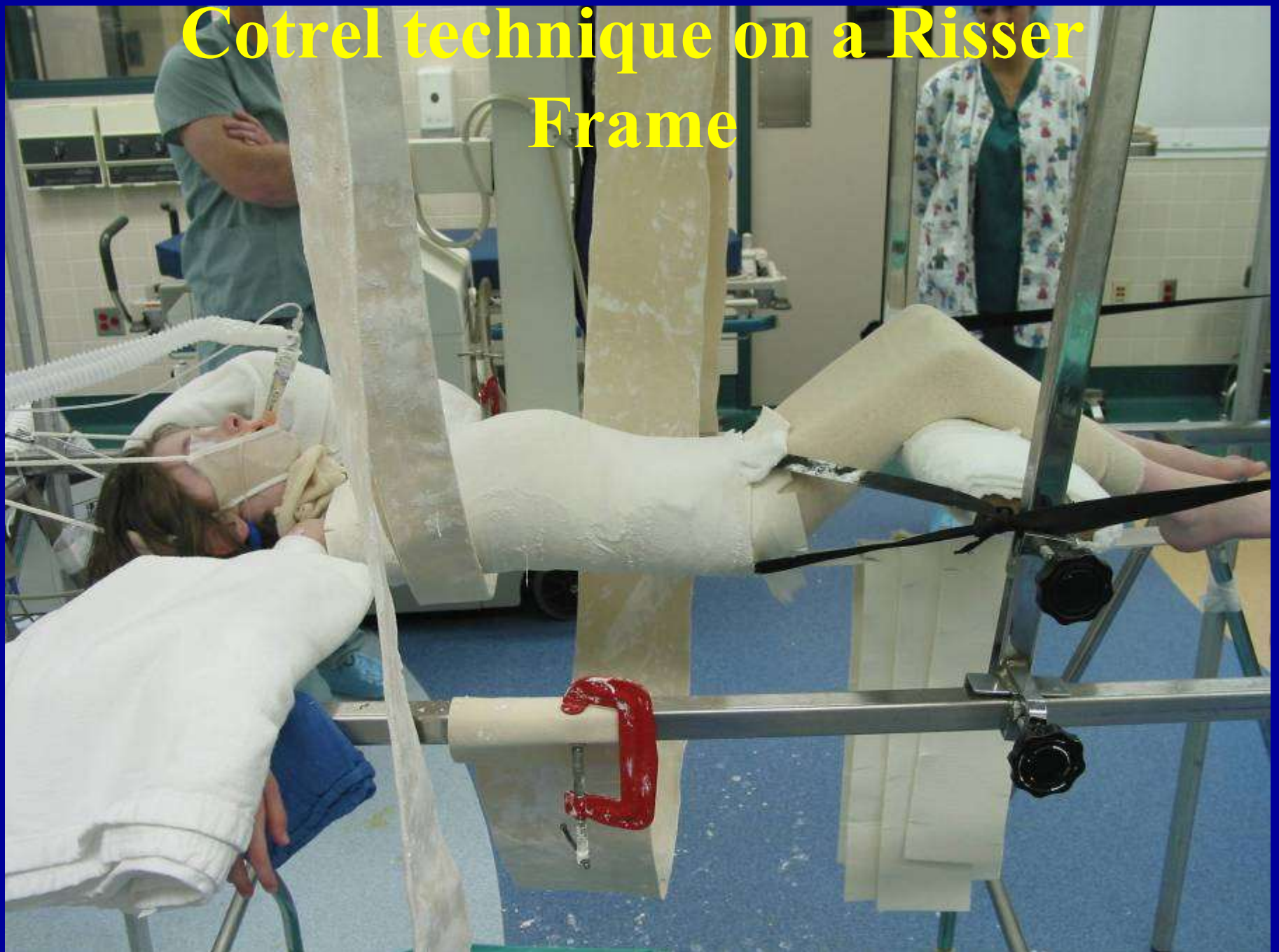
- EDF Casting as describe by Cotrel and Morel
  - Elongation
  - Derotation
  - Flexion
- Use of hands and serial correction as described by Mehta



# Cotrel Technique



# Cotrel technique on a Risser Frame





# Min Mehta



## Growth as a corrective force in the early treatment of progressive infantile scoliosis

M. H. Mehta

*From the Royal  
National  
Orthopaedic  
Hospital Trust,  
Stanmore, England*

This prospective study of 136 children with progressive infantile scoliosis treated under the age of four years, and followed up for nine years, shows that the scoliosis can be reversed by harnessing the vigorous growth of the infant to early treatment by serial corrective plaster jackets.

In 94 children (group 1), who were referred and treated in the early stages of progression, at a mean age of one year seven months (6 to 48 months) and with a mean Cobb angle of 32° (11° to 65°), the scoliosis resolved by a mean age of three years and six months. They needed no further treatment and went on to lead a normal life. At the last follow-up, their mean age was 11 years and two months (1 year 10 months to 25 years 2 months), 23 (24.5%) were at Risser stages 4 and 5 and 13 girls were post-menarchal.

In 42 children (group 2), who were referred late at a mean age of two years and six months (11 to 48 months) and with a mean Cobb angle of 52° (23° to 92°), treatment could only reduce but not reverse the deformity. At the last follow-up, at a mean age of ten years and four months (1 year 9 months to 22 years 1 month), eight children (19%) were at Risser stages 4 and 5 and five girls were post-menarchal. Fifteen children (35.7%) had undergone spinal fusion, as may all the rest eventually.



# The differences between Cotrel and Risser casting:

- Risser
  - *3 point bend*
  - Concern is Cobb angle
  - Cannot address rotation well
  - Deforms ribs in young children
- Cotrel
  - *a twist and a shift rather than a push and a bend*
  - Primarily addresses curve through correction of the rotation
  - Goal is to improve the rib deformation



















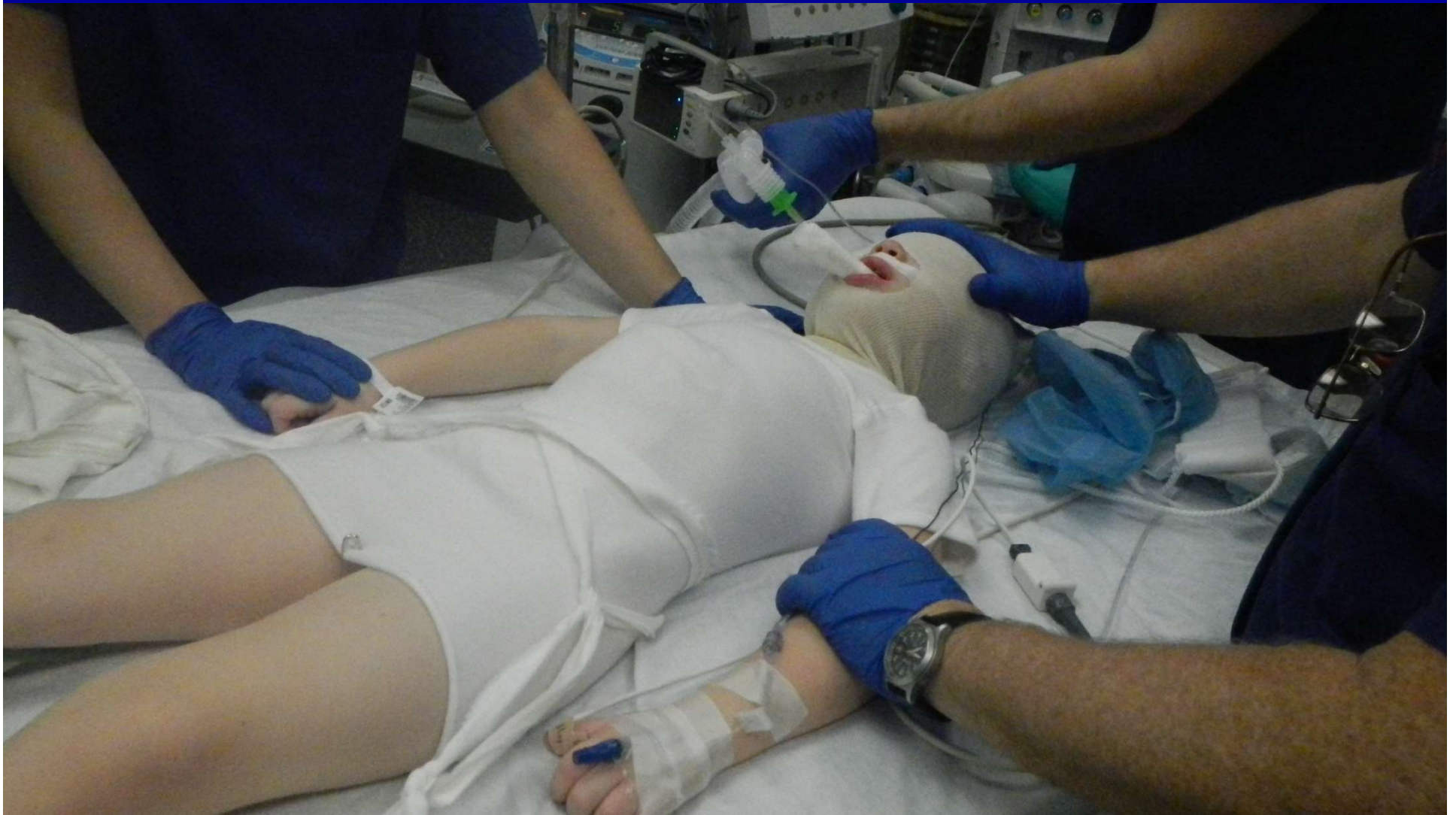




















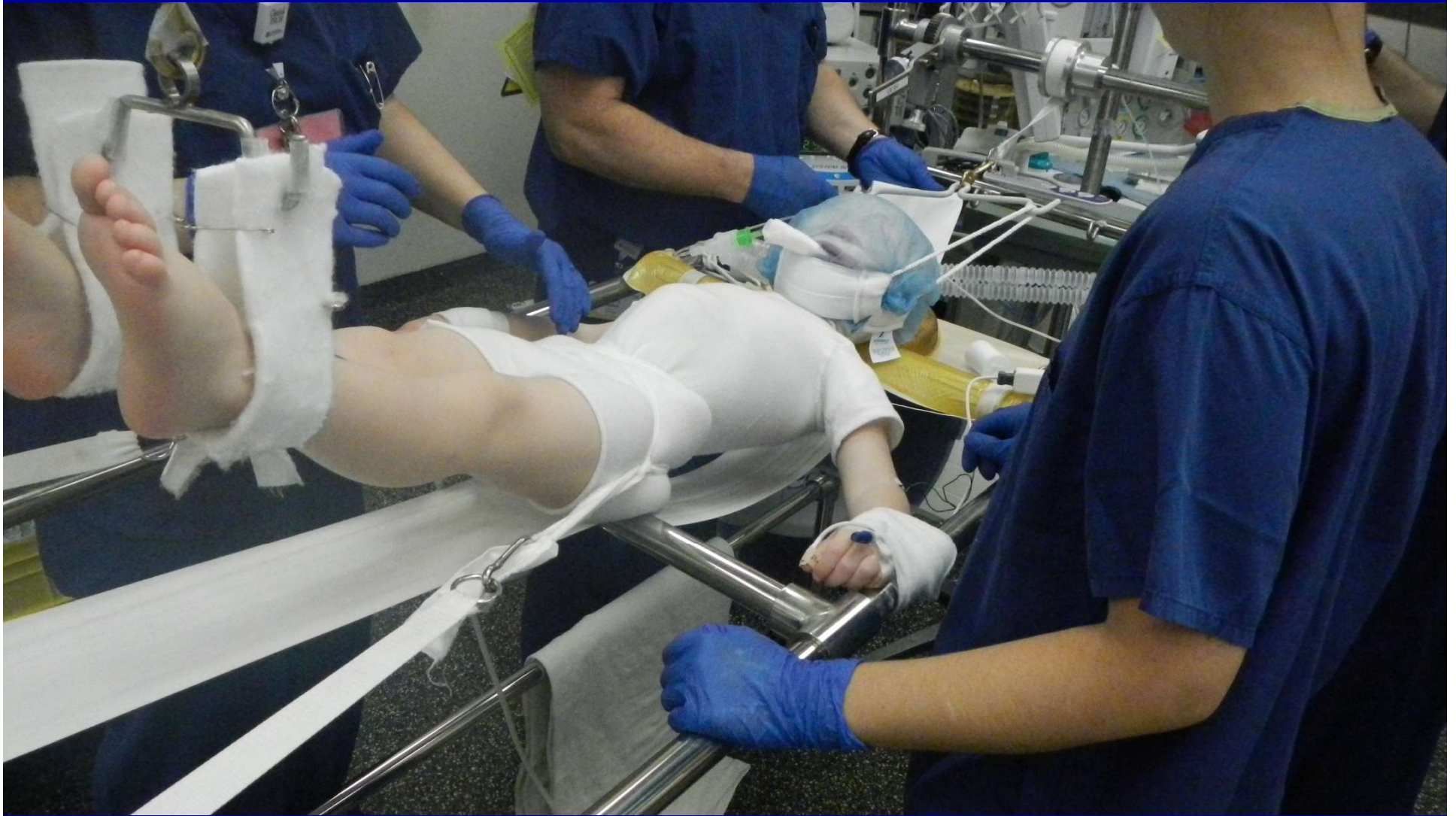


# Technique:

- A Proper Table
- Intubation
- Traction



























# Pelvic Mold

- Mold the Pelvis Well.
- It is the Foundation.



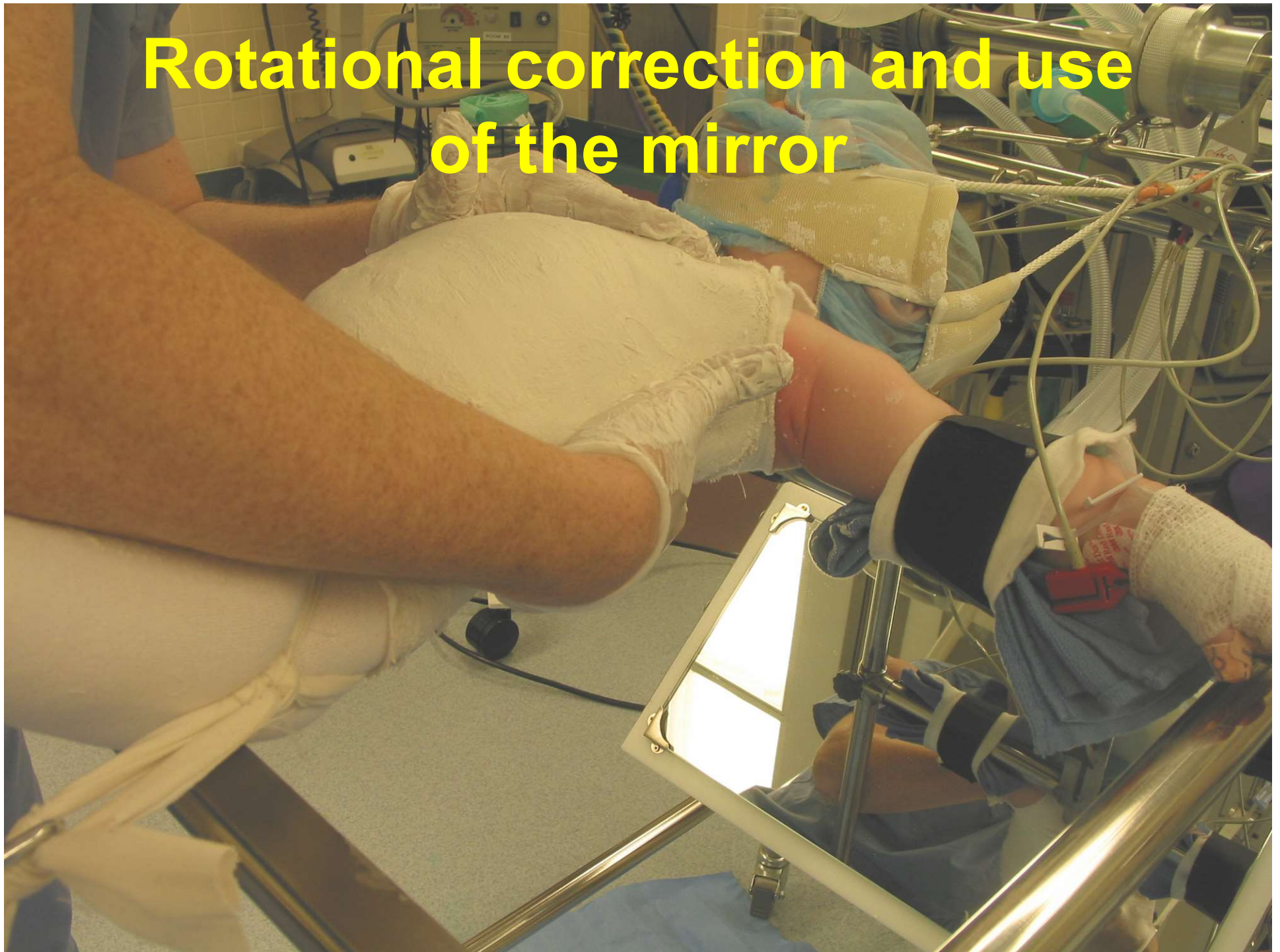






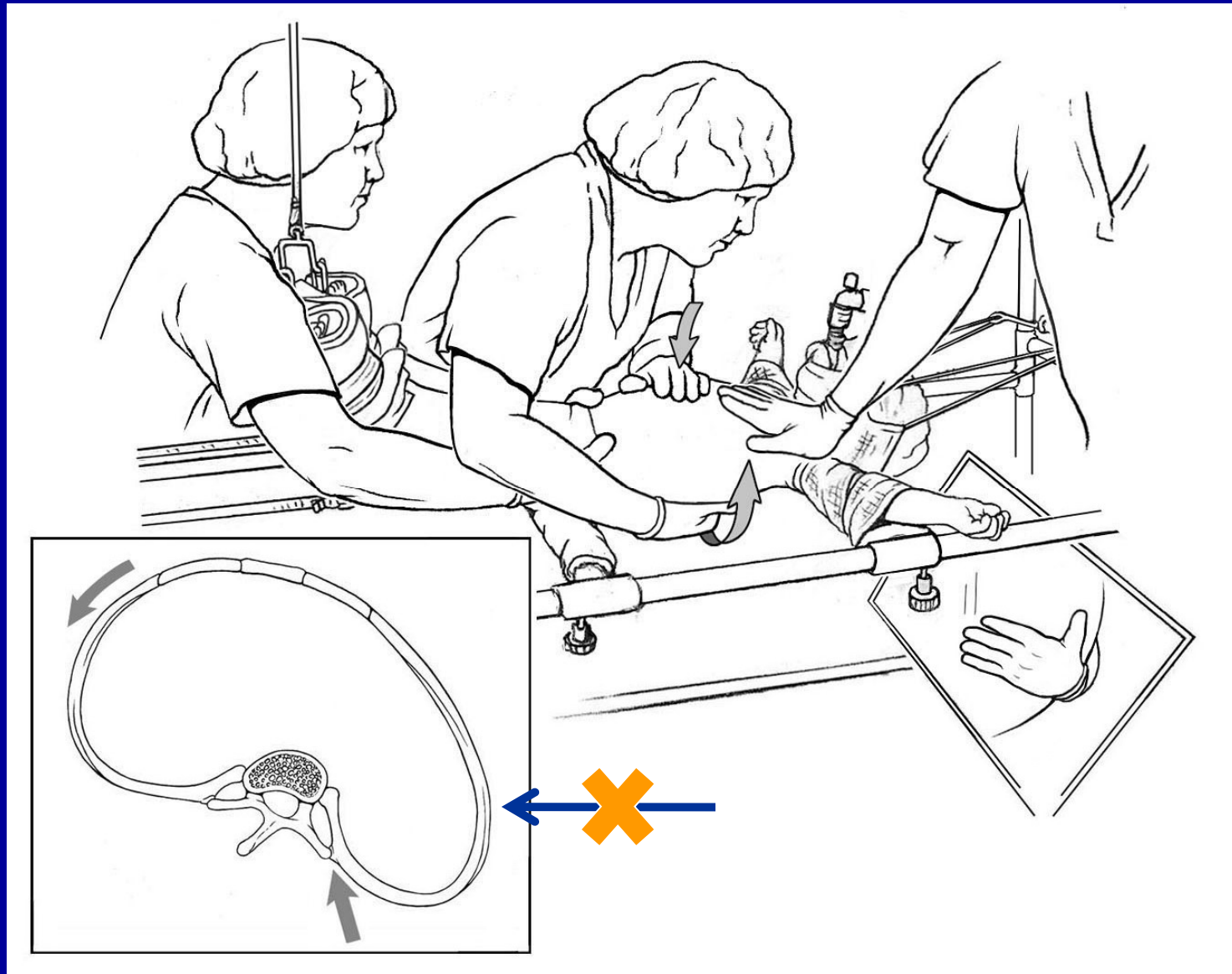


# Rotational correction and use of the mirror





# The Correction is Rotational and Not Lateral

















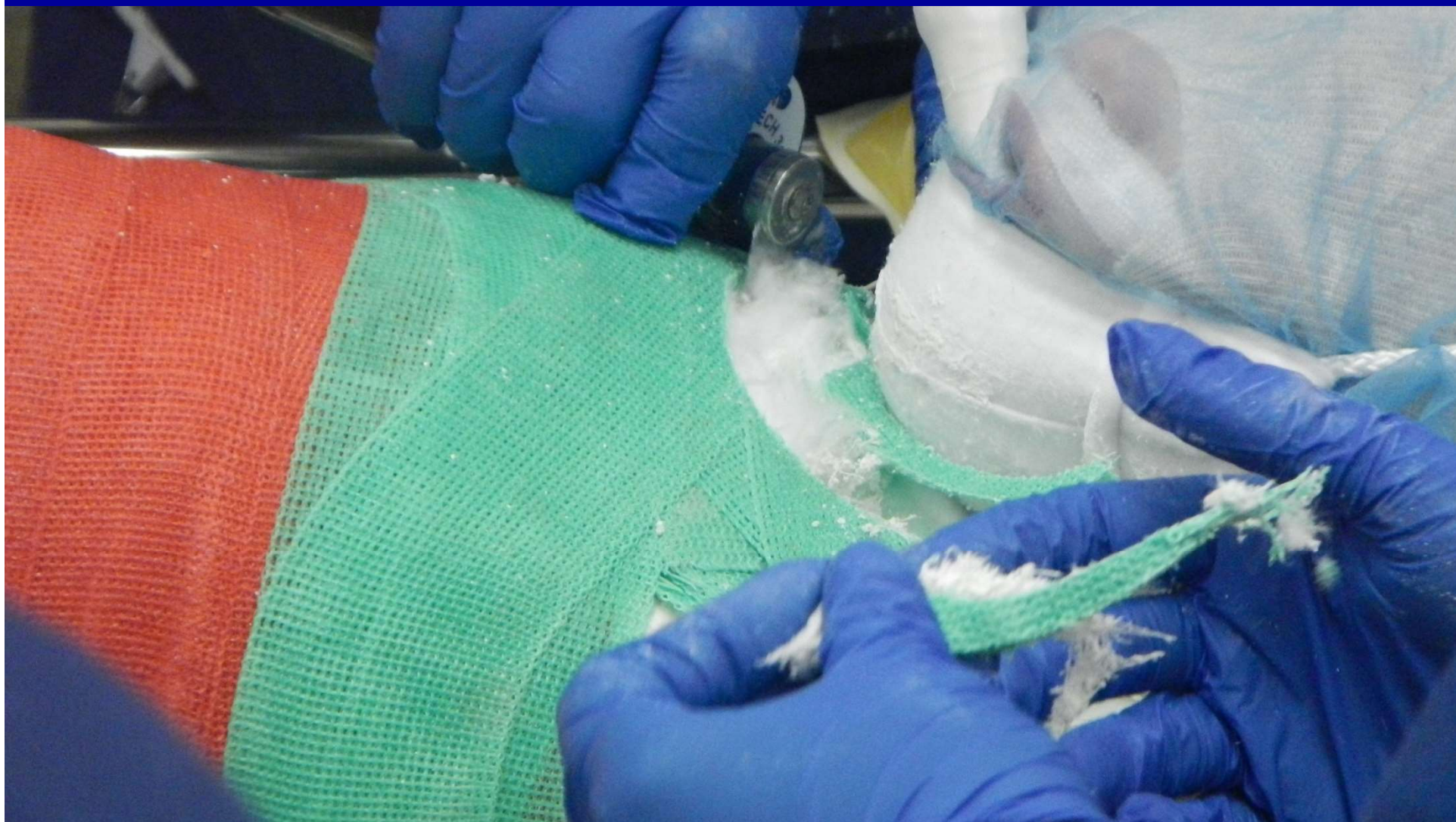
































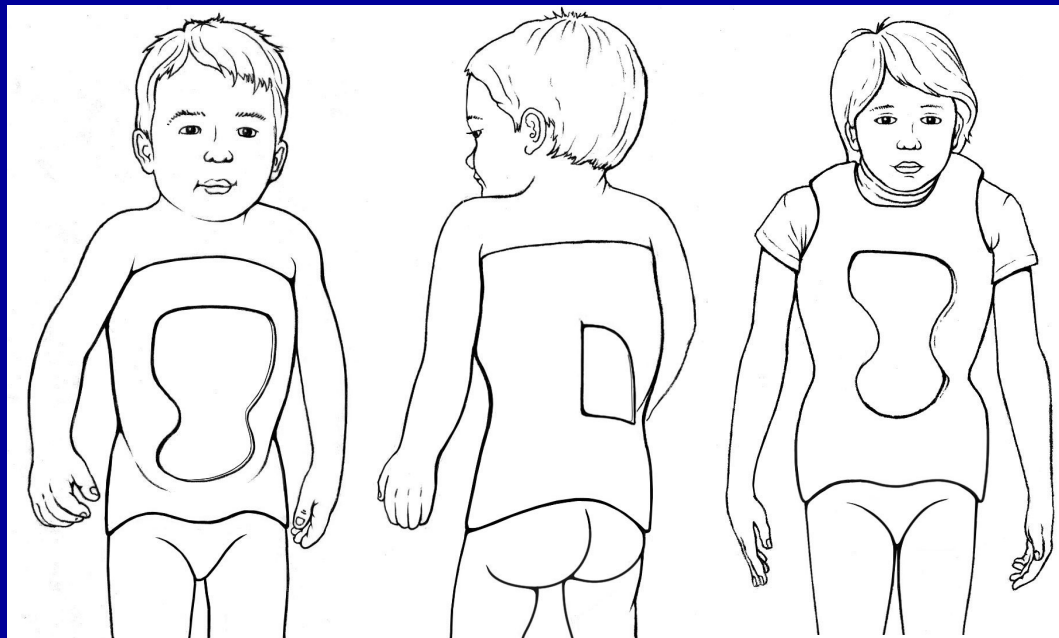






# Trims

- No difference in over from under the shoulders casts for most
  - Typical apex is lower thoracic
- Make a concave window
- Abdominal and chest relief
- Pelvis sufficient for  $>90$  degree hip flexion





# Protocol

- Cast changes based on age:
  - $\leq 2$  yrs, q2 months
  - 3yrs, q3 months
  - $\geq 4$ yrs, q4 months
- Cast until gone or stabilized
- Bracing holidays periodically in older children.
- Brace for 1 year after correction

# Thanks to My Teachers





Questions?

