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## Repeatability of the Aesthetic Index for adolescent scoliosis idiopathic evaluation

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### Objective

To evaluate the intra- and inter-rater repeatability of the Aesthetic Index (AI) and its sub-scores.

### Study design

Since many years in our Institute we have used a clinical tool to evaluate the aesthetics of the trunks posteriorly. This is based on a three point scale for asymmetry (0 absent, 1 slight, 2 important) of the shoulders, scapulae and flanks; the sum of these sub-scores gives the AI. One hundred sixty posterior anterior photographs of the trunk of adolescent idiopathic scoliosis patients were scored two times independently by three observers. We used the Kappa statistics [1]: 0–0.2 poor, 0.2–0.4 fair, 0.4–0.6 moderate, 0.6–0.8 good, 0.8–1.0 very good. The 95% level of agreement was used to identify the minimum clinically significant change to be considered between two different clinical examinations.

### Results

See Table 1.

### Conclusion

The intra-raters agreement is between moderate and good for single sub-scores, and fair for the AI, as it happens for the inter-raters agreement. The AI and its sub-scores can be used in the everyday clinical practice, but a change of 2 points for sub-scores, and 3 for AI is required to reach clinical significance, and this gives to the AI a low sensitivity.

### References

1. Altman DG: **Practical Statistics for Medical Research**. London: Chapman and Hall; 1991.

**Table 1: Results.**

	Kappa statistics range		Percent of agreement		95% level of agreement (range)	
	Intra-raters	Inter-raters	Intra-raters	Inter-raters	Intra-raters	Inter-raters
Aesthetic Index	0.28–0.41	0.17–0.28	46.2–55.6	37.6–41.5	2(98.7–99.4%)	2 (92.5–99.4%)
Shoulders	0.42–0.53	0.30–0.35	64.4–73.7	58.3–61.2	1 (99.4–100%)	1 (96.9–100%)
Scapulae	0.50–0.58	0.20–0.43	69.4–76.9	53.5–61.9	1 (98.1–100%)	1 (95.6–100%)
Flanks	0.48–0.70	0.28–0.33	75.6–82.5	62.8–66.1	1 (100–100%)	1 (98.7–100%)