

In vitro colour stability of aesthetic brackets.

[Faltermeier A](#), [Behr M](#), [Müssig D](#).

Department of Orthodontics, University Medical Centre, Regensburg, Germany.
andreas.faltermeier@klinik.uni-regensburg.de

Contrary to their popularity in satisfying aesthetic demands, plastic brackets still present some problems because of their decreased hardness and wear resistance. A problem of plastic brackets is discolouration, due to ultraviolet (UV) light and food dyes. The aim of this study was to investigate the colour stability of aesthetic brackets during UV irradiation and exposure to food dyes. Four different polymer brackets were exposed in a Suntest CPS+ ageing device to a xenon lamp to simulate natural day light. Because most tooth-coloured bracket systems are used in adult treatment, red wine, coffee, and tea were chosen as food colourants. After 24 and 72 hours of exposure, colour measurements were performed by means of a spectrophotometer according to the CIE L*a*b* system and colour changes (ΔE^*) were computed. Statistical differences were investigated using three-way analysis of variance (ANOVA). With the exception of the Aesthetic-Line bracket, almost all investigated polymer brackets showed clinically unacceptable discolouration during in vitro exposure to colourants. Most of the brackets became yellower after UV light treatment. In spite of the short exposure period of 72 hours, almost all polymer brackets showed undesirable discolouration. These current in vitro findings indicate that even newly developed plastic brackets, consisting of composite materials or modern polymers (polyoxymethylene) may have clinically unacceptable colour stability in the long-term.

PMID: 17702794 [PubMed - indexed for MEDLINE]