

Spring Distraction System to Correct Early Onset Scoliosis: 2 Year Follow-up Results from 17 Patients.

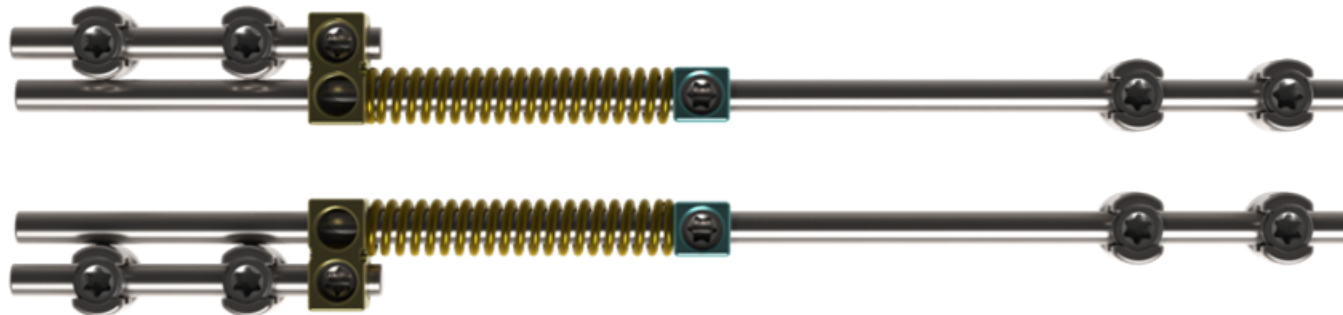
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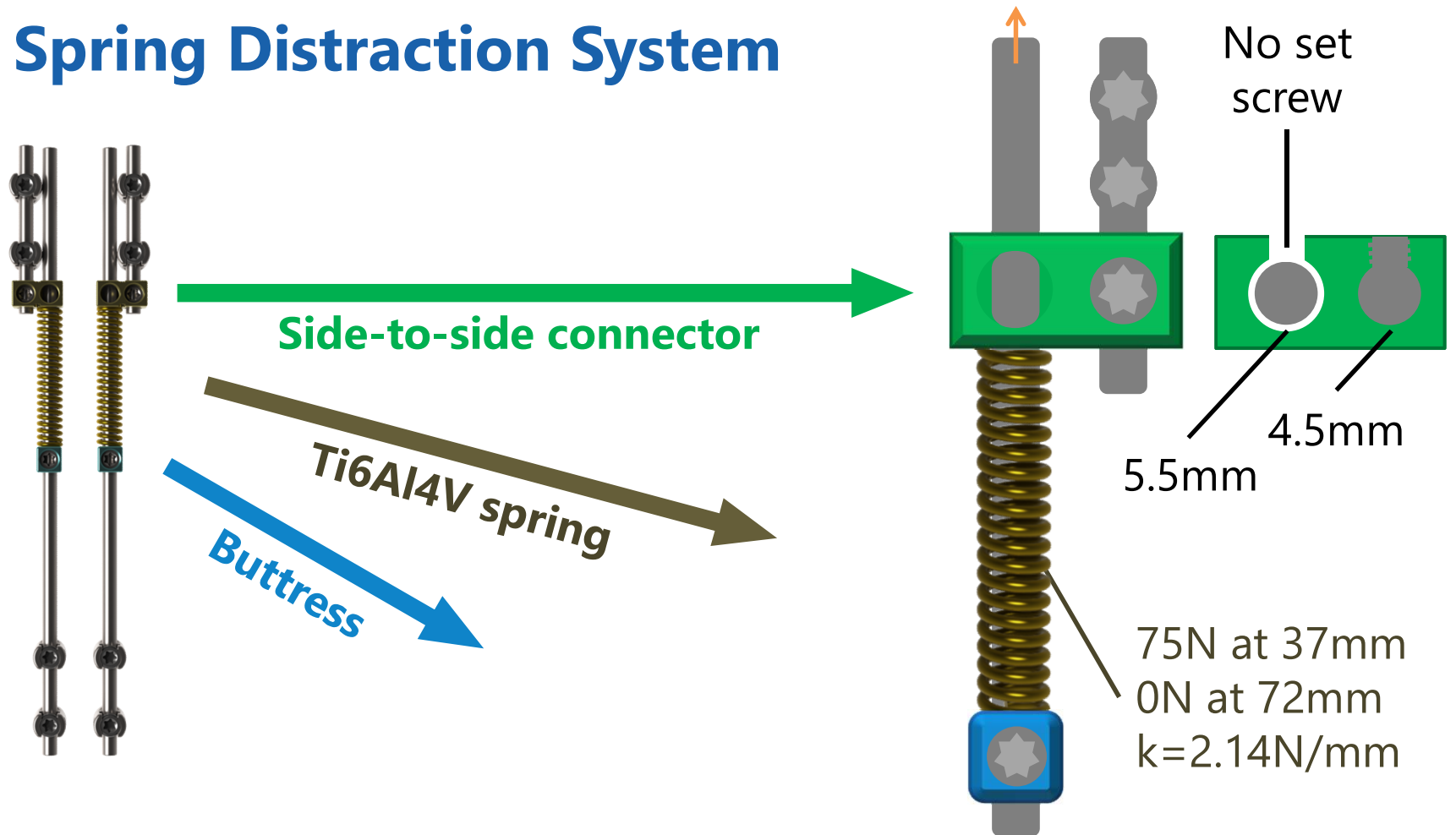
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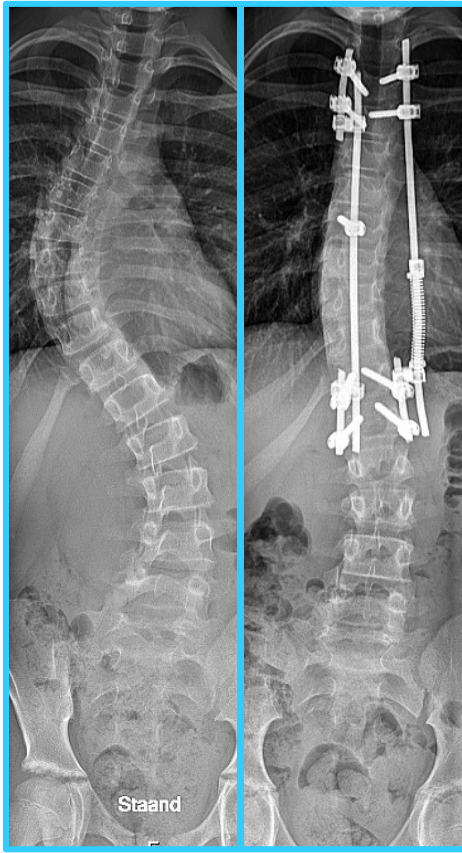
Spring Distraction System (SDS)

- Continuous distraction, no lengthenings necessary
- Can be combined with any instrumentation system

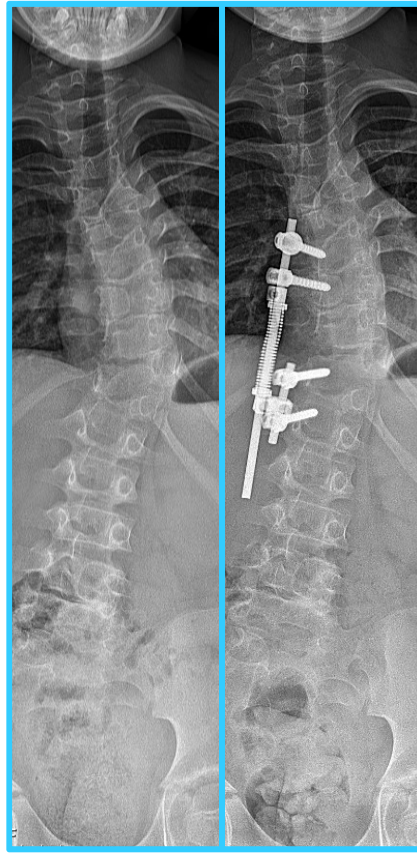


Spring Distraction System

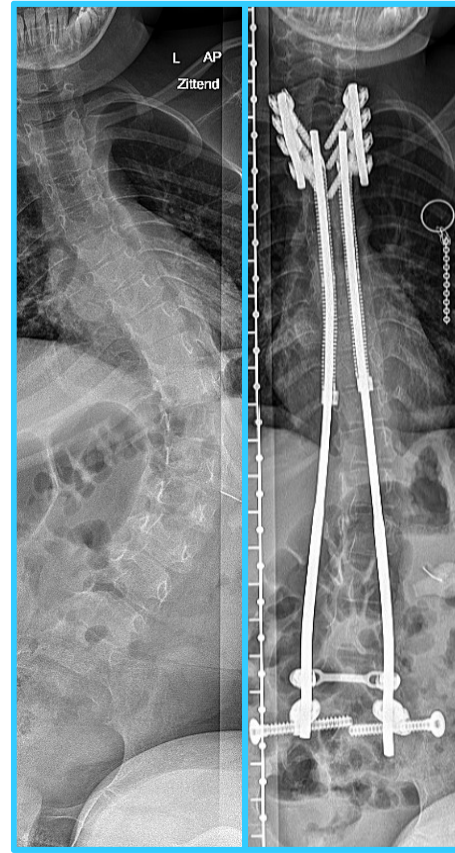




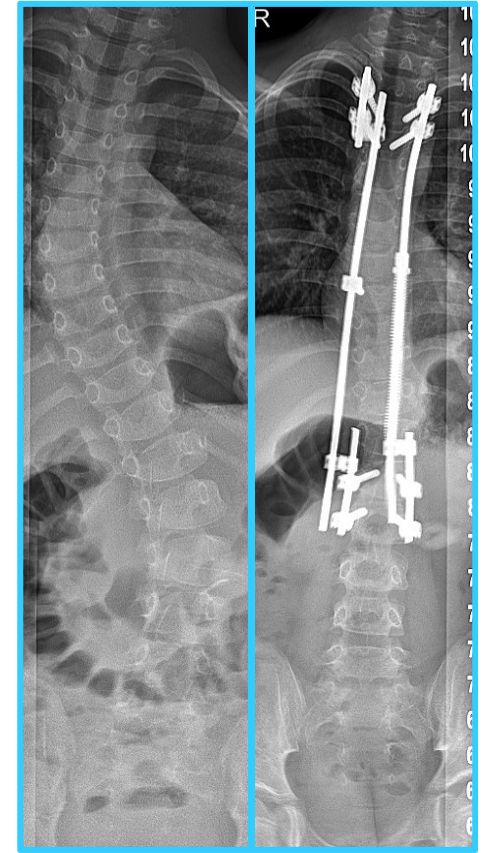
Idiopathic



Congenital



Neuromuscular



Syndromic

Aim of this study

- Prospective cohort study to:
 1. Primary: Analyze **curve correction** and **spinal growth**
 2. Secondary: Compare outcomes between primary SDS implantations (**primary cases**) and patients receiving SDS after (failed) other systems (**revision cases**)

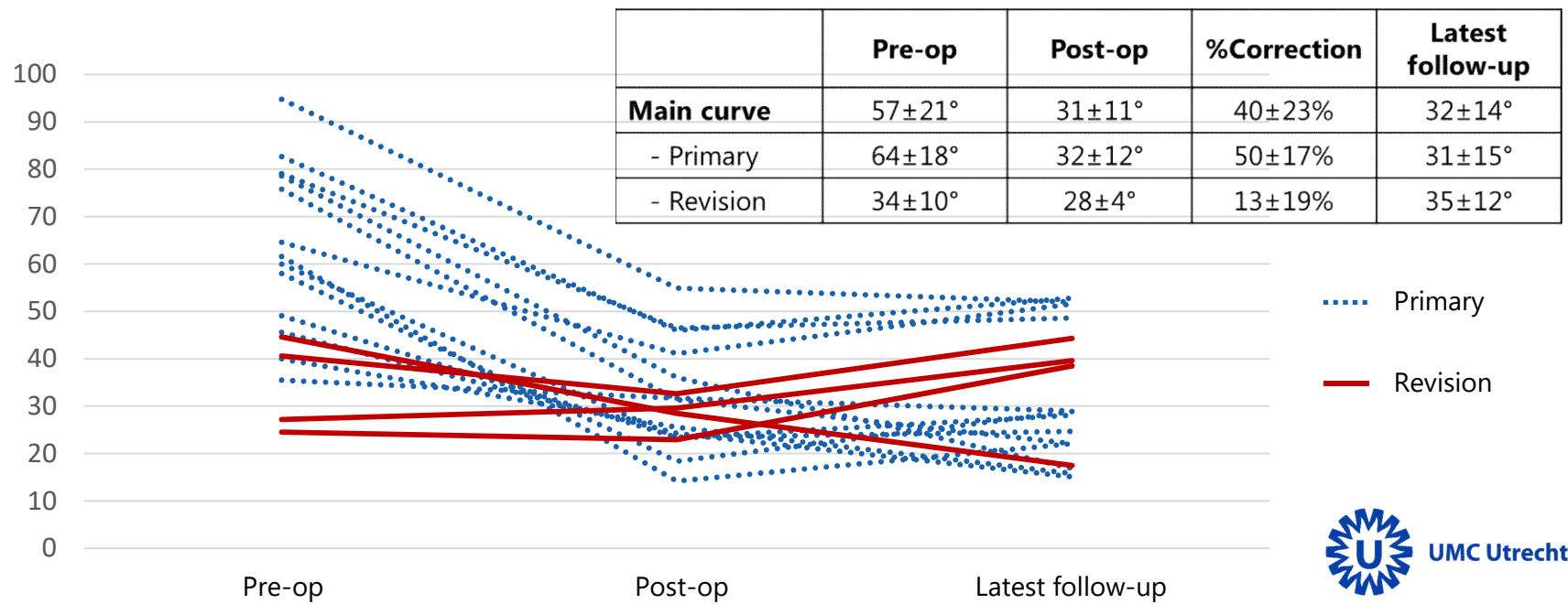
Methods

- Outcomes measured **pre-operatively**, **post-operatively** and at **latest follow-up**
- Radiographic measurements were measured on **calibrated** radiographs with dedicated measuring software
- Outcomes were compared between **primary** and **revision** cases

Demographics

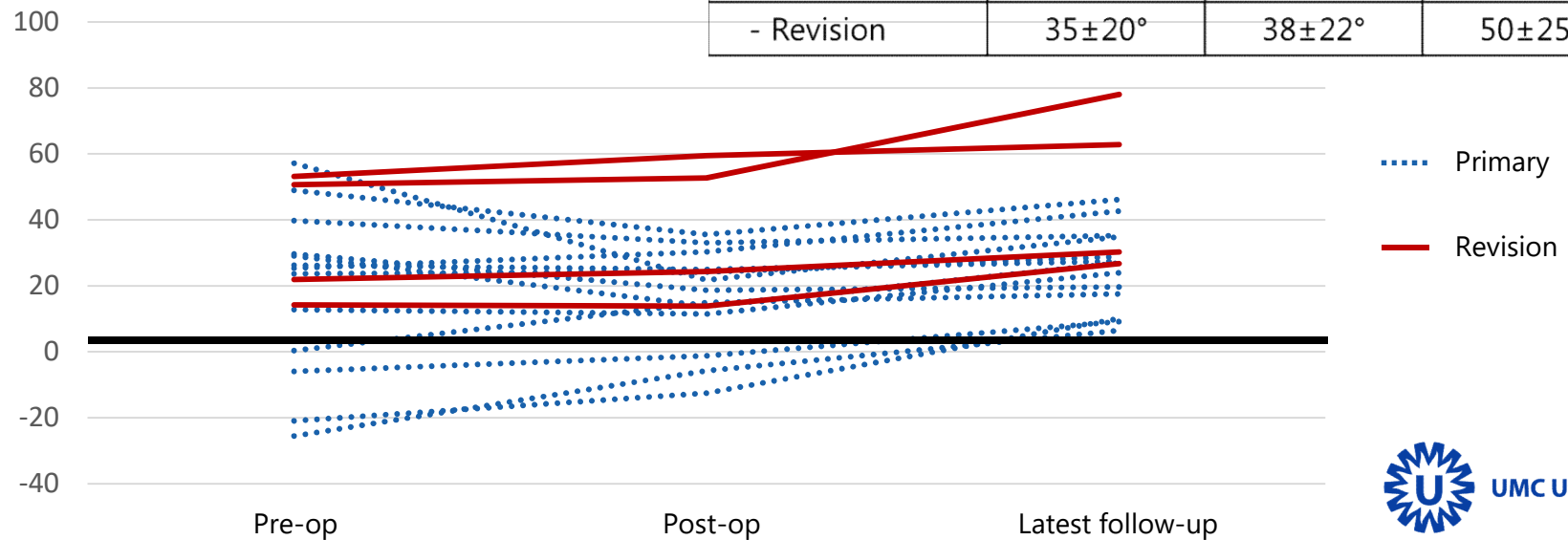
	Total (N:17)		Primary (N:13)		Revision (N:4)		p value
Males	7/17		6/13		1/4		0.88
Age at surgery	9.2±2.0yr		8.7±1.9yr		10.8±1.4yr		0.06
Follow-up	1.9±0.2yr		1.9±0.2yr		1.9±0.1yr		0.99
Etiology	I:4	NM:6	I:2	NM:6	I:2	NM:0	0.27
	C:4	S:3	C:3	S:2	C:1	S:1	
Surgical time	196±68min		220±59min		117±41min		<0.01
Blood loss	337±207cc		391±217cc		163±48cc		<0.01

Curve correction



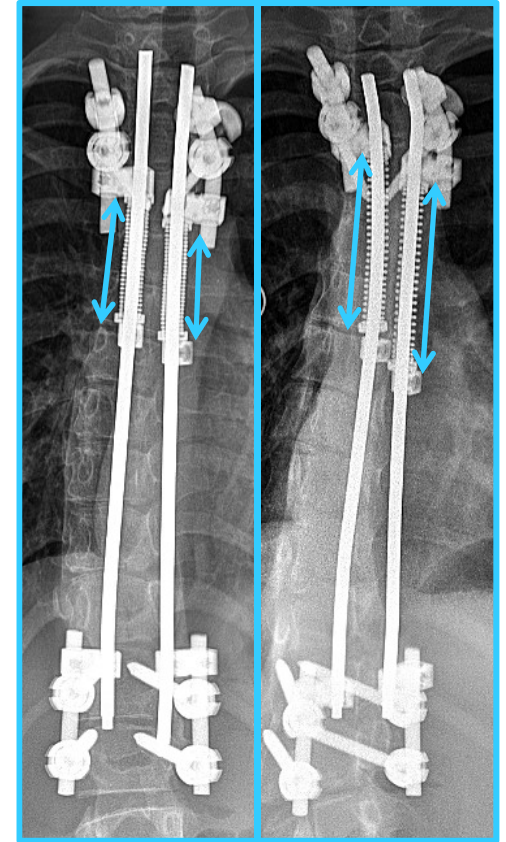
T5-T12 Kyphosis

	Pre-op	Post-op	Latest follow-up
T5-T12 kyphosis	22±25°	21±19°	31±19°
- Primary	19±25°	16±15°	25±13°
- Revision	35±20°	38±22°	50±25°

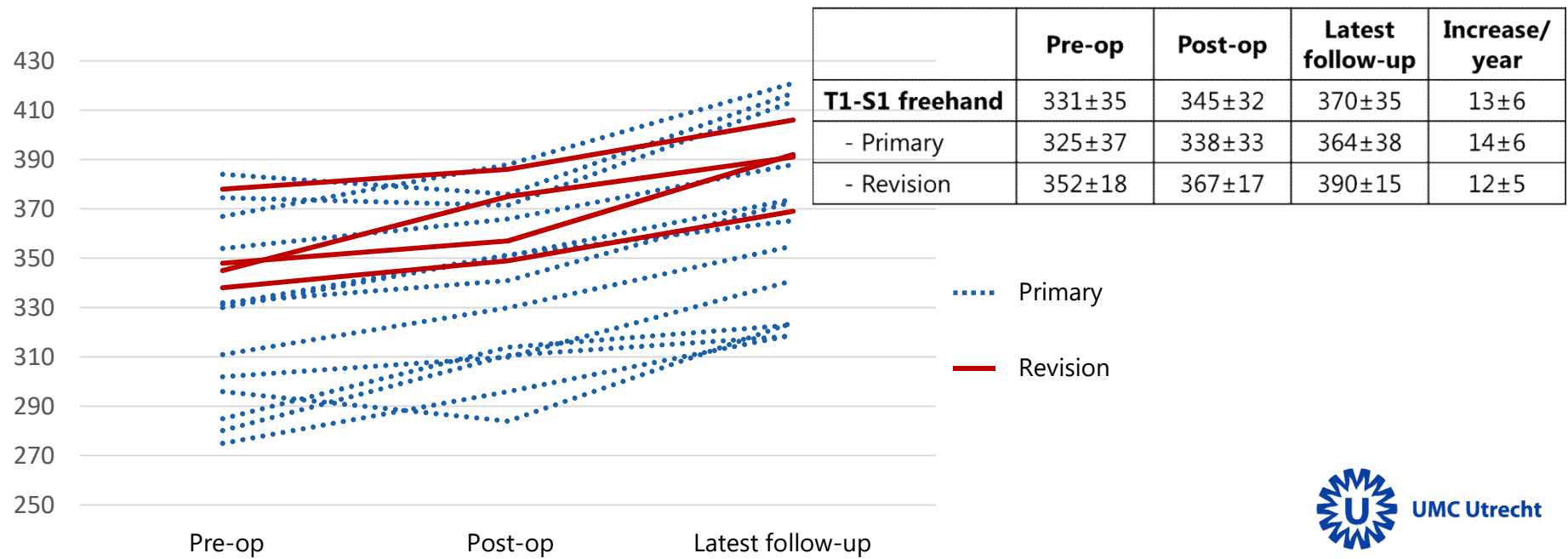


Spring length (mm)

	Post-op	Latest follow-up	Increase/ year
Spring height	68±22	88±26	11±5
- Primary	72±22	92±28	11±5
- Revision	57±21	78±17	11±5



T1-S1 freehand (mm)



Conclusion

- SDS achieves **50% curve correction** in patients with a **primary** implantation, which is maintained at latest follow-up.
- In both groups, SDS allowed for excellent spinal growth during follow-up (**T1-S1: 13mm/yr**), primary cases showed slightly more growth.
- Correction and growth was achieved **without repetitive distractions**.