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Three-dimensional facial analysis using a video imaging system

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ABSTRACT

The purpose of this article was twofold: (1) to provide an estimate of error in the digitization of various soft tissue landmarks using a video imaging system, and (2) to evaluate the relationships of various soft tissue measurements in balanced young adult faces. A video imaging system was used to digitize frontal and lateral soft tissue landmarks on 25 male and 25 female Caucasian young adults with Class I occlusion and esthetically pleasing and balanced soft-tissue profiles. Twenty subjects were redigitized and only two measurements showed a statistically significant error. Large variabilities were found for several measurements. Males, in general, had greater soft tissue thickness, facial depth and width, and lip length than females. The measurements were found to compare favorably with previous reports. Imaging systems were seen to have the advantage of providing reliable measurements in all three dimensions without the potential hazards of ionizing radiation.

KEY WORDS: Imaging systems, Three-dimensional facial analysis, Soft-tissue analysis, Facial balance.

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