

# Bacterial leakage of different internal implant/abutment connection

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## Abstract

### Objectives

This research was carried out to evaluate the bacterial leakage of two different internal implant abutment connections in vitro.

### Materials and Methods

Twenty dental implants divided into two equal groups were compared; Group 1 fixtures with an internal hexagonal geometry; Group 2 fixtures with a tri-lobe internal connection. A bacterial suspension of *Staphylococcus aureus* was prepared to obtain a density of 0.5 McFarland standards. All implant abutment assemblies were submerged in sterile tubes containing 4 mL of *S. aureus* broth culture and were incubated at 37°C for 14 days. The specimens were disassembled and the inner surfaces of the implants were sampled by sterile paper points. Then the paper points were immersed in test tubes containing sterile BHI broth. From the broth, culture was done on blood agar plates and incubated at 37°C for 24 h. The resulting colonies were identified by Gram's stain and biochemical reactions.

### Results

Internal hexagon implants showed statistically significant higher mean Log<sub>10</sub> CFU than Tri-lobe implants.

### Conclusion

Bacterial leakage seems to be inevitable but fixture abutment interface geometry plays an important role in the amount of leakage.

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