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Digital Models as an Alternative to Plaster Casts in Assessment of Orthodontic Treatment Outcomes

Chung Yan Vanessa Leung[1], Colman McGrath[1], Urban Hagg[2], Ricky Wing Kit Wong[1], Yanqi Yang[1]
[1]Prince Philip Dental Hospital, 2/F, Paediatrics and Orthodontics Department, Hong Kong, Hong Kong, China, [2]Department of Orthodontics, Faculty of Health Sciences, University of Copenhagen, Copenhagen, Denmark

This study aimed to evaluate the use of digital models in assessing occlusal improvements following orthodontic treatment compared with assessments from plaster casts.
Digital models and plaster casts of 39 consecutive patients at pre- and post-treatment were obtained and assessed using the Peer Assessment Rating (PAR) index and the Index of Complexity and Treatment Need (ICON). PAR and ICON scores were compared in comparison analyses at group level and at an individual level. There was no significant difference in PAR scores nor ICON scores between digital and plaster cast assessments. Agreement of ratings of occlusal improvement was good for PAR and moderate for ICON.
The study strongly supports the use of digital models as an alternative to plaster casts when assessing changes in occlusion at the 'individual patient' level using ICON or PAR, but cannot fully support digital models as an alternate to plaster casts at 'the group level'.