

# Research & Table Clinic Day 2020 Structured Abstract

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**TITLE:**

**PRESENTER**

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**IS THIS A COMPETING PRESENTATION: NO**

**SELECT RESEARCH / SCHOLARLY TOPIC: CLINICAL (Techniques, treatments, involves patients)**

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## **TITLE:**

Frequency of Adequate Mesiodistal Space and Faciolingual Alveolar Width for Implant Placement at Human Anterior Tooth Positions

## **OBJECTIVES:**

Investigators have defined a minimum mesiodistal space requirement for dental implant sites, and failure to observe this constraint may adversely impact peri-implant health and esthetics. However, no prior report establishes frequencies at which human anterior tooth positions present favorable mesiodistal space for accommodating a dental implant.

## **METHODS:**

A single examiner analyzed 205 cone-beam computed tomography images and recorded mesiodistal space available for implant placement at anterior tooth positions. The examiner compared available mesiodistal space with standardized implant platform diameters and evaluated implant-to-tooth distances.

## **RESULTS:**

In the esthetic zone, lateral incisor sites most frequently failed to present favorable mesiodistal space. At maxillary lateral incisor positions, 22% to 27% of sites offered < 2 mm between the implant platform and the adjacent teeth. At mandibular incisor sites, 79% to 97% of sites offered < 2 mm and 35% to 76% of sites offered < 1.5 mm between the implant platform and adjacent teeth. Only 3% to 6% of mandibular central incisor sites presented  $\geq 2$  mm implant-to-tooth distance, and only 24% of these sites presented  $\geq 1.5$  mm implant-to-tooth distance.

## **CONCLUSIONS:**

In the population evaluated, mandibular central incisor positions rarely presented favorable mesiodistal space to accommodate conventional narrow diameter implants. Additionally, the data suggested that many lateral incisor sites may be at risk for compromised esthetics, tissue stability, and peri-implant health when conventional narrow-diameter implants are utilized.

## **LEARNING OBJECTIVES:**

1. Identify the frequencies at which human anterior tooth positions present favorable mesiodistal space for accommodating a dental implant.
2. Discuss disadvantages of non-implant tooth replacement strategies for single missing teeth in the maxillary anterior.
3. Describe structural and biologic limitations of dental implants that are < 3 mm in diameter.