

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

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

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 inequality suspected though positive visual and forward-bending tests (both standing), indicated through

**Decision matrix indicating presence of spinal rotation: test conducted in sitting (⊥)/standing (↑) position**

uneven spinal dimples; hip weakness suspected though 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.

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**From left to right, early-warning signals for presence of scoliosis, visual and forward bending checks as well as moiré topographs of front and back**

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