

# PULMONARY FUNCTIONS AFTER SELF SLIDING GROWTH GUIDANCE FOR EARLY-ONSET SCOLIOSIS WITH MINIMUM FIVE (5-13) YEARS OF FOLLOW-UP

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# INTRODUCTION

**Self sliding growth guidance technique (SSGG) technique was developed to allow growth during treatment of EOS, and eliminate the need for repeated operations for lengthening procedures.**

**The aim of this study is to evaluate the pulmonary function outcomes of the SSGG technique, both in patients who underwent fusion and those who did not, with min 5 years f/up**

# MATERIAL & METHODS

- 17 (10f, 7m) EOS patients treated with SSGG were evaluated.
- The etiology was idiopathic in 9, syndromic in 5, and NF in 3.
- Preop and f/up lung functions (including FVC, FEV1, IC and FEV1/FVC) were compared.
- The effect of final fusion procedure on lung functions were also compared in patients who were fused.
- SRS22 scores were used for HRQoL

# RESULTS

- Average age at the index surgery was 6.5 years (3-10)
- Mean f/up was 7.7 years (5-13)

	Preop		F/up
▪ MT	57°	→	21°
▪ TL/L	47°	→	16°

- In 5 patients who were <5 years old preop lung function tests were delayed until they were able to cooperate.

# RESULTS

- Overall, SSGG prevented 98 planned lengthening procedures.
- In all patients mean preop %pre.FEV1 of 83 remained stable at 85 f/up, and %pre FVC of 76 improved to 80 at f/up.
- Mean preop %pre.IC of 80% improved to 92% and preop %FEV1/FVC remained stable from 109 to 107 at last f/up.

	All Patients n=17		Fused Patients n=11	
	Preop	F/up	Preop	F/up
<b>Pulmonary Function Test</b>				
IC %	80 (31-116)	92 (32-169)	82 (38-116)	91 (64-115)
FVC %	76 (43-108)	80 (51-101)	78 (43-106)	79 (51-101)
FEV1 %	83 (51-124)	85 (56-110)	85 (51-124)	85 (56-101)
FEV1/FVC %	109 (92-119)	107 (97-114)	109 (101-119)	108 (97-114)
MEF50 %	87 (32-169)	93 (61-141)	83 (32-169)	96 (61-131)

# RESULTS

- 11 patients (64%) underwent final fusion following achievement of ultimate spinal growth with a mean of 4.5 years (2-6) f/up after the fusion procedure.
- In these fused groups, all of the predicted % PFT values were higher between the index surgery and last f/up and between the last rod exchange and 2 years after the fusion procedure.
- Mean SRS22 scores were 4.07 at f/up

# CONCLUSION

**SSGG technique preserves preoperative lung functions after 5 years of f/up and lung functions do not decline after the last fusion procedure in skeletally mature pts at the end of SSGG treatment.**

**The mean pre.%FVC and pre.%IC before the index surgery increased at the last f/up, however this did not reach statistical significance due to the small number of the patients**

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