

Effective Decision Making for Presence of Scoliosis Based on Moiré Fringe Topography

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Visual (\perp) & Forward Bending (\perp) POSITIVE Hip-Weakness Suspected (Tredelenburg Sign)	Visual (\uparrow) & Forward Bending (\uparrow) POSITIVE Leg-Length-Inequality Suspected (Spinal Dimples)
Visual (\perp) & Visual (\uparrow) POSITIVE Postural-Problem Suspected (Mild-Stretching Exam)	Forward Bending (\perp) & Forward Bending (\uparrow) POSITIVE Spinal-Rotation Suspected (Moiré Fringe Topography)

Fig. 1. Decision matrix indicating presence of spinal rotation: test conducted in sitting (\perp)/standing (\uparrow) position

Scoliosis, lateral curvatures and rotations of the spinal column, is a body-disfiguring condition. A two-minute-stripped-orthopedic examination may be able to alert the physician to early-warning signs. Our group tested a protocol in a local school, which was applied to seven- and eight-year-old students. Figure shows decision matrix to detect possible presence of spinal rotation. This matrix is based on four tests, visual (standing), visual (sitting), forward bending (standing) and forward bending (sitting) — postural problem suspected through positive visual examinations (standing and sitting), indicated through positive mid-stretching test; leg-length in-equality suspected though positive visual and forward-bending tests (both standing), indicated through uneven spinal dimples; hip weakness suspected through positive visual and forward-bending tests (both sitting), indicated through positive Tredelenburg sign; spinal rotation suspected through positive forward-bending tests (standing and sitting), indicated through positive moiré.

Keywords: Scoliosis risk, visual examination, forward-bending test, tall children, wasted children

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Research Ethics: Project initiated after Institutional Review Process and conducted in compliance with ethical and human-right standards in our region.

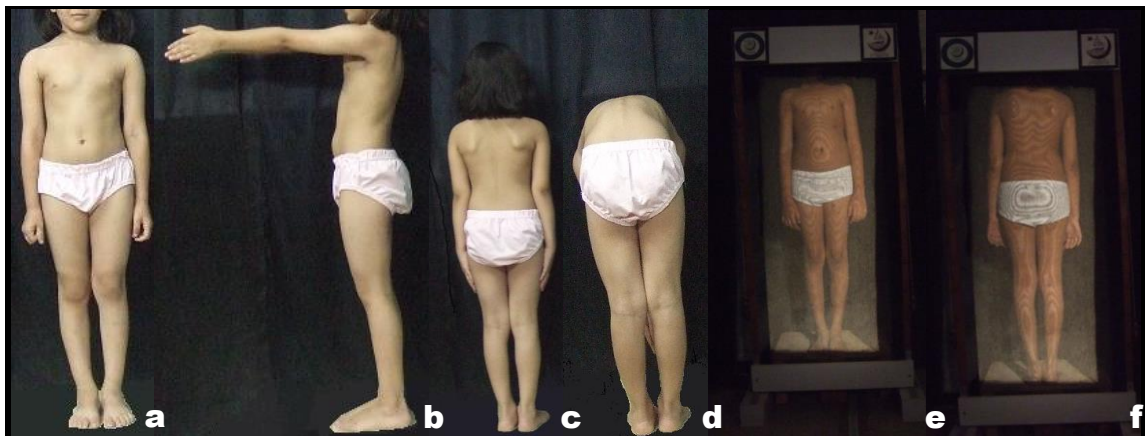


Fig. 2a-f. Early-warning signals for presence of scoliosis, visual — (a) front, (b) side and (c) back and (d) forward bending checks as well as moiré topographs of (e) front and (f) back

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