

## Comparative study of mechanical characteristic of mini implants through implementation of real working condition using finite element method

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### Abstract:

**Background and aim:** in the present study regarding to application of mini implant in limit space of edentulous areas. The stress analysis of jaw bone with two different qualities (D2 and D3) around three types of mini implants through finite element method.

**Materials and Methods:** in this experimental study , three types mini implant were include in the study. To apply load, a 100N vertical force and a 100N lateral force with an angle of 45 with respect to horizon were used on the coronal part of the abutment. The stresses in mini implants and its adjacent bone were obtained via Abaqus soft ware.

**Results:** it was observed that the magnitude of Von Mises stresses of D3 bone was higher than those of D2 bone. Also, the stress level in cortical bone was higher than that of cancellous bone. It was found that  
**Conclusions:** For all studied systems, the stresses' values remain in physiological limit. Besides, the stress distribution in cortical bone was the same for all considered cases. Besides, the maximum stress was in the neck of implant close to the first thread.

**Keywords:** biomechanic , mini implant, finite element, alveolar bone