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## Non-invasive methods of computer vision in the posture evaluation of adolescent idiopathic scoliosis: A systematic review

**Rozilene Maria Cota Aroeira**

Universidade Federal de Minas Gerais, Brazil

Reviewing techniques for non-invasive postural evaluation of adolescent idiopathic scoliosis (AIS) based on information extraction from images based on computer methods. The Scopus, Web of Science, MEDLINE, ScieLo and PubMed databases were used, for the period 2011-2015. 131 articles were found based on keywords, of which, 15 articles met the established eligibility criteria. Of these, 4 were based on photogrammetry, and 11 based on laser, structured light, ultrasound, and Moiré projection. In these studies, the methodological quality varied from low to high. The findings indicated diversity in methodologies; 14/15 articles reviewed were limited to the evaluation of the topography of the posterior back or contour of the spine. A study, using twodimensional photogrammetry, presented a possibility of whole body postural evaluation. AIS is a highly complex spinal deformity, characterized by the presence of significant asymmetries which may extend to the entire body. Thus, the whole body postural evaluation in individuals with AIS is of high interest for the improvement of functional diagnosis and the achievement of more efficient therapeutic interventions for the scoliosis cases diagnosed as “light” and “moderate”. Further studies are necessary to meet the complex challenge of finding a non-invasive human postural assessment method suitable for clinical use.

### Biography

Rozilene Maria Cota Aroeira is a Physical Therapist, Master in Bioengineering and PhD student in Biomechanics, Faculty of Structural Engineering - Federal University of Minas Gerais, Brazil. She completed her Doctoral Internship at Faculty of Engineering of the University of Porto, Portugal. She has been dedicated to studying non-invasive diagnostic techniques in the monitoring of adolescent idiopathic scoliosis. She is the author of the study, “*New Method of Assessment Scoliosis - Preliminary Results Using Computerized Photogrammetry*” published in reputed journals.

[rozecota@hotmail.com](mailto:rozecota@hotmail.com)

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