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

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

Fig. 1. Decision matrix indicating presence of spinal rotation: test conducted in sitting (⊥)/ standing (⇑) 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 signals. Our group tested a protocol in a local school, which was applied to 7- and 8-*year*-old students. Fig. 1 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. Fig. 2*a*-*f* shows visual examination, forward-bending test and moiré topographs of front and back employed to detect scoliosis.

*Keywords***:** Forward-bending test • Scoliosis risk • Tall children • Visual examination • Wasted children
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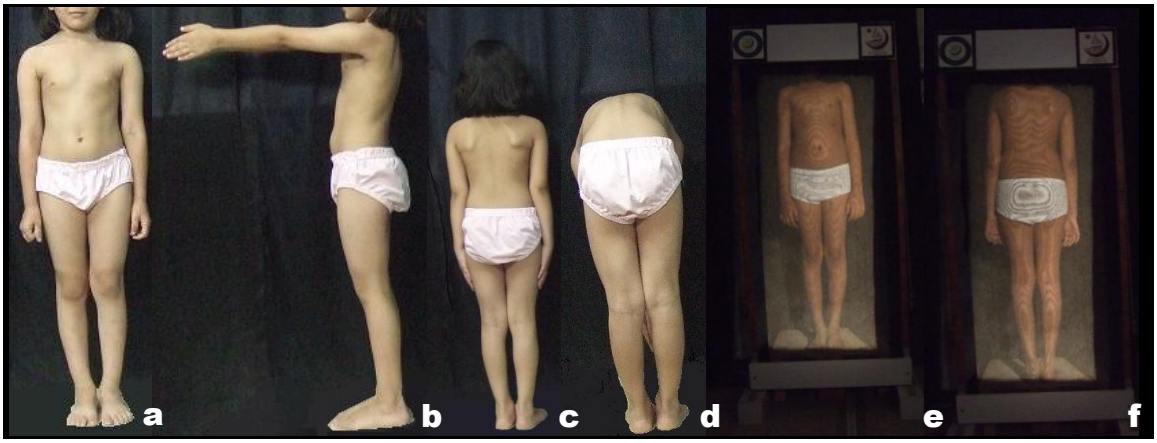

Fig. 2*a*-*f*. Early-warning signals for presence of scoliosis, visual — (*a*) front, (*b*) side and (*c*) back as well as (*d*) forward bending checks as well as moiré topographs of (*e*) front and (*f*) back

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