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Emergencies and comfort levels with compliance-free fixed Class II correctors during Class II malocclusion treatment: A systematic review

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Objective: To qualify and quantify the emergencies and comfort levels associated with compliance-free fixed Class II correctors during Class II malocclusion treatment.

Methods: A systematic search of several electronic databases (Medline, PubMed, Embase, and Web of Science) was conducted until May 2016, as well as a limited grey-literature search (Google Scholar). Prospective and retrospective human studies that used a compliance-free fixed Class II appliance in a non-extraction and non-surgical approach were selected. Two authors independently reviewed and extracted data from the selected studies. Risk of bias was assessed.

Results: Eleven studies satisfied the inclusion criteria. The patients' mean age ranged from 10.3 – 15 years and the fixed Class II corrector treatment duration ranged from 3.8 – 12 months. The studies involved variations of the Herbst and Forsus only. The rate of emergency appointments ranged from 22.28% of patients treated with a stainless steel crown Herbst to 88% of patients treated with a removable mandibular acrylic splint Herbst. The main area of discomfort was soreness in the cheek. There was a lack of standardized reporting methodology between studies.

Conclusions: Emergencies associated with fixed Class II correctors are frequent and differ with appliance design. Future research should examine other Class II correctors. A standardized method for reporting emergencies must be developed to allow for comparison of different Class II correctors. This additional information may be useful to clinicians when selecting a Class II corrector.