



University of Brescia

*Care & Research Institute
IRCCS Don Gnocchi, Milan*



isiico

ISTITUTO SCIENTIFICO ITALIANO
COLONNA VERTEBRALE

Prof. Stefano Negrini





**How
Idiopathic Scoliosis in
Adolescents (AIS)
affects
Quality of Life (QoL)
later in adult life**





Outcomes

- Primary

What impact directly on the patient life (QoL, pain, disability, aesthetics)

- Secondary

Physiological data correlated with primary outcomes (° Cobb, ATR, prominences, sagittal balance...)





Therapeutic tools

- Observation
- Scoliosis Physiotherapeutic Specific Exercises (SPSE)
- Braces: different material and dosage
 - Surgery





Scoliosis



Methodology

Open Access

Why do we treat adolescent idiopathic scoliosis? What we want to obtain and to avoid for our patients. SOSORT 2005 Consensus paper

Stefano Negrini*¹, Theodoros B Grivas², Tomasz Kotwicki³,
Toru Maruyama⁴, Manuel Rigo⁵, Hans Rudolf Weiss⁶ and the members of the
Scientific society On Scoliosis Orthopaedic and Rehabilitation Treatment
(SOSORT)⁷



Negrini et al – Scoliosis, 2006





Aesthetics	Aes	1
Quality of life	QoL	2
Disability	Dis	3
Back Pain	BP	4
Psychological well-being	PWB	5
Progression in adulthood	PiA	6
Breathing function	BF	7
Scoliosis Cobb degrees	SCD	8
Needs of further treatments in adulthood	NTA	9
Rib hump	RH	10
Self control of posture		11
Perdriolle degrees	PD	12
Knowledge and understanding of scoliosis		13
Movement of the vertebral column		14
Kypho-lordosis Cobb degrees	KLD	15
Balance		16
Body motor awareness and learning skills		17
Sensory motor integration of the corrective pattern		18
Improved processing of vestibular input		19
Equality of weight bearing		20
Exercise efficiency		21





Determinants of QoL

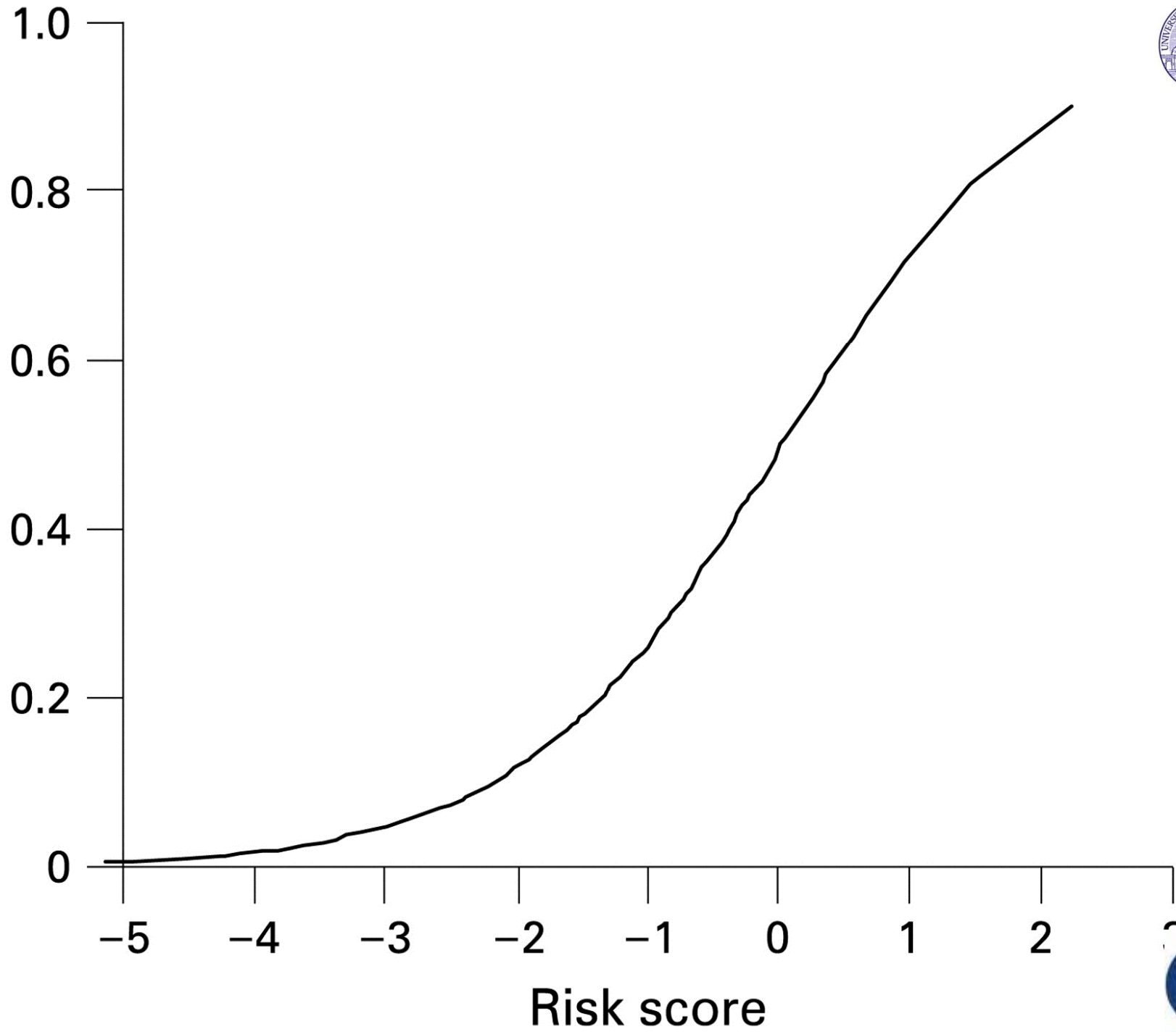


- Cobb degrees and their meaning for adult life
 - Treatments performed during growth
 - Other spinal parameters





Probability of major sequelae





Scoliosis thresholds

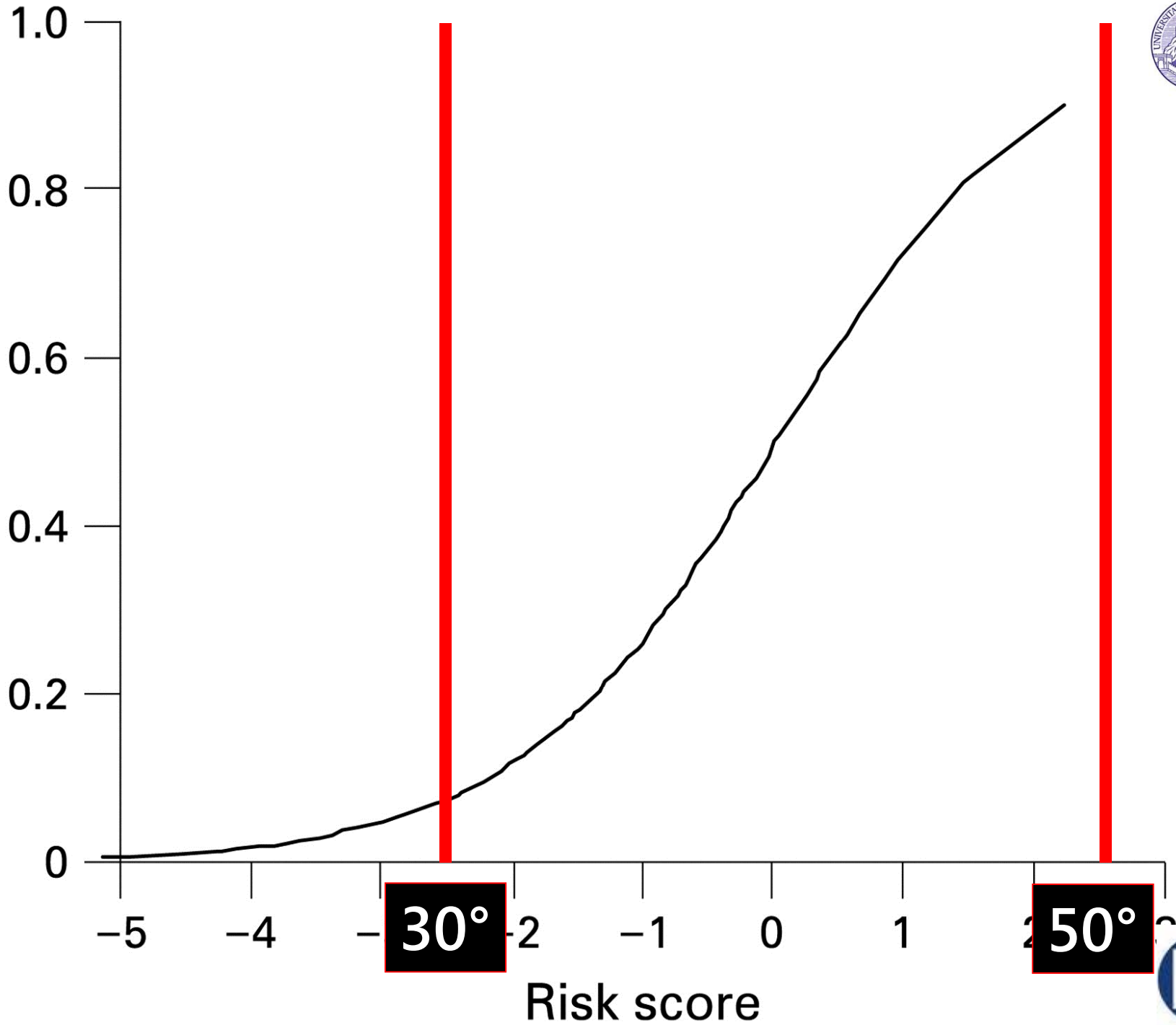


- 10° Cobb: diagnosis
- 30° Cobb: increased risk of problems in adulthood
(pain, progression, deformity)
- 45°-50° Cobb: usually considered surgical threshold



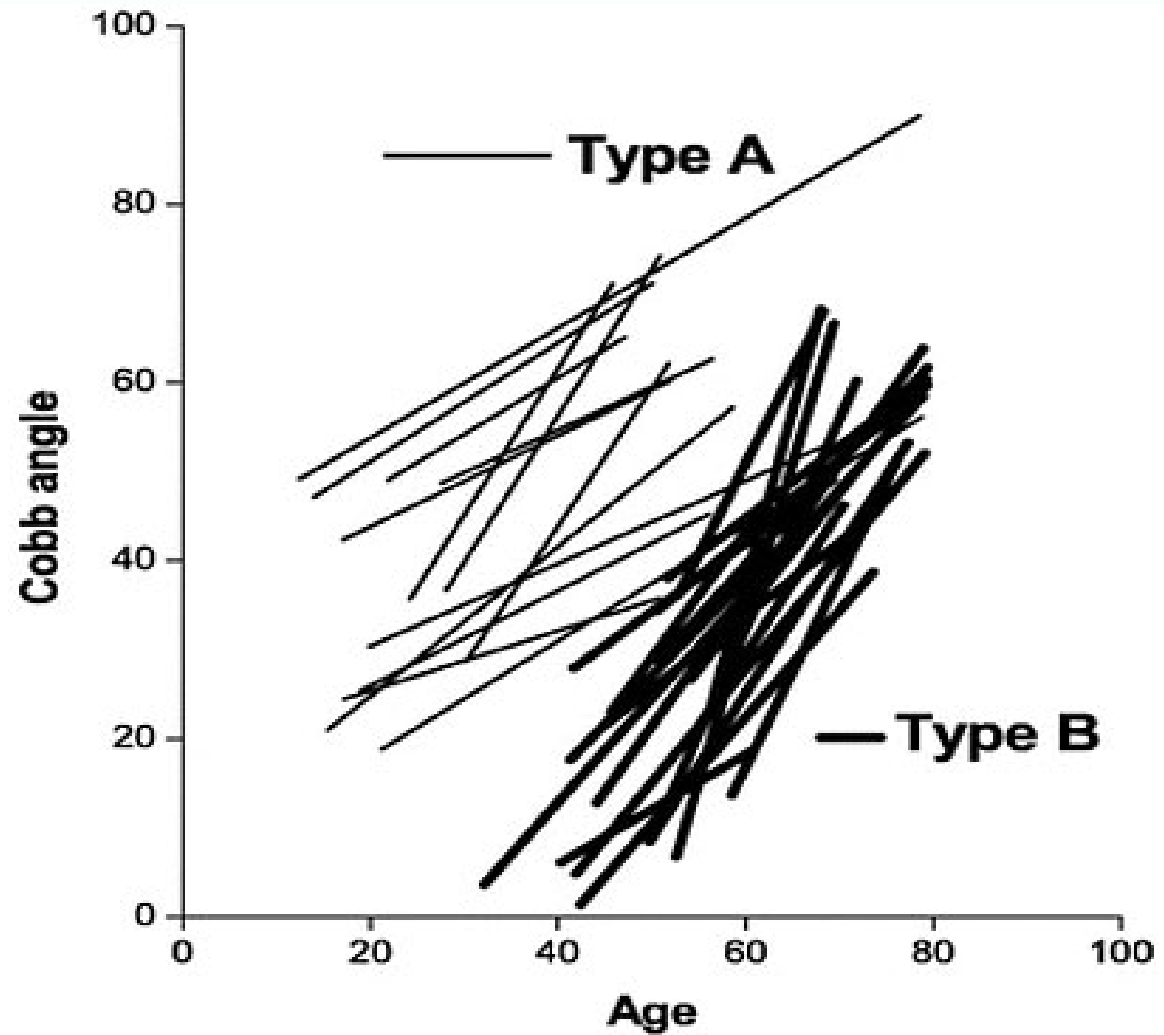


Probability of major sequelae





Progression in adults



Marty-Poumarat et al – Spine 2007





Long term (16y) **Braced** vs **normals**

- QoL: no differences
- Body appearance: Worst in **braced**





Long term (>20y)

Fused vs braced vs normals

- +Progression: 3.5°, 7.9°*
- +Vital capacity: 10.8%, 12.3%
- -Sexual function: limitation 33%, 28%*, 15%*;
 - -Childbirth: vacuum 16%, 8%*, 5%*;
- -QoL: only Social Function 49%, 34%*, 15%*
- +LBP: VAS 2.4, 2.7; prevalence 65%, 75%, 47%*; sick leave 45%, 20%*, 19%*





Determinants of QoL



SRS-Schwab Adult Spinal Deformity Classification

- Pelvic Tilt (PT) 22° or more
- Sagittal Vertical Axis (SVA): 47mm or more
- Pelvic Incidence – Lumbar Lordosis (PI-LL): 11° or more

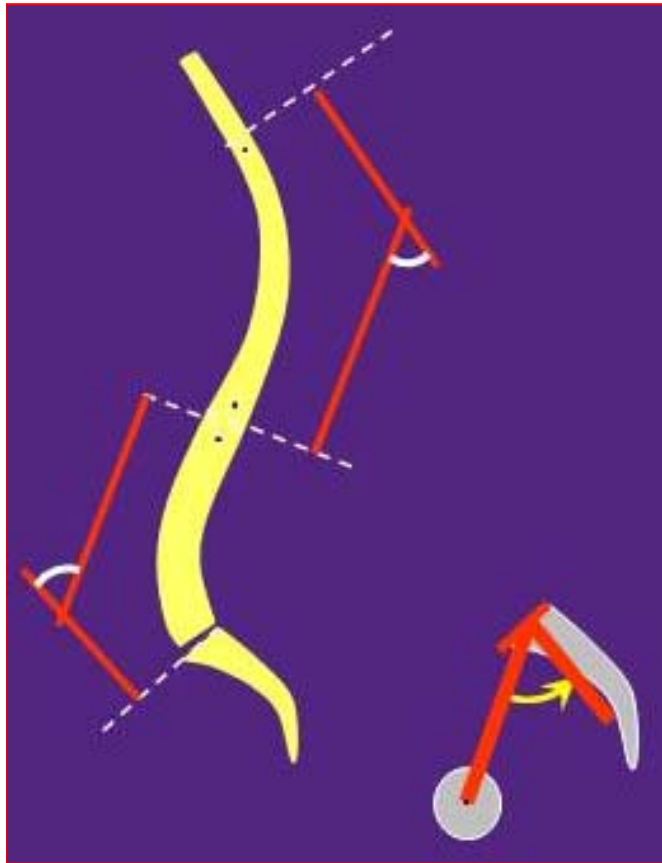


Schwab et al – Spine 2013

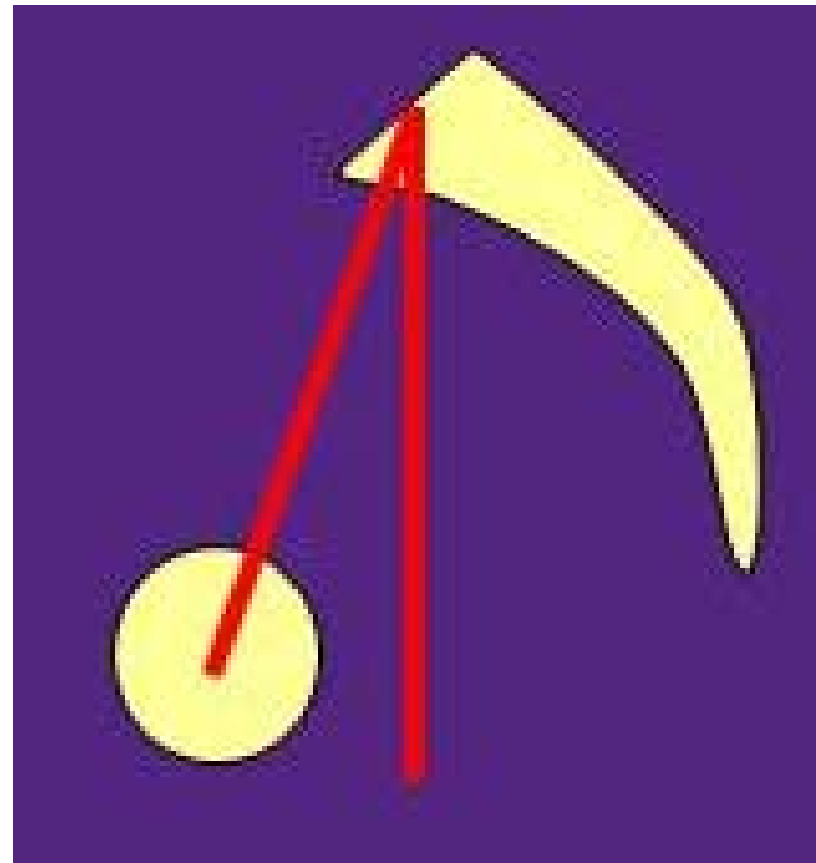




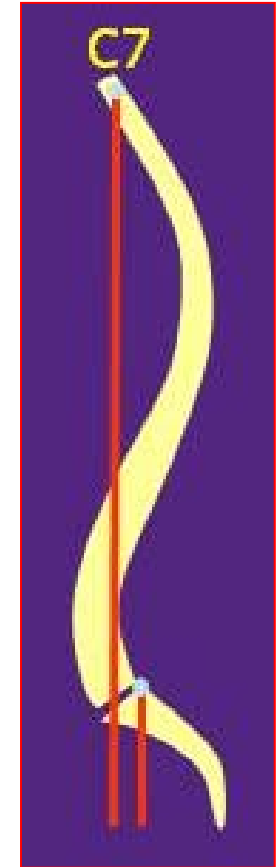
SRS-Schwab Adult Spinal Deformity Classification



$PI-LL > 10^\circ$



$PT > 21^\circ$ $SVA > 47 \text{ mm}$



Schwab et al – Spine 2012





SRS-Schwab Adult Spinal Deformity Classification



Coronal curve type

T: Thoracic $<30^\circ$

L: Lumbar or Thoracolumbar $<30^\circ$

D: Double Curve with T and TL/L $>30^\circ$

N: No major coronal deformity $<30^\circ$

PI-LL

0: within 10°

+: moderate $11-20^\circ$

++: marked $>20^\circ$



Global alignment

0: SVA <4 cm

+: SVA $4-9.5$ cm

++: SVA >9.5 cm

Pelvic Tilt

0: PT $<20^\circ$

+: PT $20-30^\circ$

++: PT $>30^\circ$

Schwab et al – Spine 2012





Conclusion

- QoL is the main aim of treatment
 - We do not treat an x-ray
- We treat patients for their adult life
- We impair actual QoL for future QoL
- We must treat now, but taking care of the future (psychological approach)





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Thank you

Stefano Negrini
stefano.negrini@unibs.it



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