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## **The reliability of the Frankfort Horizontal in roentgenographic cephalometry**

H. Pancherz and K. Gokbuget

Department of Orthodontics, University of Giessen, Germany

### **ABSTRACT**

This longitudinal investigation was undertaken to assess the reliability of the Frankfort Horizontal line (FH) when using either anatomical Porion (Po-a) or machine Porion (Po-m) as reference landmarks. Lateral head films (22 pairs) from subjects at the ages of 11 and 14 years were analysed twice. The results revealed that: (i) the registration error of Po-a was larger than of Po-m; (ii) for Po-a the registration error from the 11 year head films was approximately twice as large as from the 14 year head films; (iii) Po-m was, on average, located ~9 mm below and 2 mm anterior to Po-a; (iv) during the 3 years of observation, Po-m changed its position downward markedly more than Po-a; (v) due to the diverging location of machine Porion (Po-m) in relation to true Porion (Po-a) and the large change of Po-m with time, the FH was affected considerably. It was concluded that machine Porion was unsuitable for the construction of the FH. A misjudgement of the reference line may result in diagnostic misinterpretations and lead to false conclusions in longitudinal studies, e.g. when the outcome of a particular treatment procedure is evaluated.

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