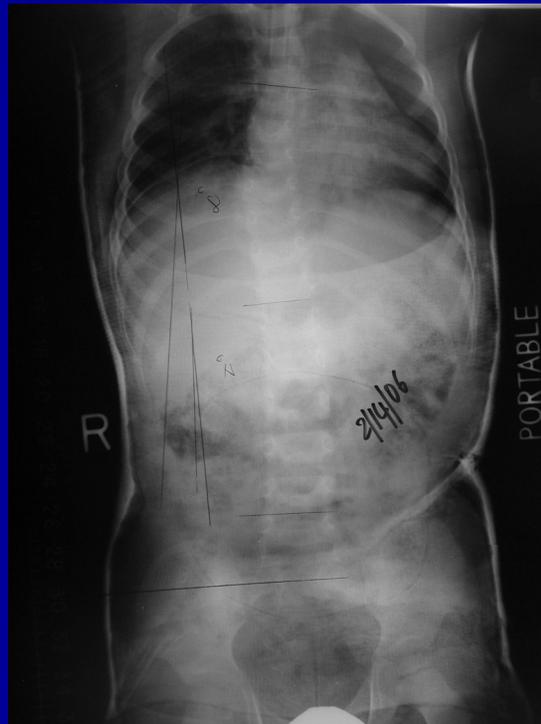


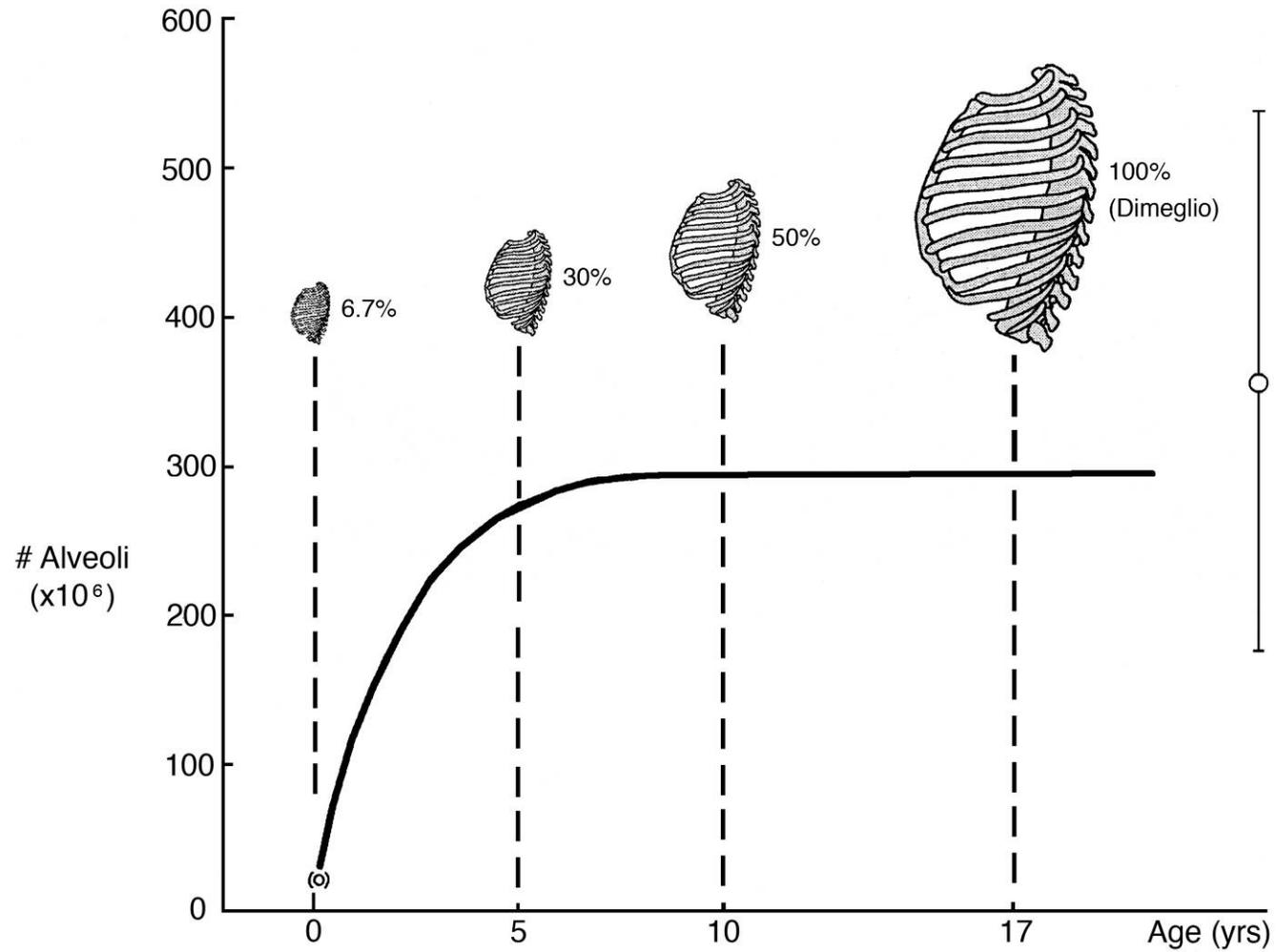
What are the appropriate outcomes for non-operative treatment of early onset scoliosis?



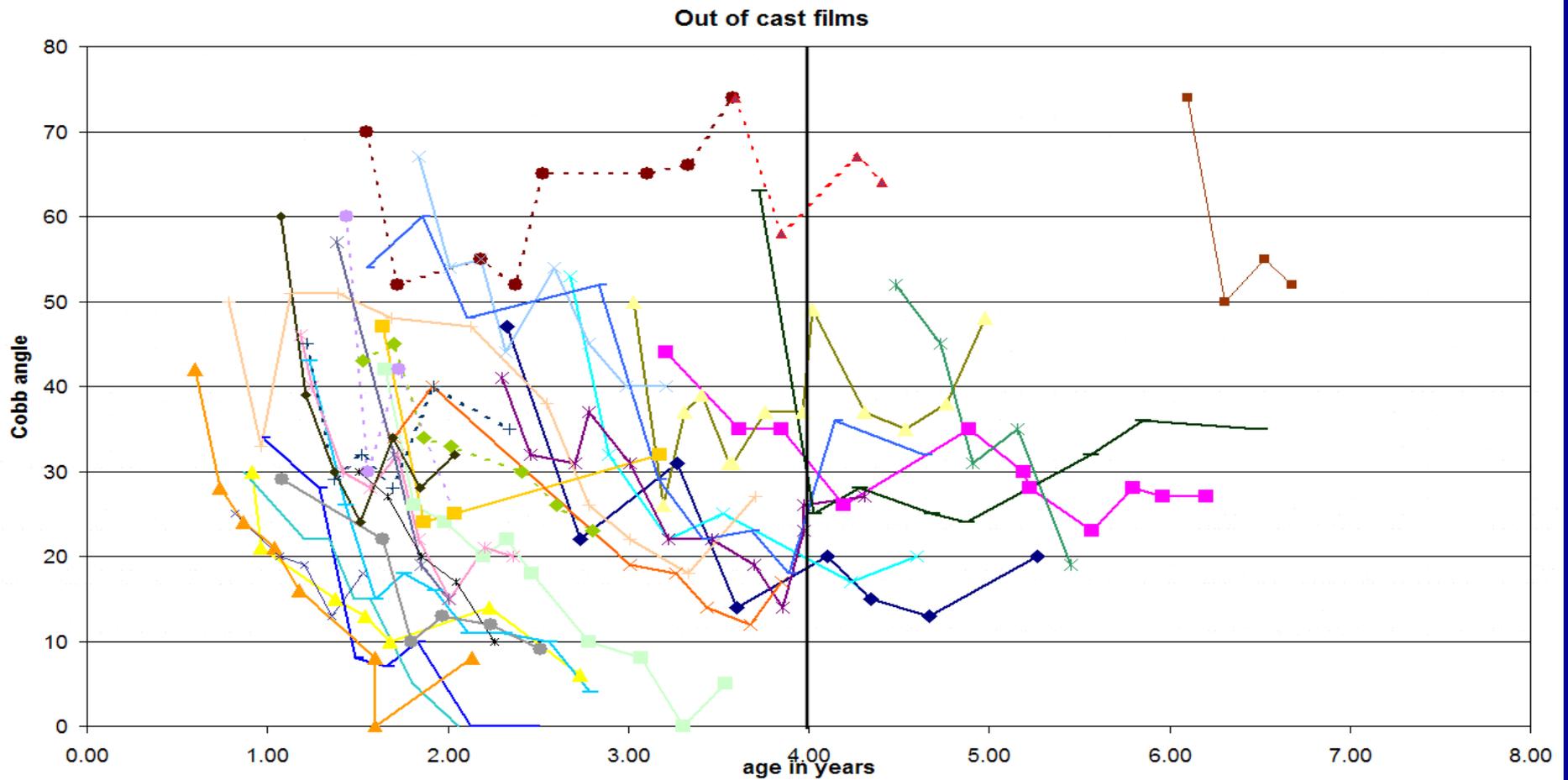
Jim Sanders, MD
University of Rochester Dept. of Orthopaedics
Golisano Children's Hospital



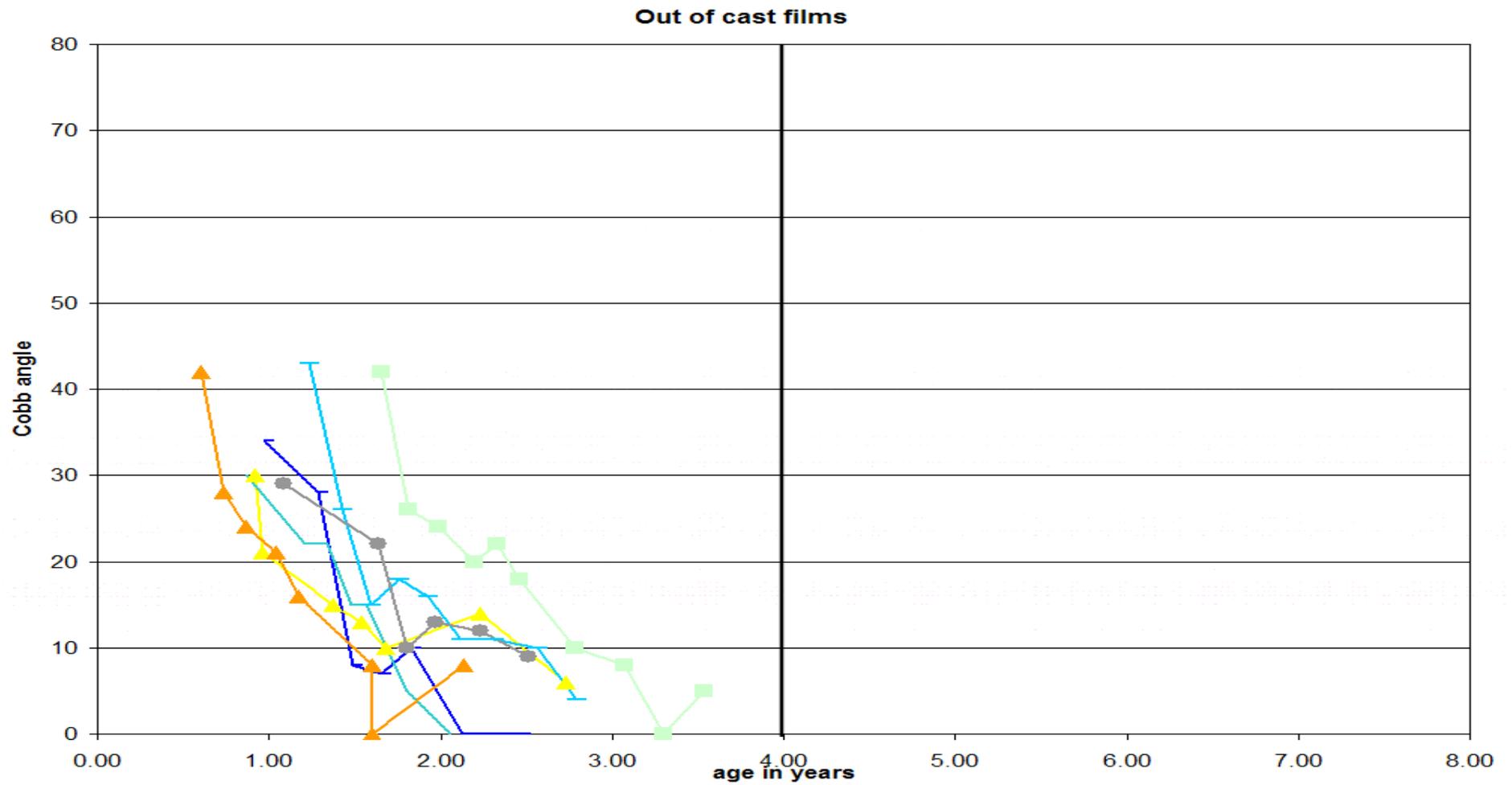
Hyperplasia + Hypertrophy



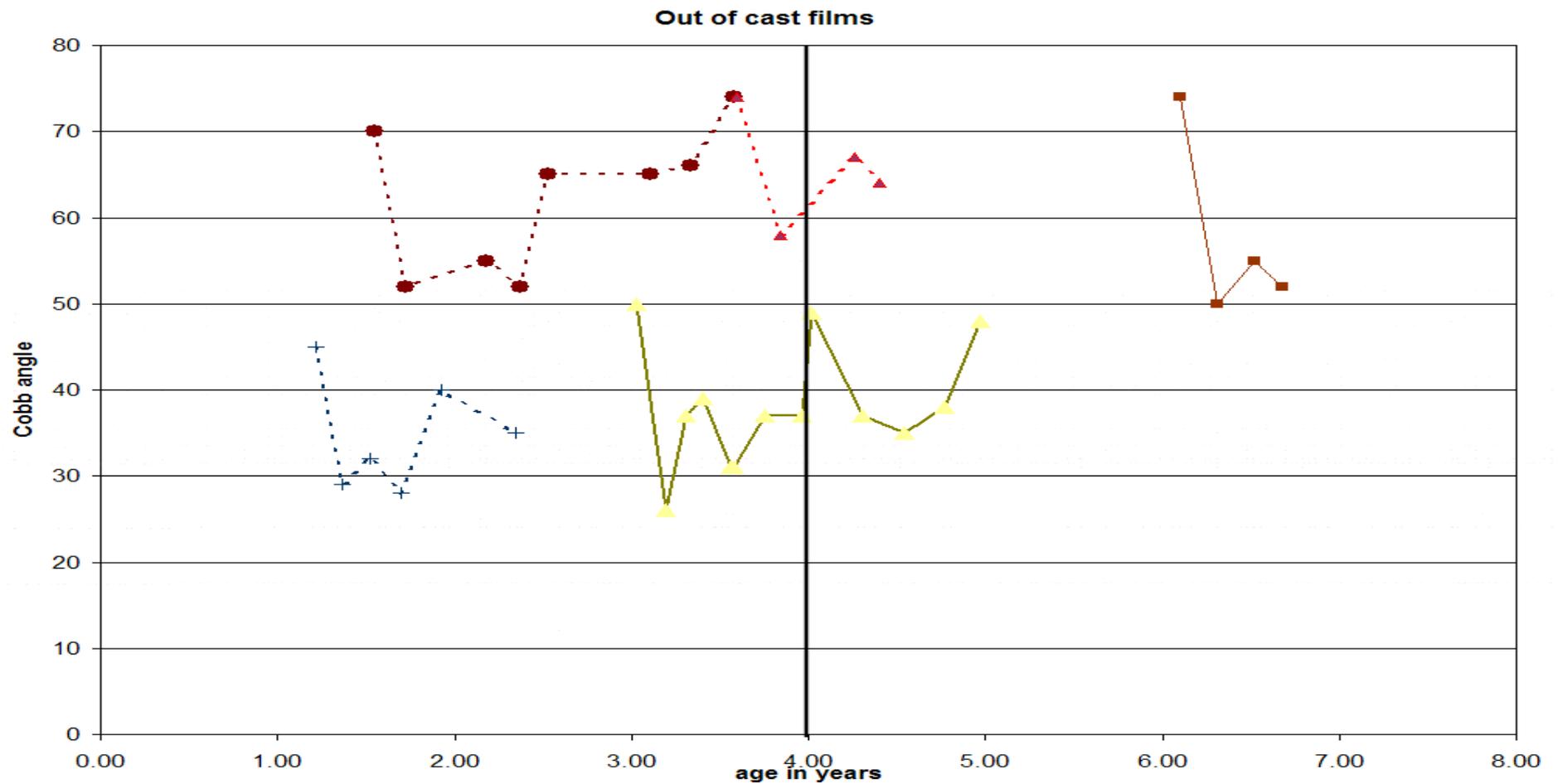
Results (Cobb Angle – All Patients)



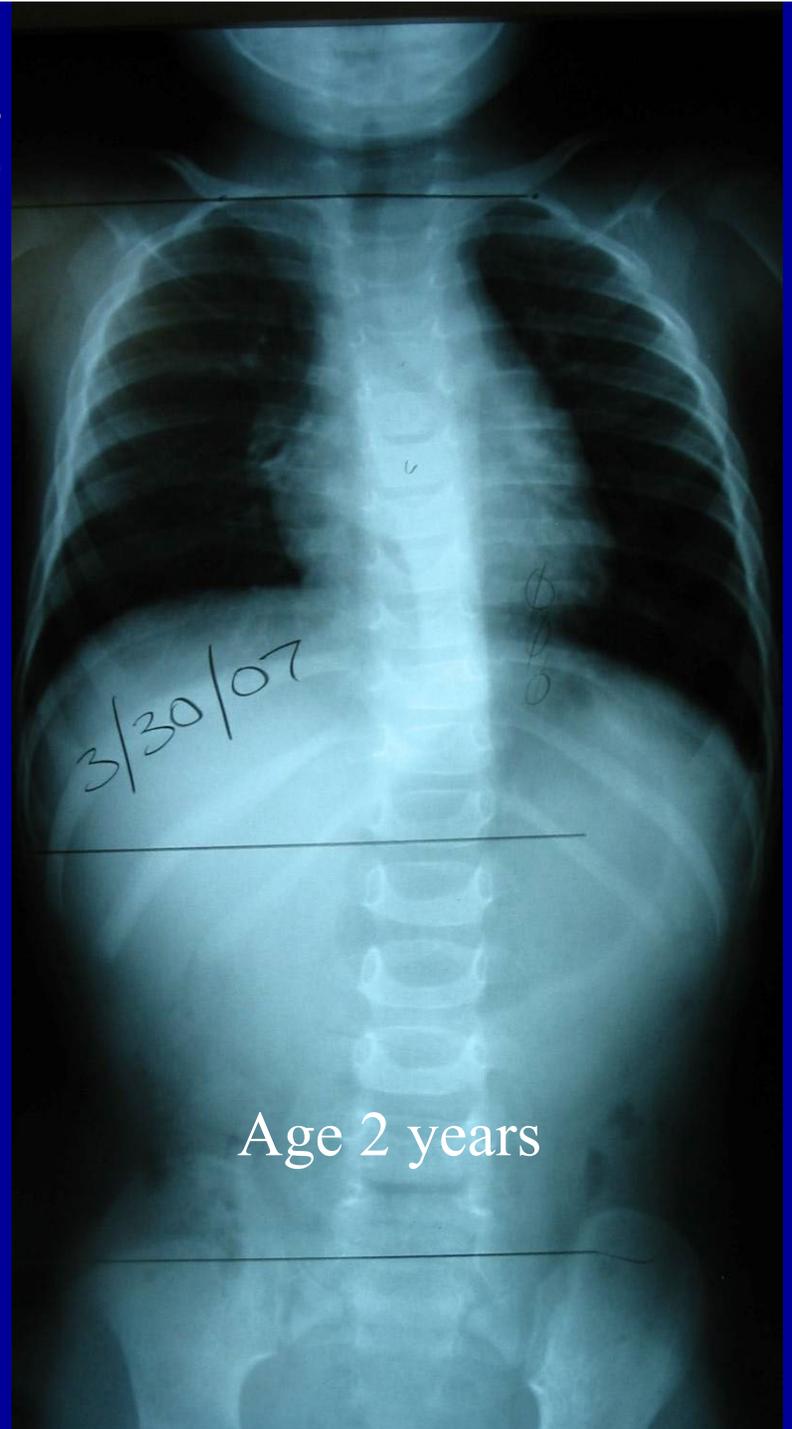
Group I – Resolved



Group 3 (steady?) and 4 (fail)



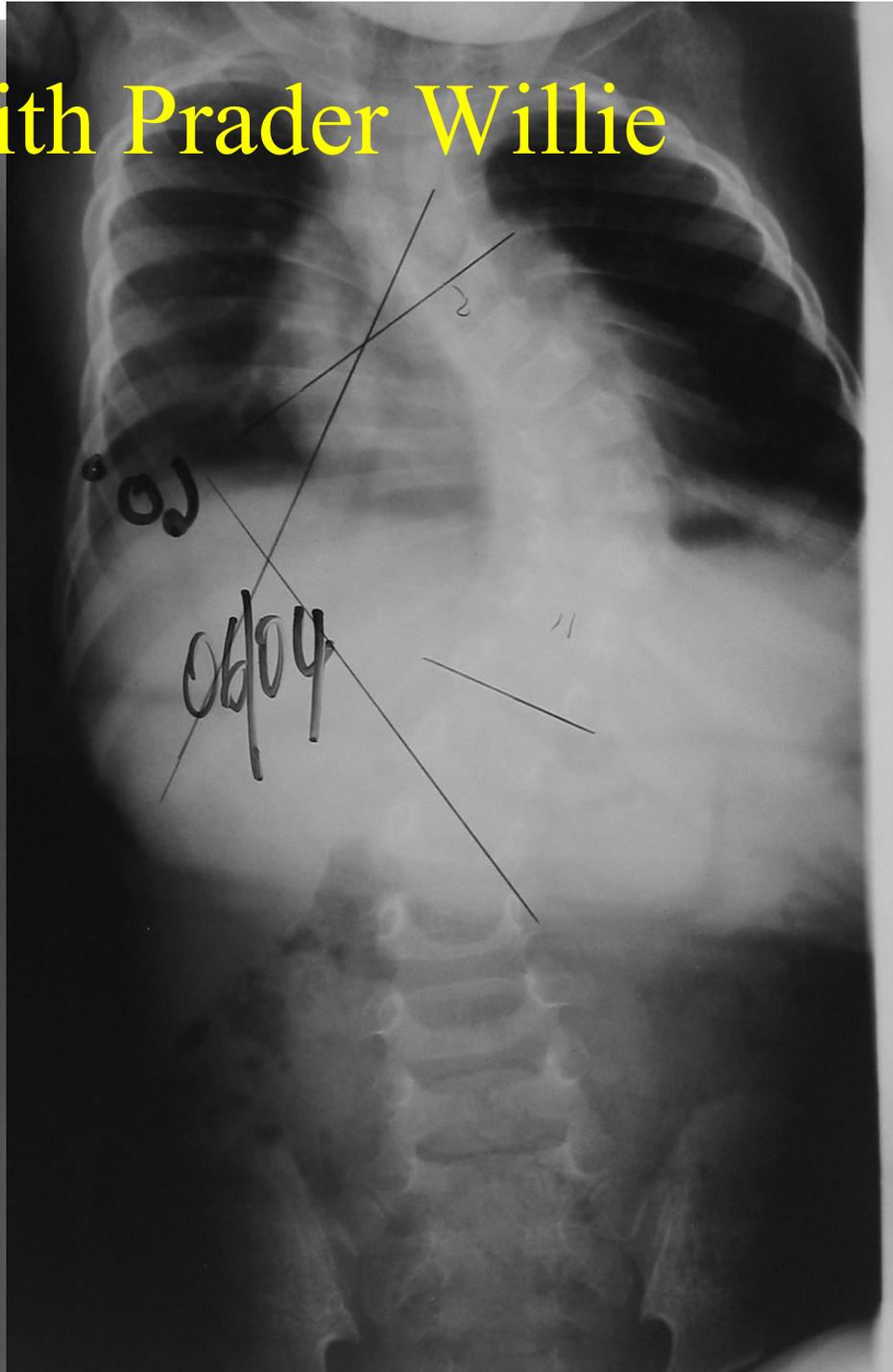
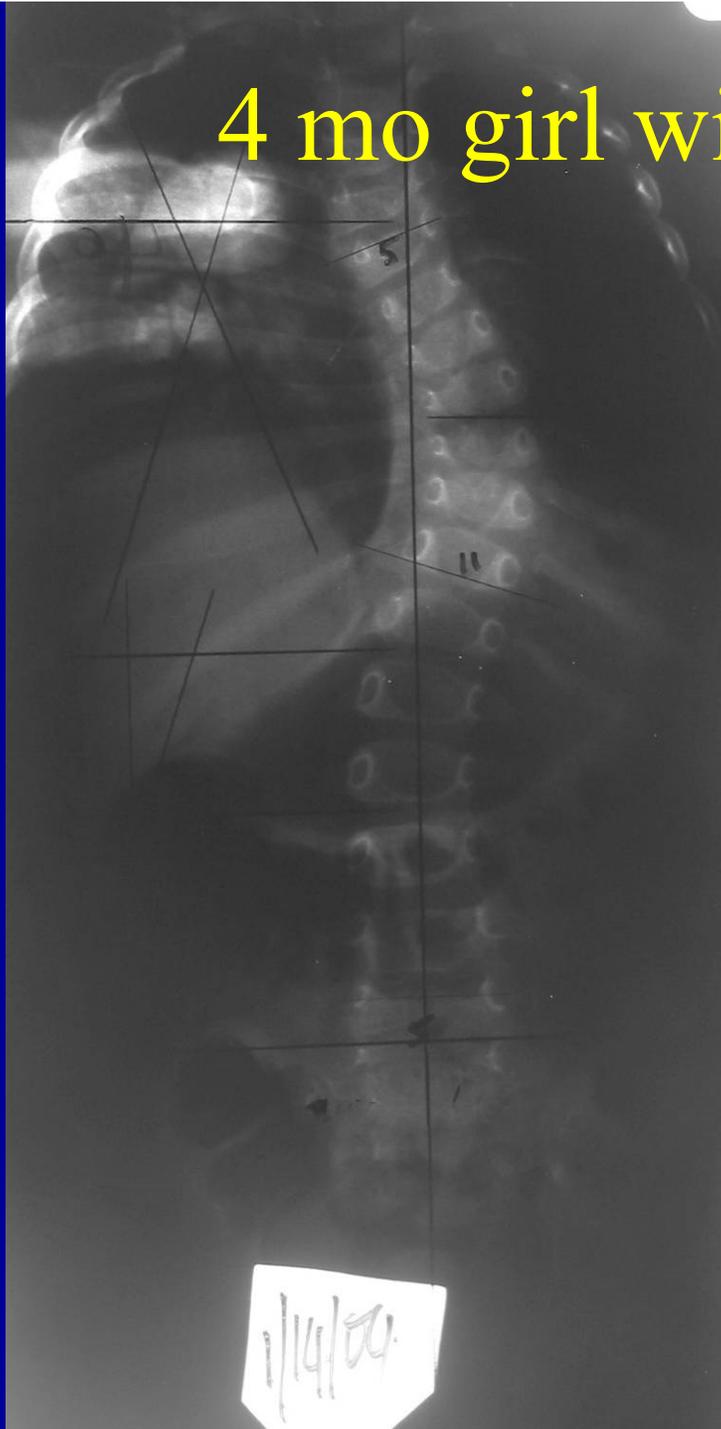
Pre and Post Casting

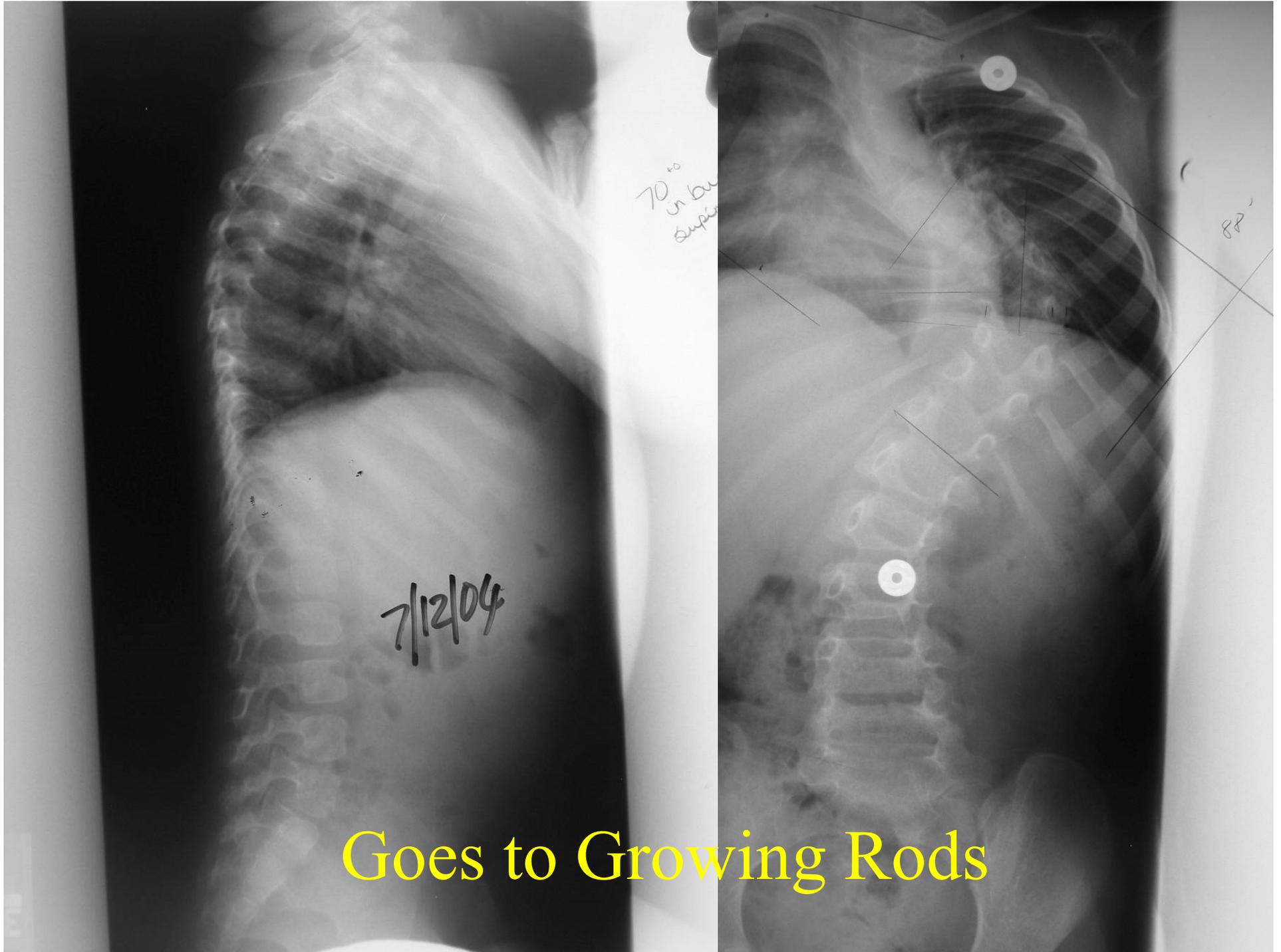


Why is this a good result?

- 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?

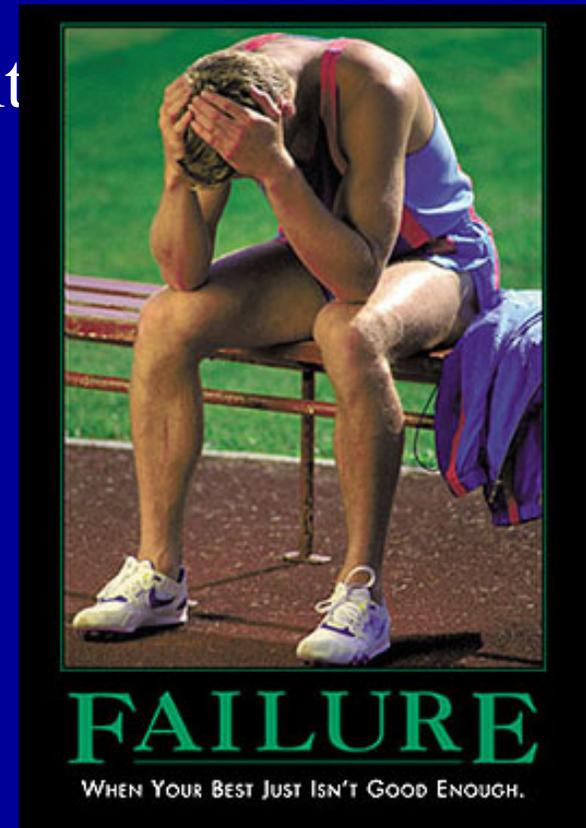
- Required surgery?
- Required early surgery, i.e., surgery was not delayed?
 - But, isn't this a surgeon decision?
- Stiff spine?
- Poor lung function?
- Still happy parents?
- Surgery is expensive – Pelosi is unhappy
 - (or maybe not)?

What is the purpose of non-operative treatment?

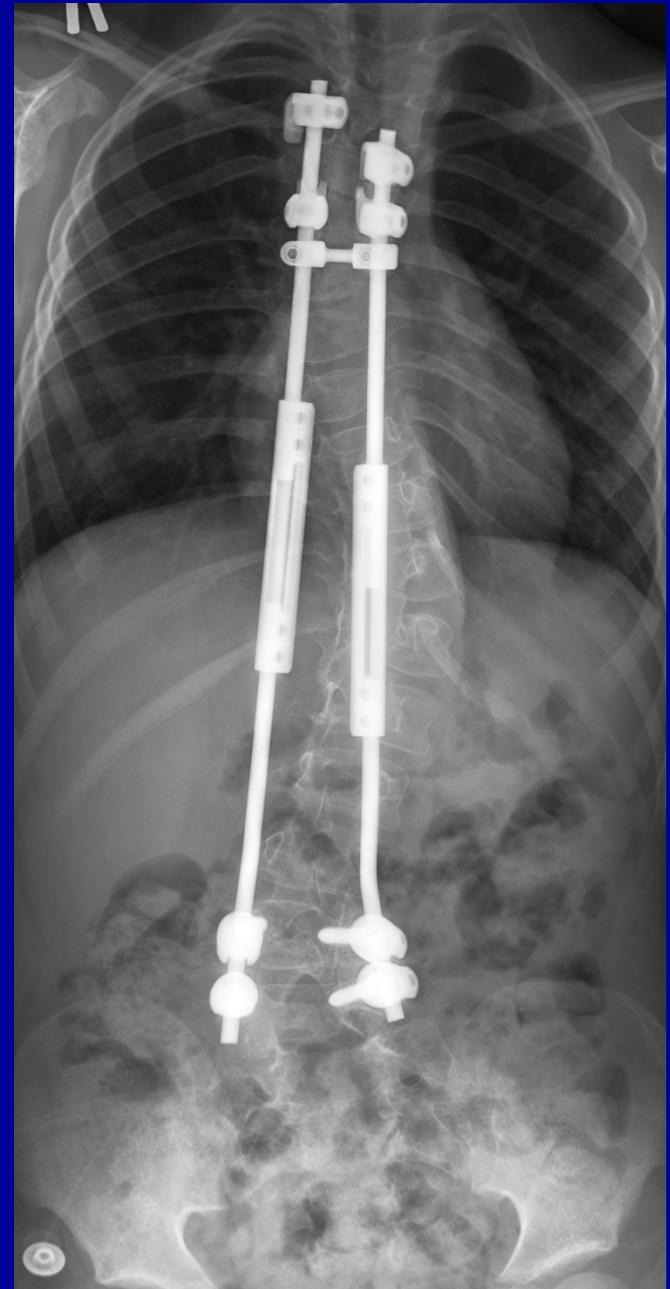
- Cure when possible
- Delay other problematic treatments by maintaining reasonable alignment without:
 - Harming pulmonary status
 - Creating poor chest wall configuration
 - Creating poor spine function
- Delay can be either good or bad.

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.



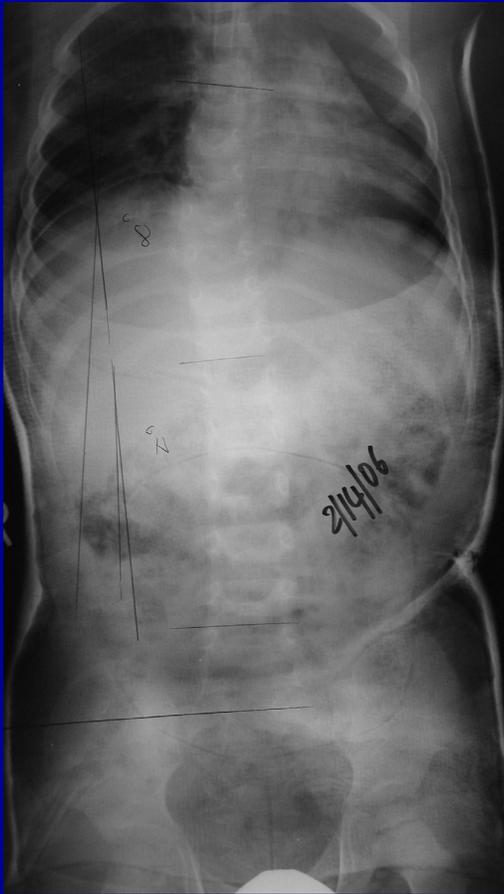
Is this a good or a
bad result from
non-operative
treatment?



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

