

Position Paper on Root Resorption in Orthodontic treatment

Root Resorption is the shortening of the root length of a tooth when compared to the pre-treatment panoramic or periapical radiograph. It is most common in the maxillary incisors, followed by the mandibular incisors. The incidence of root resorption in the orthodontically treated population is greater than 90%. Within this group, the incidence of moderate to severe root resorption (greater than 20% reduction of original root length) is about 3% in adolescents and 4% in adults. Of course, if moderate to severe resorption occurs, then the true risk was 100%. The remainder of this topic will focus on the moderate to severe category.

Orthodontic patients who experience root resorption are not going to lose these teeth as a result of the resorption except in extremely rare incidents. Orthodontic patients who experience root resorption do not need to have root canals to treat the condition as the nerve remains vital in these teeth. These patients, in the majority of cases, are able to keep their teeth functioning properly for their lifetime. Studies show that the resorption stops after the orthodontic treatment is completed. There are some studies that suggest that a discontinuation of orthodontic forces for 4-6 months during treatment can help stop the process. Root resorption is more likely to occur in cases where teeth are moved over a greater distance such as in extraction cases, and in cases where treatment extends beyond the typical 2 year timeframe. Patients with abnormal root form can be more susceptible to root resorption, as well as patients with a history of tooth injury. Some patients are just more biologically susceptible than others for reasons that are not understood. With the above risk factors noted, we still cannot predict which patient is more likely to have moderate to severe root resorption as a result of treatment.

Any patient and/or parent with strong concerns about root resorption can opt to have panoramic radiographs taken every 6 months during the course of treatment. Please keep in mind that x-rays expose the body to a cumulative effect of ionizing radiation. Our typical office protocol is to follow the principle of ALARA and typically take a minimal number of x-rays both pre and post treatment. We feel that the risk of additional x-ray exposure is greater than the risk for root resorption. Please feel free to ask our doctors any further questions that you have on this or any other topic related to Orthodontic treatment.

Adam J. Weiss, D.M.D.

Diplomat, American Board of Orthodontics