

ADULT SCOLIOSIS TREATMENT COMBINING BRACE AND EXERSICES

Dimitris G. Papadopoulos, MD, CPO

Orthopaedic Surgeon



Wearing a brace or performing exercises in adult scoliosis are well known methods of conservative treatment in adult scoliosis.

But the association of these two methods was not investigated.

The aim



MATERIALS AND METHODS

Protocol from April 2009 through December 2012

144 Adults

123 ♀

21 ♂



Age

19 - 84 y average 40.8 y



Cobb angle

18 ° - 87 ° average 40.6°

All patients had a degree
of pain



Brace Wearing time: > 8h / day



Schroth & SEAS exercises:

> 50 min / day



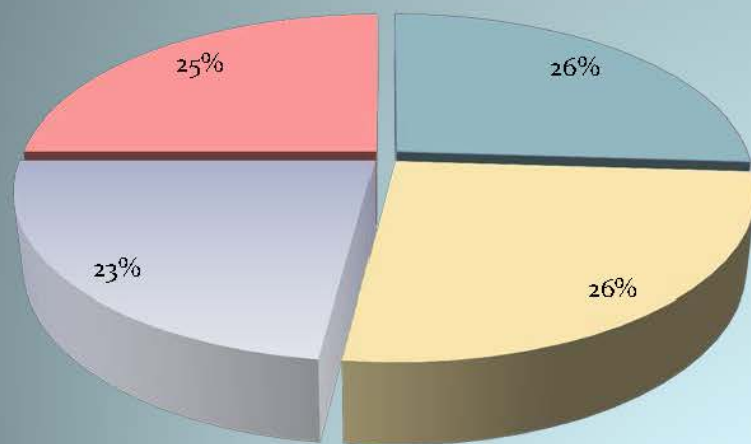


Follow up: **every 3 months**

Duration: **2 years.**

RESULTS

144 patients



37 26% didn't follow the program

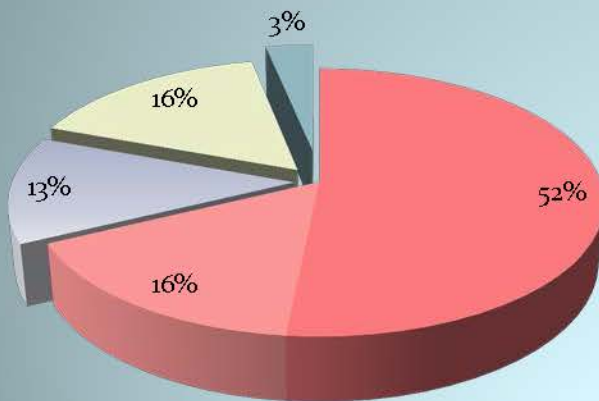
37 26% they followed for a few months

34 23% they are continuing but inadequately

36 25% followed it accurately

68% had no pain or mild pain after treatment,

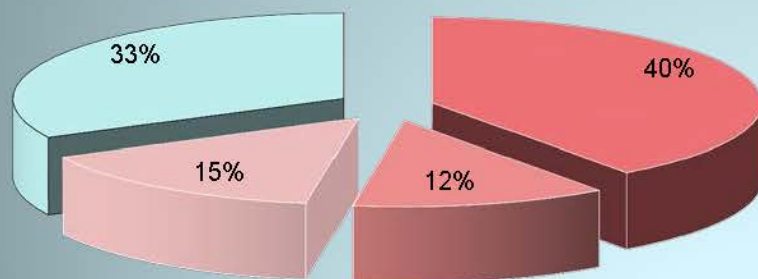
Pain scale



- 0. I have no pain at the moment
- 2. The pain is mild at the moment
- 3. The pain is fairly severe at the moment
- 4. The pain is very severe at the moment
- 5. The pain is the worst imaginable at the moment

67% had improvement of the posture and appearance.

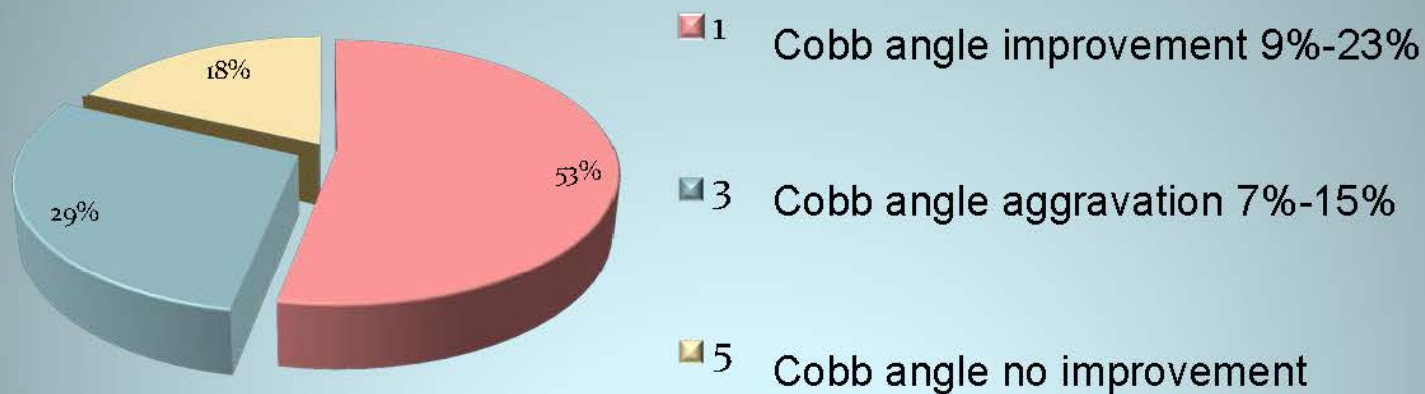
Posture and appearance



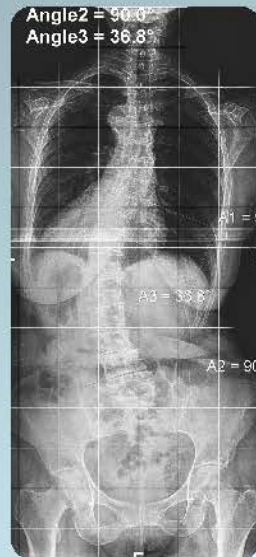
- ☒ There is a noticeable difference of my body
- ☒ My body looks better except if I am exhausted
- ☒ There is a difference but is less than what I was expected
- ☐ I can't see a difference of my body

53% of the patients had an improvement of the Cobb angle

Cobb angle

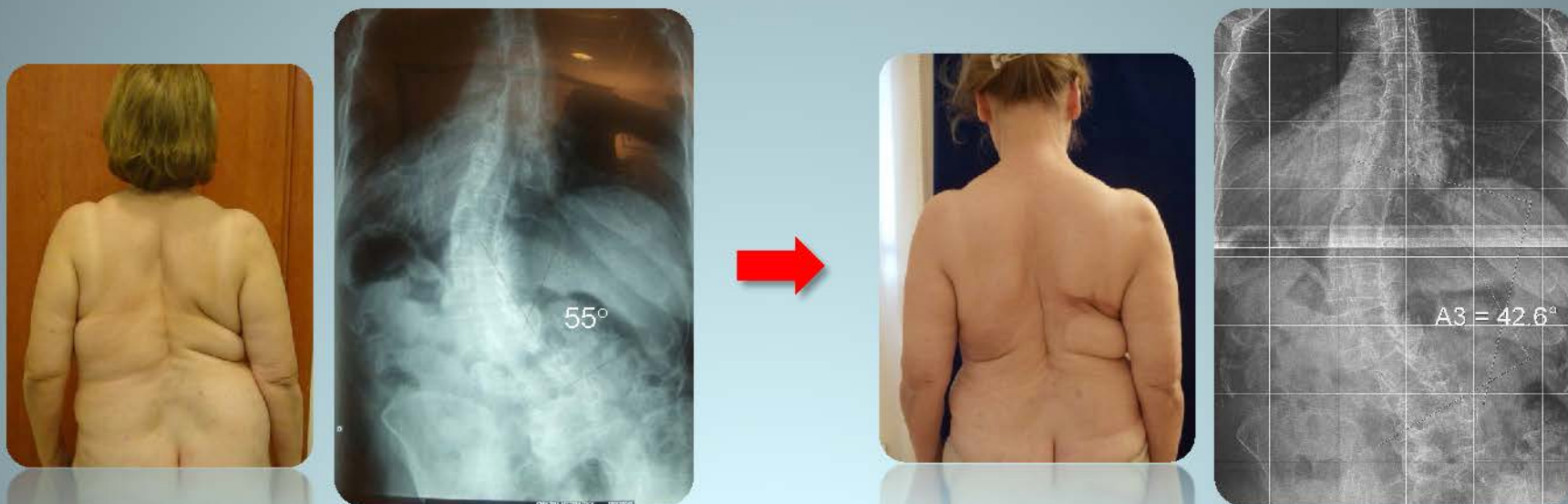


72 years old woman 36.8° initial cobb angle full program



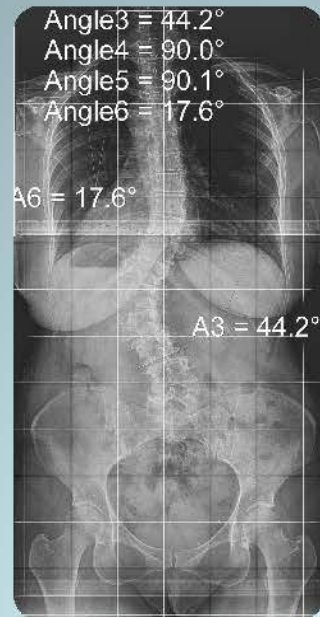
After 2 years of therapy 28.8°

66 years old woman 55° initial Cobb angle **full program**



After 1 year of therapy 42.6°

52 years old woman 44.2° initial Cobb angle **full program**



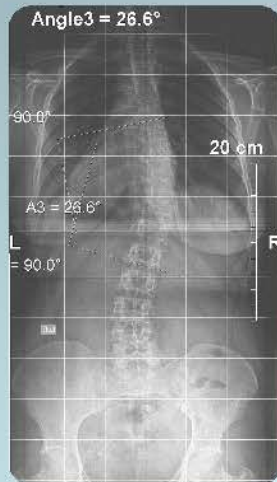
After 1 ½ year of therapy 34°

34 years old woman 36.6° initial Cobb angle **only brace**



After 1 year No pain & better posture

35 years old woman 26.6° initial Cobb angle **only brace**



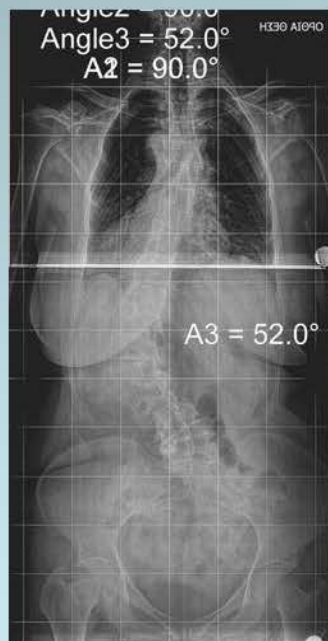
After 3 years 21.7° No pain & better posture

73 years old woman 44.2° initial Cobb angle **only brace**



After 8 months No pain & better posture

57 years old woman 52° initial Cobb angle **only exercises**

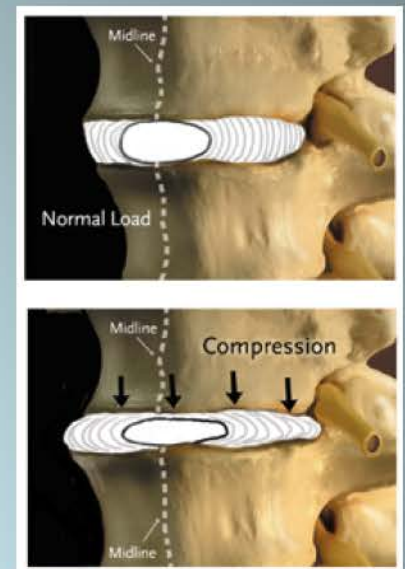


After 1.9 years No pain & better posture

DISCUSSION

A loss of the Intervertebral disk's height is considered early sign of IVD degeneration.

Karin Wuertz et al J Orthop Res. 2009 September;27(9):1235-1242



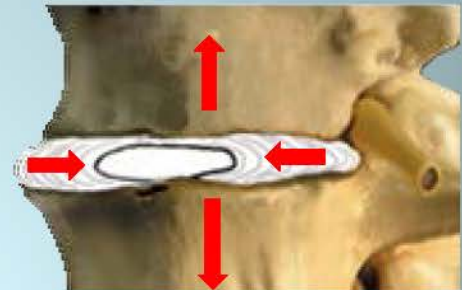
Recovery of the disc height =

magnitude and duration of the applied load

unloaded recovery

surrounding environment (muscles and ligaments)

O'Connell G.D. et al. J Mech Behav Biomed Mater. 2011 October; 4(7):933-942



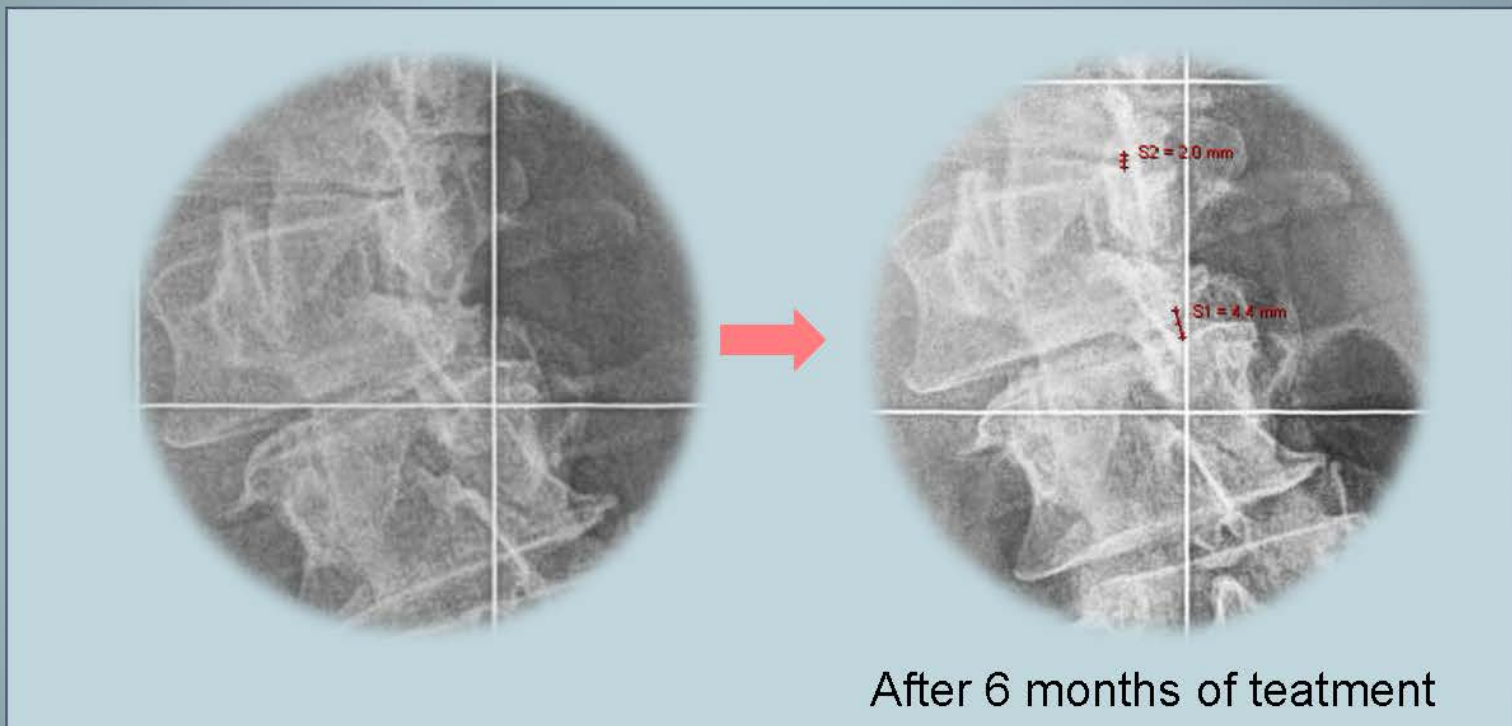
Physical activities might be able to promote repair or postpone disc degeneration

Karin Wuertz et al J Orthop Res. 2009 September;27(9):1235-1242

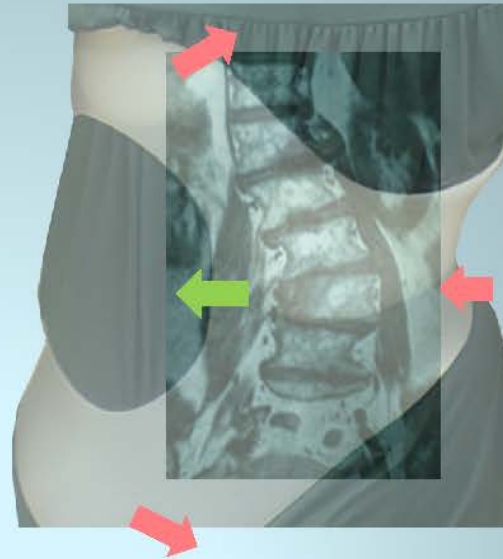
Cyclic compression (= physical activities) may cause less harm to the disc than static compression

Schnake K.J et al. Eur Spine J (2006) 15 (suppl.):S354-360

The use of Schroth Method (asymmetrical exercises)
leads to the
temporary decompression of the intervertebral disks.



For stabilizing the stretch effect
at the ligaments and the intervertebral disks
we have fit a special designed **brace**
for at least 8 hours





Exercises only or brace

in some cases
decreases the pain and/or improves the
posture



but the **major improvement** is achieving
using both,
brace more than 8 h/ a day after the
exercises.

The combination of Schroth and SEAS
maximizes the results.

CONCLUSION



Schroth and SEAS methods
combination
and fitting of a special brace
(after the exercises)
gives **excellent results**.

The program it is hard for adult
with a lot of obligations and
that's the reason of the
abandonment of the treatment,
despite the improvement



Thank you