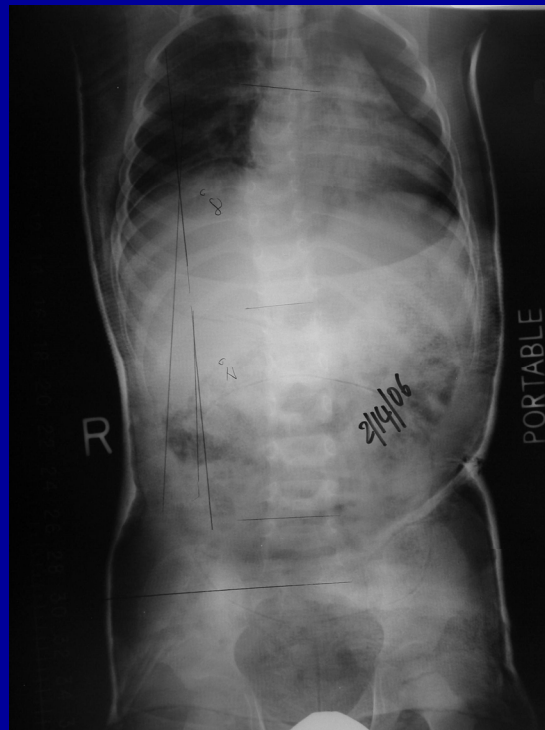


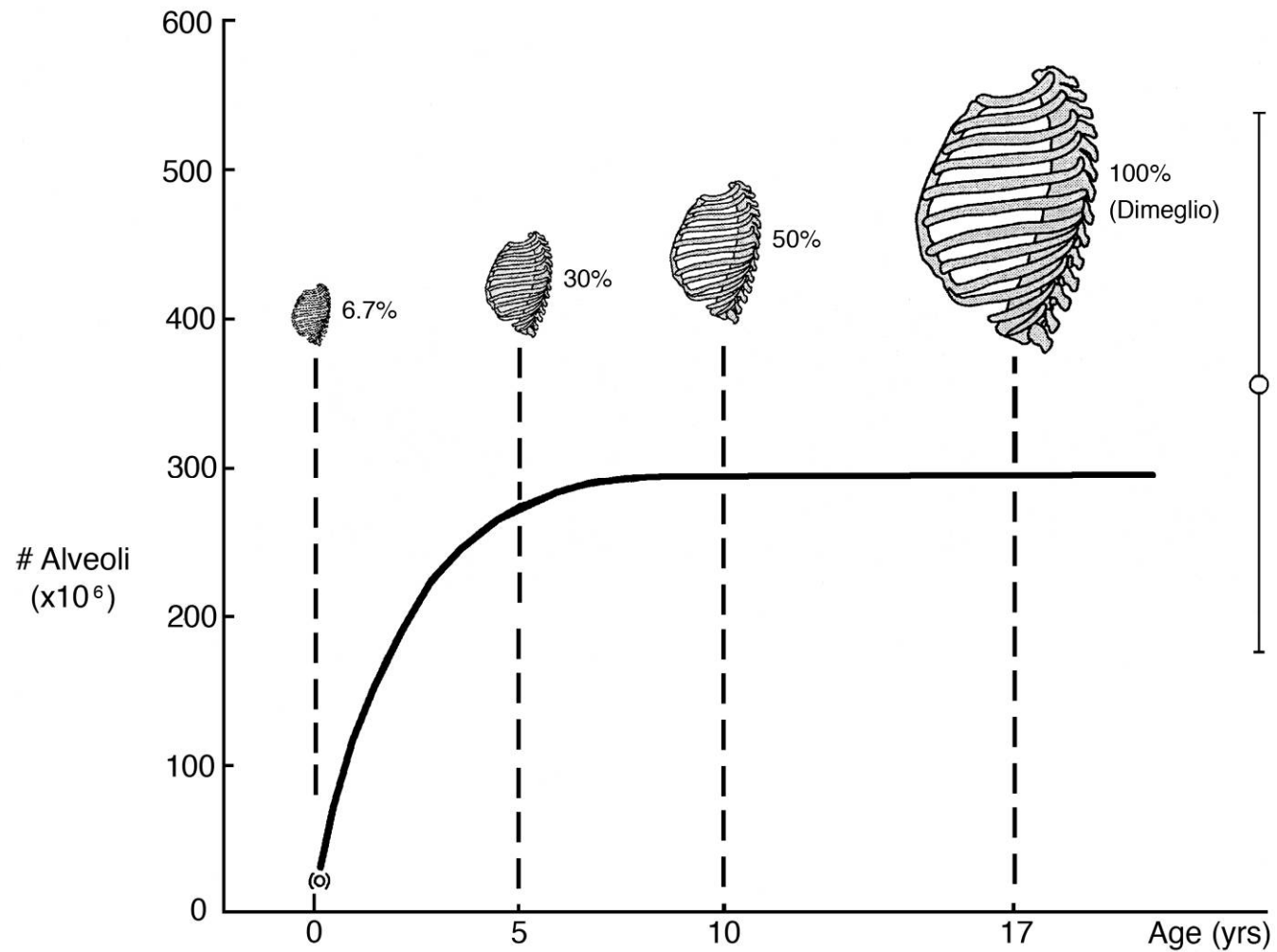
# What are the appropriate outcomes for non-operative treatment of early onset scoliosis?



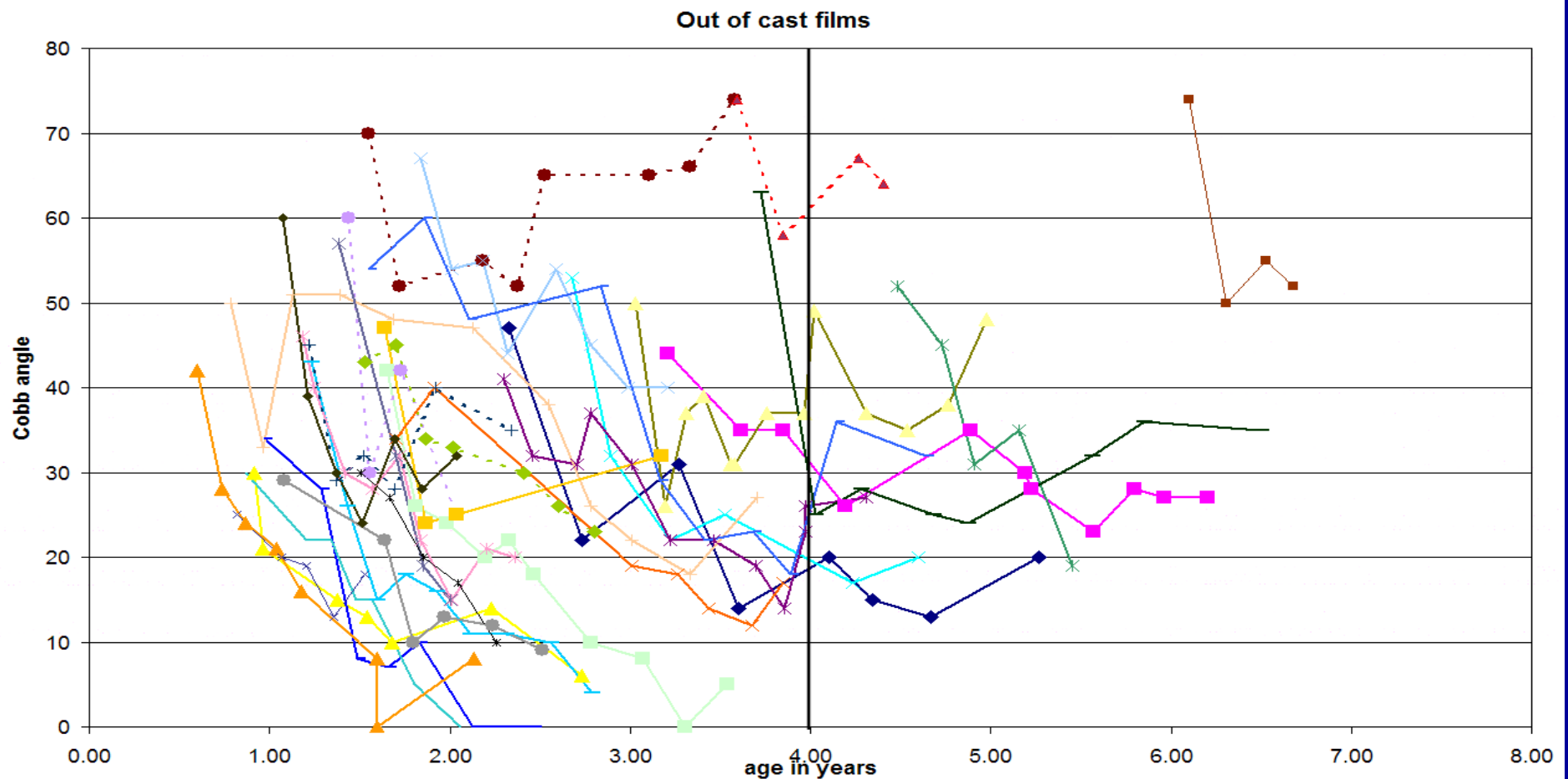
Jim Sanders, MD  
University of Rochester Dept. of Orthopaedics  
Golisano Children's Hospital



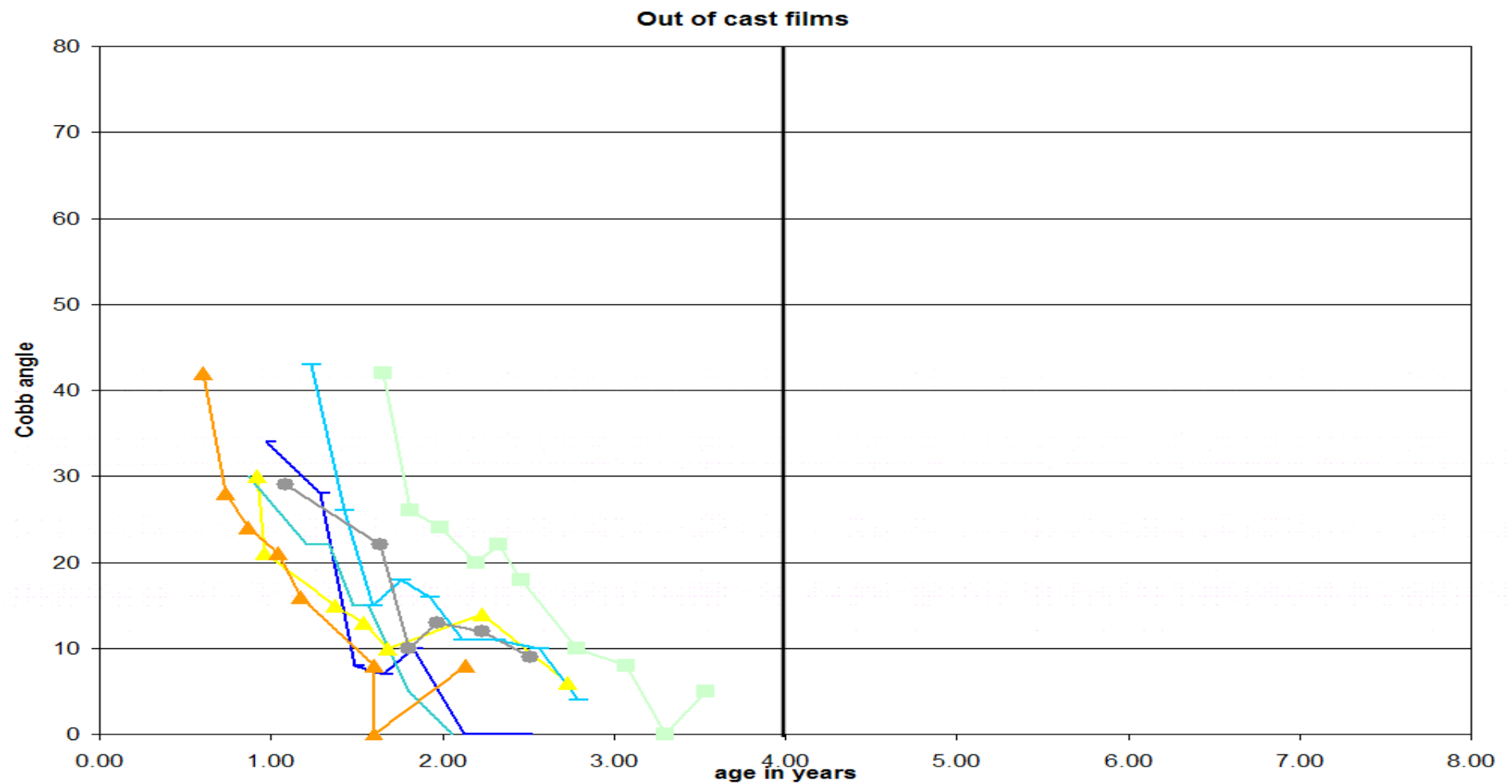
# Hyperplasia + Hypertrophy



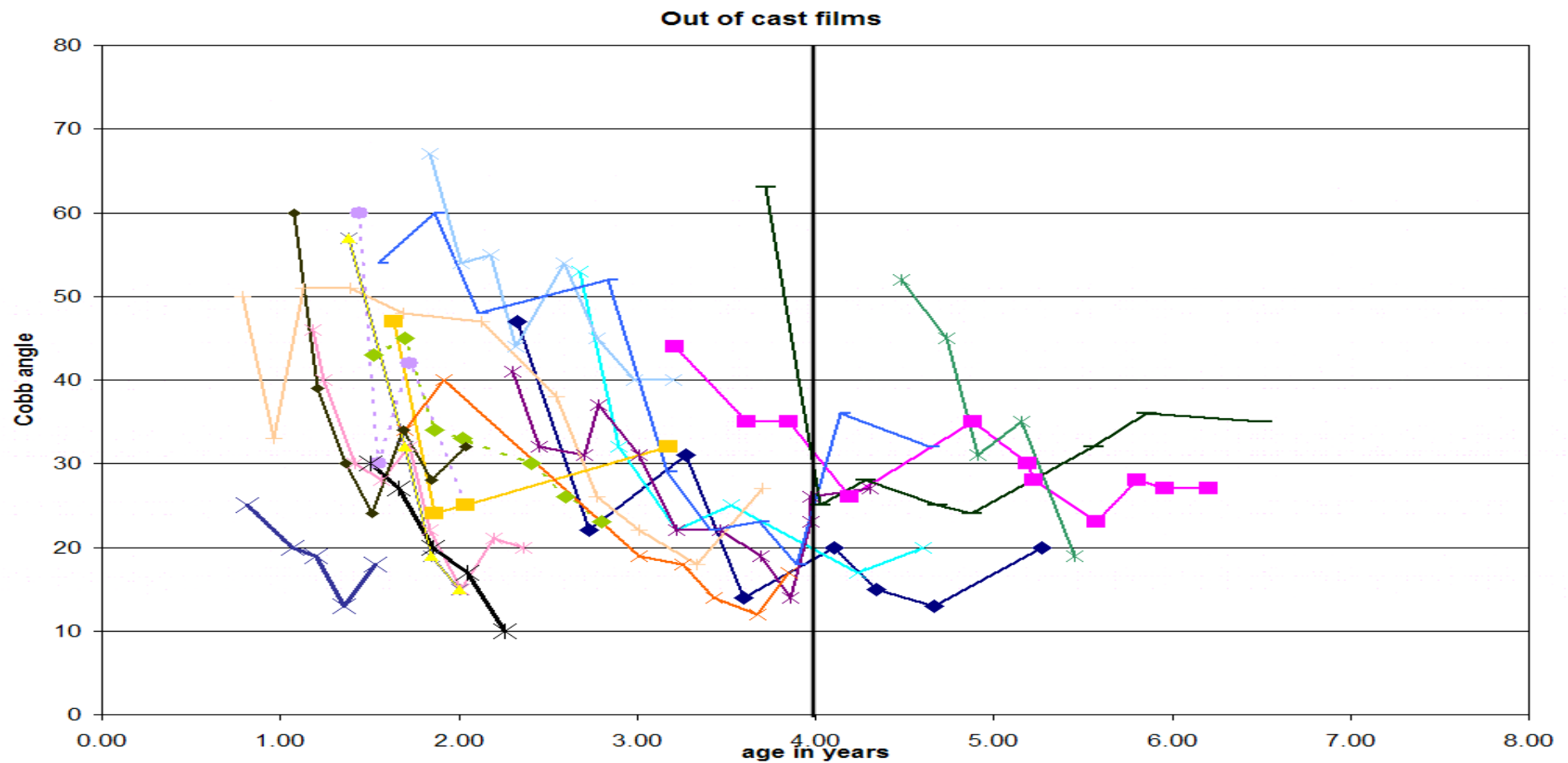
# Results (Cobb Angle – All Patients)



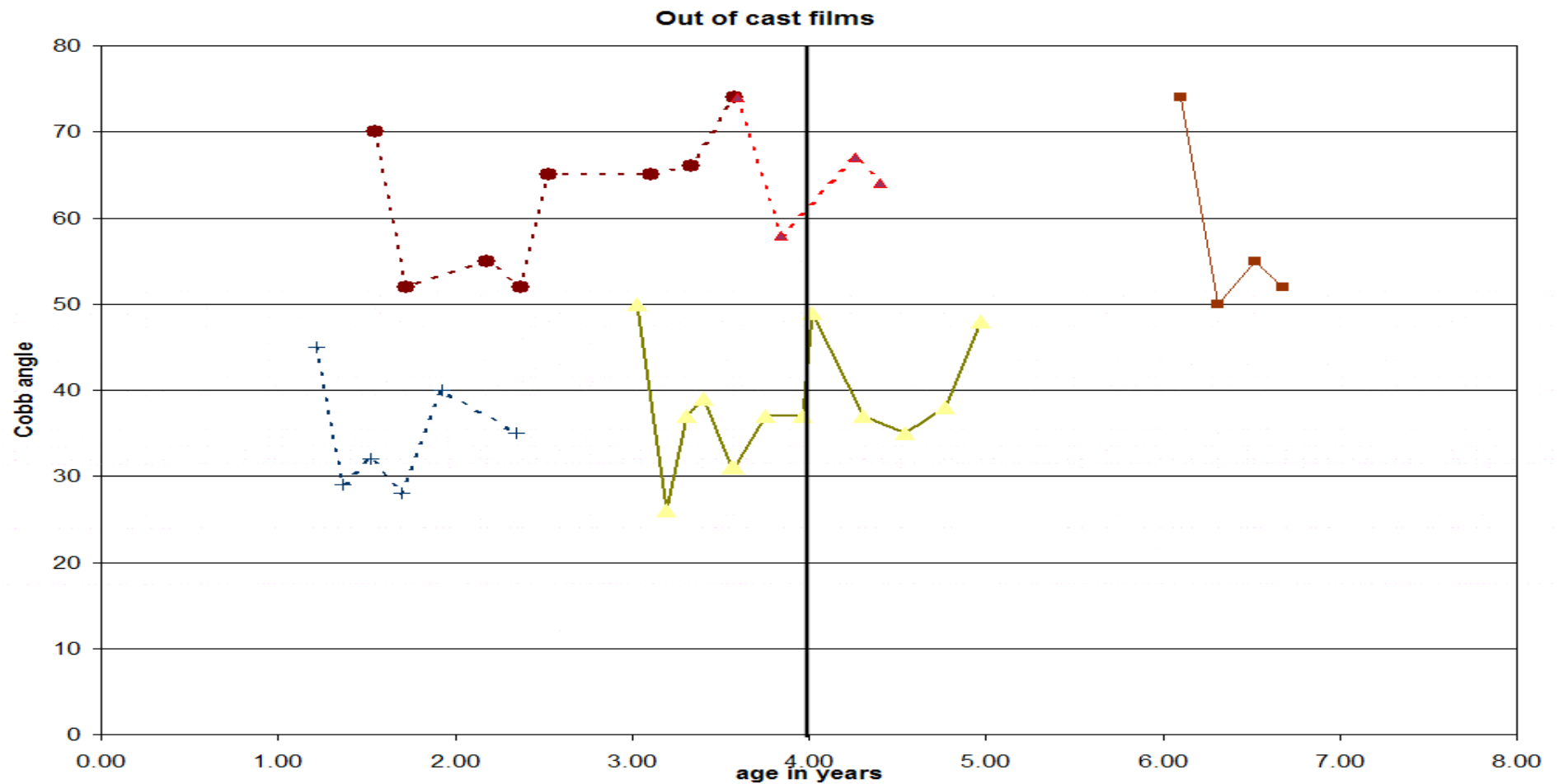
# Group I – Resolved



# Group 2 – Improved



# Group 3 (steady?) and 4 (fail)



# Pre and Post Casting

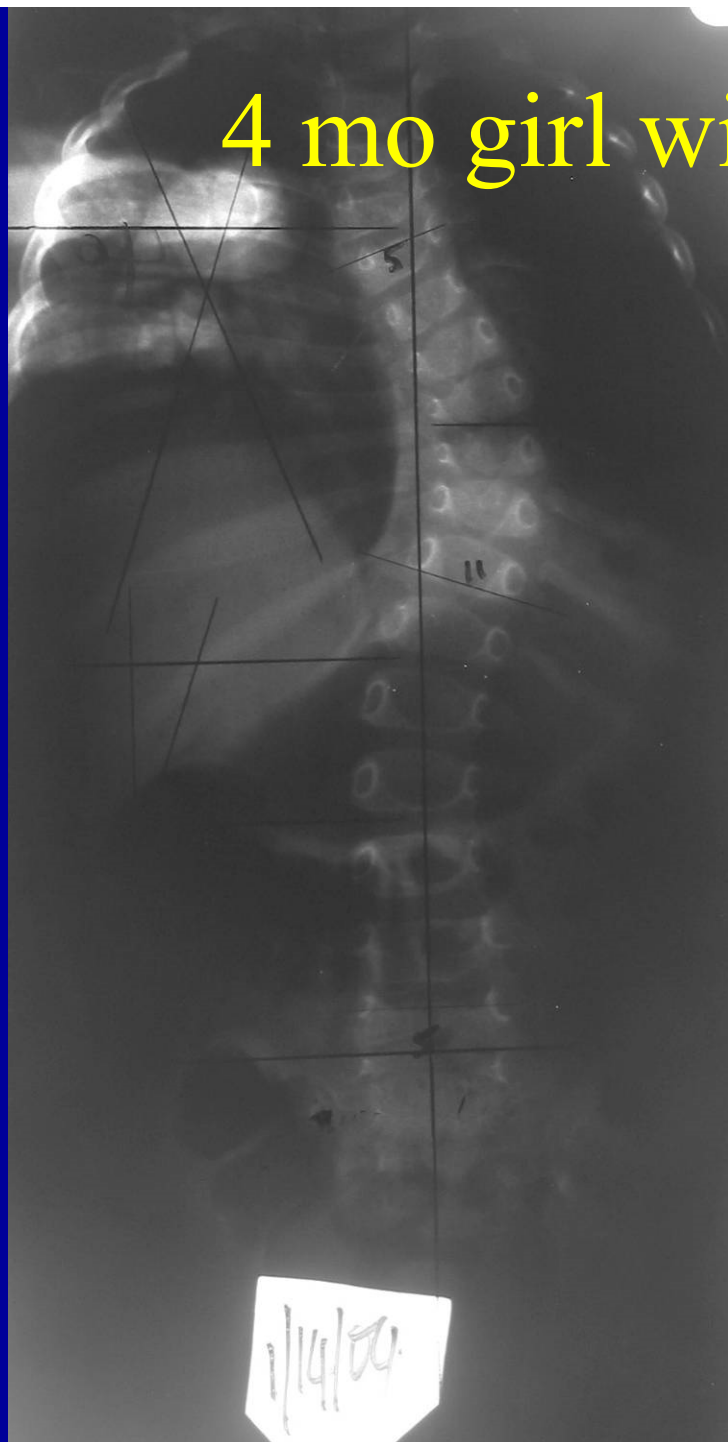


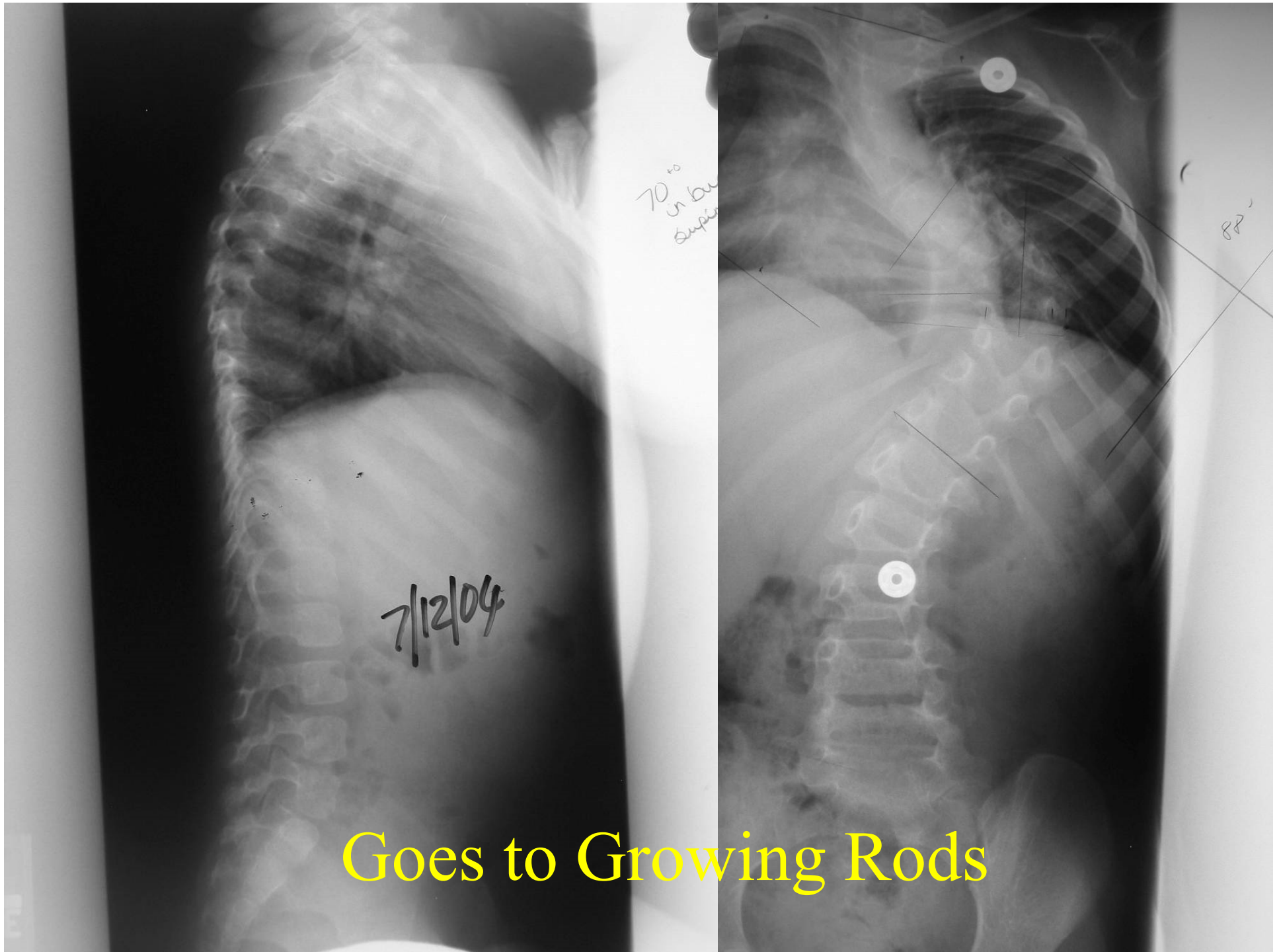
# Why is this a good result?

- Minimal to no curve?
- Normal lung function?
- Normal spine function?
- Normal appearance?
- Happy parents?
- Casting is cheap - insurance carrier happy?



# 4 mo girl with Prader Willie





Goes to Growing Rods

# Why is this a poor result?

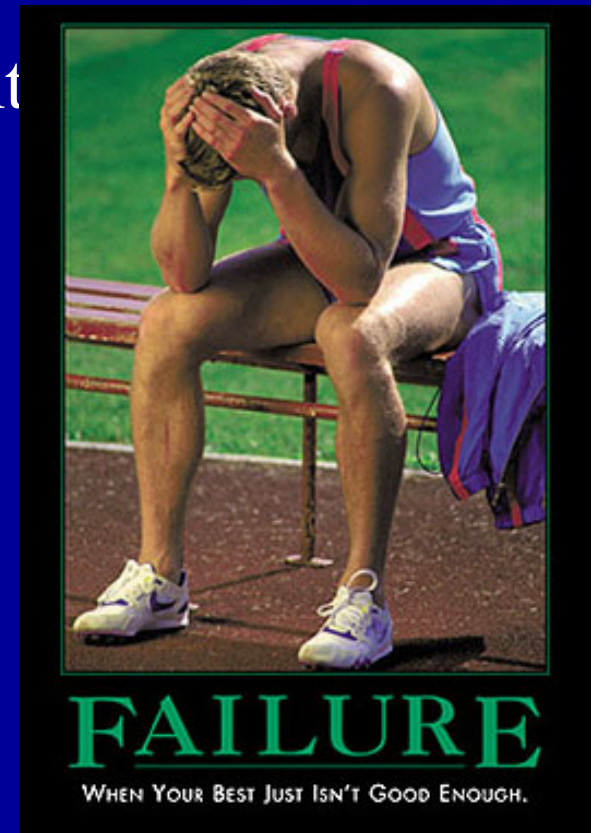
- Required surgery?
- Required early surgery, i.e., surgery was not delayed?
  - But, isn't this a surgeon decision?
- Stiff spine?
- Poor lung function?
- Still happy parents?
- Surgery is expensive – Pelosi is unhappy
  - (or maybe not)?

# What is the purpose of non-operative treatment?

- Cure when possible
- Delay other problematic treatments by maintaining reasonable alignment without:
  - Harming pulmonary status
  - Creating poor chest wall configuration
  - Creating poor spine function
- Delay can be either good or bad.

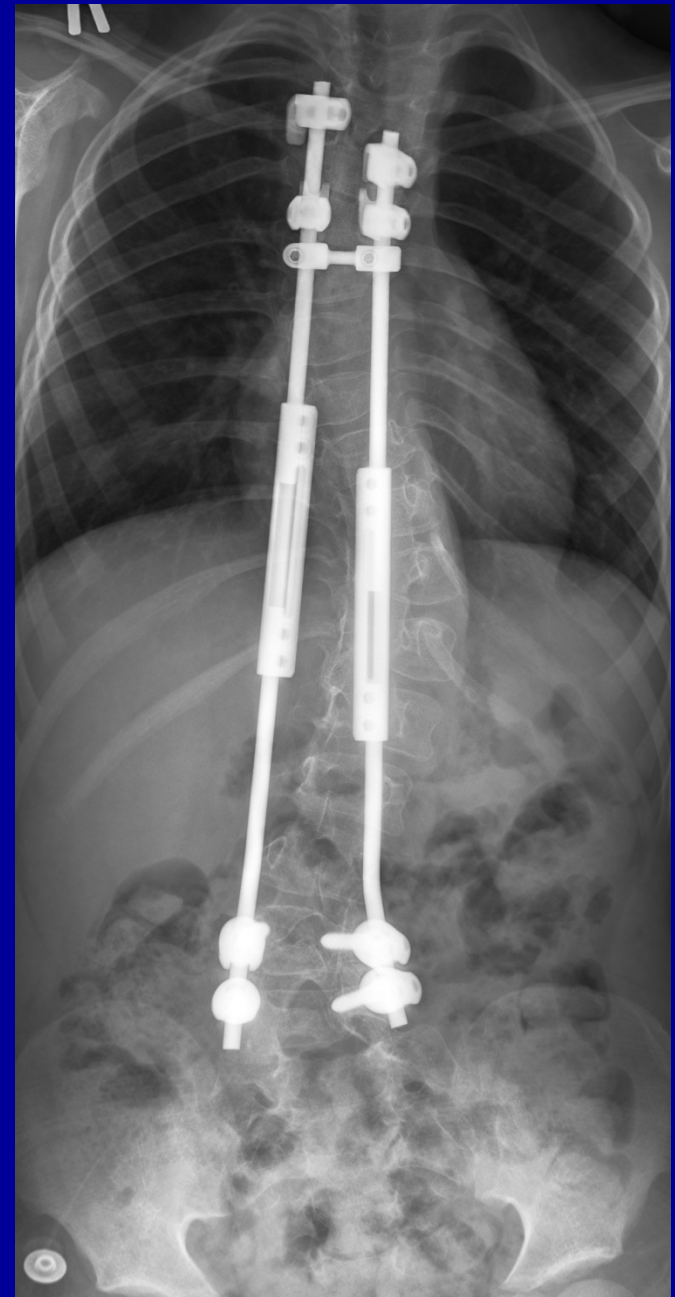
# How do we distinguish good vs. bad delay?

- This is the hard question.
- To be good, the result of non-operative treatment must be better than no treatment or early surgery.
- The distinction depends on the effectiveness of our surgery.
- If surgery is universally successful, delay is foolish.
- If the issues of diminishing returns, infection, stiff chest walls, etc. are real, then some delay is probably a real benefit.





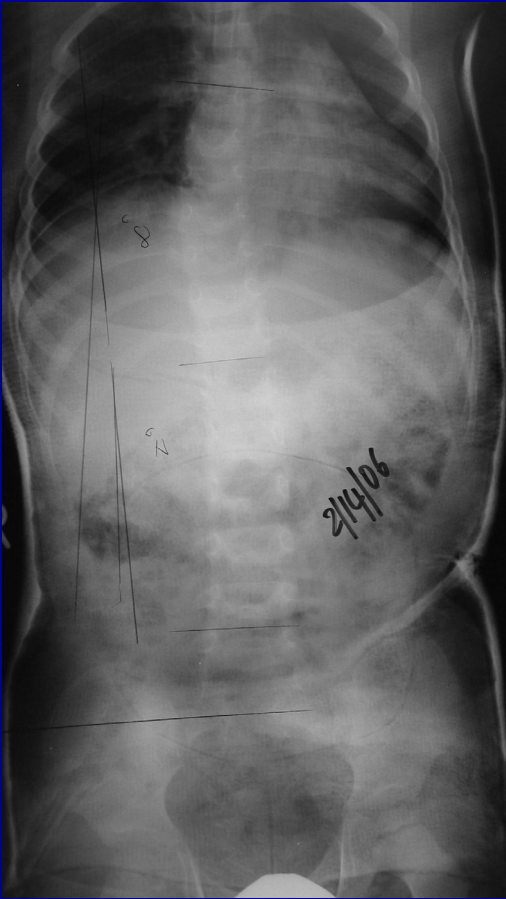
Is this a good or a  
bad result from  
non-operative  
treatment?



# Functional Outcomes

- Can we answer this with outcomes instruments?
- What do we need to measure?
  - Pulmonary based instruments, sleep studies?
  - Activity based instruments?
  - Pain, activity, appearance based instruments?
    - e.g, SRS-22
  - Other QOL or HRQOL?
- Non-operative techniques are rarely used in those who have established functional issues.
  - Minimally Clinically Important Differences (MCID) do not apply for prophylactic treatments.

# To determine good versus bad delay



Need to concurrently follow children with growing systems and those with non-operative treatment followed by fusion or growing systems.

- Lung Function
- Activity
- Appearance
- Complications

