

## Physics of Screening Procedures to Detect Trunk Deformities

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An Integrated-Trunk-Deformities-Screening System was described, which would involve multiple-level screening of school-going children. The checks located at the top level were designed to be highly sensitive and could be performed in a semi-private setting. The checks located at the bottom level were chosen to be highly specific. These involve moiré fringe topography of back in the anatomical position (Fig. 1), footprint molds in the anatomical position

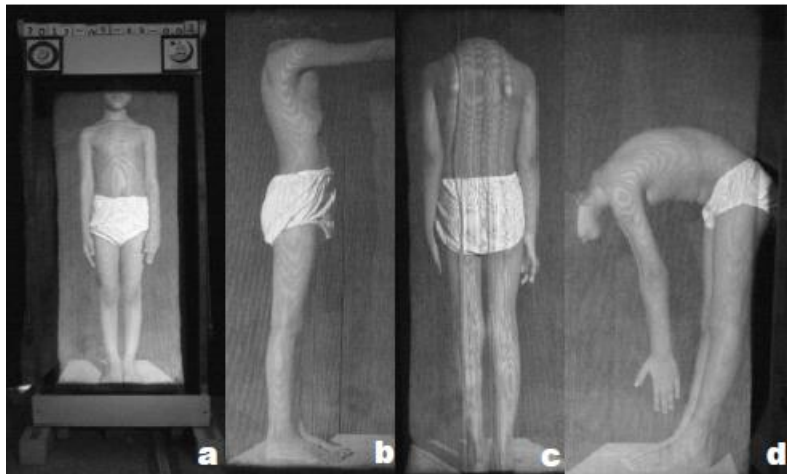


Fig. 1a-d. Moiré topographs of (a) front, (b) side, (c) back and (d) forward bending

and shoe soles as well as footprint analysis during walking on sand. These were compared with the standard forward-bending test (Fig. 2). The goal was to minimize X-ray exposure to children while identifying at risk children for the orthopedic referral.

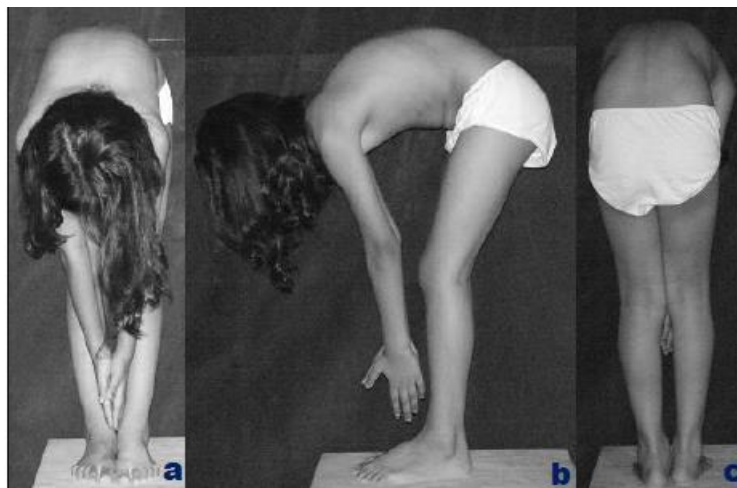


Fig. 2a-c. Forward-bending test as viewed from (a) front, (b) side and (c) back

**Keywords:** Integrated-Trunk-Deformities-Screening System • Kyphosis • Lordosis • Scoliosis

**Web address of this document:** <https://www.ngds-ku.org/Presentations/Trunk.pdf>