



# The influence of different neck design on marginal bone loss in dogs

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## Introduction

Loss of the marginal bone to first thread have been accepted but continuous effort have been made to reduce this bone loss by varying implant design and surface texture. Few of currently available implants in the market have claimed to have solved this problem. This animal study has examined the histomorphometric variations between implants with micro-thread, micro-grooved and machine surfaced neck designs.

## Method

Premolars from two mongrel dogs have been removed and left to heal for three months. Each three different implant systems with smooth, micro-thread and micro-grooved for their implant neck were placed according to the manufacturers' protocol and left submerged for 8 and 12 weeks, which were then harvested for histological examination.

## Results

All specimens have shown uneventful healing for the duration of the experiment. The histological slides have shown that all samples had osseointegrated successfully and there were active bone remodelling adjacent to implants were observed. With the micro-grooved implants 0.35mm and 0.22mm of the marginal bone loss was observed at 8 and 12 weeks respectively. The micro-threaded implants had losses 0.72mm and 0.54mm. The smooth neck designed implants had marginal bone loss of 1.31mm and 1.61mm in 8 and 12 weeks specimens.

A complex soft tissue arrangement has been observed against micro-threaded and micro-grooved implants.

## Conclusion

Within the limitations of this study, it could be concluded that implants with micro-thread had the least and the smooth neck designed implants had the most marginal bone loss. The micro-textured implant surfaces affect soft tissue responses.