Purpose: To discuss the histological and clinical effects of abnormal occlusal forces on the teeth and periodontium and to provide a basis of classification for this interaction.

Materials and Methods: Literature review and author’s opinion.

Findings:
- Definitions: Occlusal trauma is defined as an injury to the attachment or tooth as a result of excessive occlusal forces. Primary occlusal trauma is injury resulting from excessive occlusal forces applied to a tooth or teeth with normal support, while secondary occlusal trauma is injury resulting from normal occlusal forces applied to a tooth with inadequate periodontal support. Combined occlusal trauma refers to injury resulting from abnormal occlusal forces applied to a tooth or teeth with inadequate (abnormal) periodontal support. Traumatogenic occlusion is an occlusion that produces forces that cause an injury to the attachment apparatus. (AAP glossary of terms 1992)
- Glickman (1963), suggested the co-destructive theory based on a zone of irritation (marginal/interdental gingiva; gingival fibers) and zone of co-destruction (transeptal/alveolar crest fibers, periodontal ligament, cementum, bone) resulting in formation of angular defects due to change in pathways of inflammation.
- In a finite element analysis by Reinhardt (1984), it was shown that stress values increase as bone support decreases and there is increase in mobility after at least 4 mm of loss of attachment on an average. (Reinhardt’s phenomenon).
- Early studies came from histological studies from human autopsy materials and animal studies. Two most important series of studies are from the Rochester group (Polson et al.) and the Sweden group (Lindhe et al.). The Rochester model used 4 squirrel monkeys, jiggling forces alternating in a mesio-distal direction, moderate amount of force and were of short duration – 15 weeks. They found no increased loss in attachment in the group with occlusal trauma. The Swedish group used 6 beagle dogs and created occlusal trauma by cap splint and orthodontic wires and ligature induced periodontitis. They found increased loss of attachment in teeth subjected to trauma from occlusion.

Conclusions: To date, several studies have been done discussing the role of occlusion on the progression of periodontal diseases. Although, their results have been inconclusive, most studies agree on the fact that trauma from occlusion alone does not cause an increased loss of attachment in the absence of inflammation. Teeth that are not mobile or are not subjected to occlusal trauma respond better to regenerative therapy than teeth that are subjected to occlusal trauma.