

# Clinical Improvement Through Nonoperative Treatment of Adult Spinal Deformity: Who Is Likely to Benefit?

caroline poorman; Kseniya Slobodyanyuk; Justin S. Smith MD PhD; Themistocles Protopsaltis MD; Richard A. Hostin MD; Shay Bess MD; Gregory Mundis MD; Frank Schwab MD, PhD; Virginie Lafage PhD; ISSG



## Introduction

While surgery has been shown on average to be superior to nonoperative treatment for significant adult spinal deformity (ASD), nonoperative care remains a good option for many patients. Our objective was to determine the outcome of ASD patients who elected for nonoperative care.

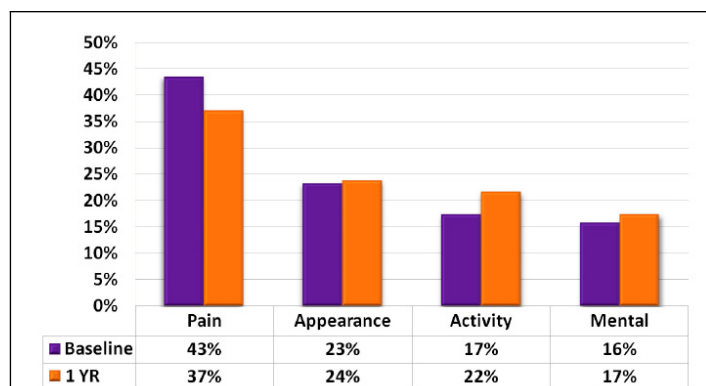
## Methods

Retrospective review of nonoperative branch of a multicenter prospective database of ASD patients. Only patients with baseline (BL) and 1yr SRS-22 and radiographic data were assessed. Changes in SRS-22 were evaluated by domain and expressed in number of minimal clinically important differences (MCIDs) gained/loss; BL and 1yr scores were compared to age- and gender-matched normative references (NR).



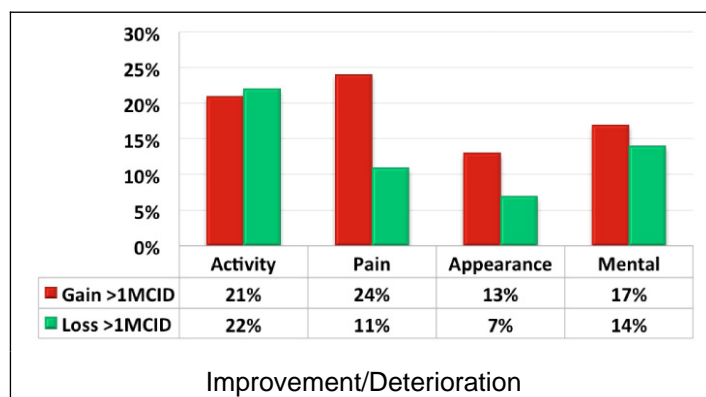
## Results

189 patients (mean=53yo) met criteria. At BL, Pain was the domain with the largest offset from NR for 43% of patients, followed by Appearance (23%) and Activity (17%).



SRS domain with largest difference with normative values

Analysis of change in the Pain domain at follow-up revealed that 24% of patients gained (improvement) >1MCID and 11% lost >1MCID. Percentages with gain or loss for Activity were 21% and 22%, and for Appearance were 13% and 7%, respectively.



Patients who gained >1MCID had more severe BL scores than those losing >1MCID (p<0.001), but had no significant differences in radiographic parameters.

For each domain, BL scores had significant impact on final outcomes: 77%-85% of the patients within 1MCID of NR at BL had outcomes less than 1MCID of NR at 1yr; this dropped to 28-37% for patients greater than 1MCID of NR at BL, and 11% to 16% for those between 2-4MCID of NR at BL (p<0.001).

	Activity	Pain	Appearance
Baseline: Asymp	87%	86%	80%
Baseline: Moderate	24%	55%	39%
Baseline: Poor	13%	12%	12%
Baseline: Severe	0%	0%	0%

Percentage of patients with 1 year scores within 1 MCID of Normative values

## Learning Objectives

By the conclusion of this session, participants should be able to: (1) Appreciate that, although surgery has been shown on average to be superior to nonoperative treatment for significant adult spinal deformity, nonoperative care remains a good option for many patients; (2) Appreciate that at 1 year follow-up, 24% of patients with adult spinal deformity treated with nonoperative measures demonstrated significant improvement.

## Conclusions

Patients who received nonoperative care are more disabled than age- and gender-matched normative references. At 1yr, the likelihood to reach SRS scores similar to normative reference decreases with increased baseline disability. Nonoperative treatment is a viable option for certain ASD patients, and up to 24% demonstrated significant improvement over 1yr.