Long-Term Eruption of Teeth Adjacent to Dental Implants in the Esthetic Zone: A 14- to 20-Year Clinical Study on Adult Population

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Introduction

Dental implants do not adapt to alveolar bone changes, potentially leading to infra-occlusion phenomena with the adjacent natural tooth. The factors influencing infra-occlusion in adults remain unclear.

Objective

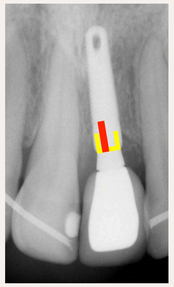
The retrospective study aims to evaluate continued tooth eruption and dental implant infra-occlusion in the anterior maxilla of adults.

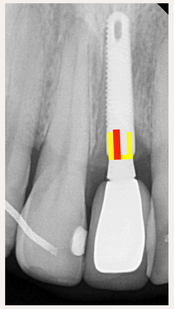
Methods

The study protocol was approved by the ethics committee.

Inclusion criteria included healthy adults **over 40** who lost teeth due to accidents, caries, or congenital reasons.
Exclusions included incomplete records or tooth loss due to periodontal disease.

Bone loss was measured with periapical radiographs. Vertical differences between implant-supported crowns and adjacent teeth were assessed using digital images.





Conclusions

This study demonstrates the significant impact of Class II occlusion and bone loss on tooth eruption above the occlusal plane in adults.

It is recommended that patients with these conditions be informed about the increased risk of experiencing these phenomena.

Results

The study included 30 patients. Mean age was **47.07 years.** The maximum follow-up duration was **26 years** with no recorded implant failures over the follow-up period.

A Chi-square test revealed a significant correlation. All **Class II occlusion** cases demonstrated more than 1 mm of eruption above the occlusal plane.

A significant correlation was observed between bone loss and tooth eruption above the occlusal plane, with higher bone loss measured in cases where the eruption exceeded 1 mm.

	Value	df	Asymptotic Sig. (2-sided)	Exact Sig.(2-sided)	Exact Sig.(1-sided)
Pearson Chi-Square	**15.000**	**1.000**	**0.000**	-	-
Continuity Correction	**11.484**	**1.000**	**0.001**	-	-
Likelihood Ratio	**16.563**	**1.000**	**0.000**	-	-
Fisher's Exact Test	-	-	-	**0.000**	**0.000**
Linear-by-Linear	**14.500**	**1.000**	**0.000**	-	-