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Reliability, repeatability and comparison to norma of a set of new stereophotogrammetric parameters detect trunk asymmetries

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Abstract

Aesthetic impairment is a crucial issue in Adolescent Idiopathic Scoliosis (AIS), but to date no objective measurements are available. The aim of the study is to evaluate the repeatability of 17 parameters measured by surface topography in a group of AIS subjects and verify their diagnost validity. The paper is divided into three cross-sectional observational studies. We evaluated 17 selected surface topography parameters that could be good predictors of scoliosis' impact on th patients' trunk. We analysed short-term (30 seconds, 38 subjects) and medium-term (90 minutes subjects) repeatability of surface topography measures and their diagnostic validity in AIS (74 subjects, 33 AIS patients and 41 healthy subjects). All examined parameters were highly correlate far as short and medium-term repeatability is concerned. We found a statistically significant diffe between the scoliosis group and the control group in 3 surface rotation parameters, 1 shoulder parameter and 3 waist parameters. In conclusion, surface topography showed a good repeatabil Moreover, some of its parameters are correlated with AIS, enabling us to find differences betwee pathological and healthy subjects. Thanks to these findings, it will be possible to develop a tool t can objectively evaluate aesthetics is AIS patients.

Keywords: adolescent idiopathic scoliosis; aesthetics; surface topography; trunk deformity.

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