

Zone of Keratinized Tissue Around Implants Really Matters??

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The keratinized gingiva is tightly adhering to the connective tissue and bone via deep rete pegs and thought to be necessary for gingival health and prevention of periodontal disease progression. As stated by Lang and Loe, the minimum width for healthy keratinized tissue surrounding the teeth is 2mm [1]. This concept has been carried over to peri-implant keratinized tissue. The narrow zone of attached gingiva is associated with higher chance of gingival inflammation.

However, several studies have challenged this concept as it pertains to teeth and also implants, and have stated that a minimum width of keratinized gingiva is not required provided adequate oral hygiene is maintained. Cox and Zarb in 1987 conducted a study in which they found that 80% of the implants evaluated had no keratinized gingiva but had healthy peri-implant tissue [2].

There is a great deal of controversy in the literature about the importance of keratinized gingiva around dental implants and the amount, if any, which is required for implant health. Some studies concluded that peri-implant health could be maintained even in the absence of keratinized gingiva providing adequate oral hygiene is employed [2,3]. Wennstrom 2012 and Esper 2012 shown in his study that no major difference in the clinical parameters like plaque control, gingivitis, bleeding on probing and probing depth between adequate and inadequate width of masticatory gingiva [4,5].

The absence of keratinized gingiva around dental implants does not necessarily cause peri-implant disease, but maintaining meticulous oral hygiene in areas of minimal keratinized gingiva is difficult because mobile mucosa is more susceptible to inflammatory changes.

Greenstein, in a literature review, stated that a narrow zone of keratinized gingiva, less than 2 mm, was associated with increased inflammation, decreased tissue resistance to plaque accumulation, and recession of the gingiva, ultimately resulting in tissue destruction [6]. These findings are also supported by Chung 2006 in other similar study [3].

Warrer, et al. 1995 stated that the absence of keratinized gingiva around dental implants increase the susceptibility of the peri-implant region to plaque induced tissue destruction [7]. As stated by Bouri in 2008 in the presence of an inflammatory response, implants placed in areas with narrow zones of keratinized gingiva have an increased susceptibility to tissue breakdown, showed earlier loss of attachment and are less resistant to insult along the implant-mucosa interface [8].

So the healthy keratinized gingiva around dental implants may offer more resistance to the forces of mastication and frictional contact that occurs during oral hygiene procedures results in more predictable success and maintenance of the implant, and also results in an improved aesthetic outcome. Keratinized gingiva provides stabilization to the periodontium, protects the teeth and implants from masticatory and external trauma, and provides a barrier to inflammatory infiltrate [9]. Reconstruction of the keratinized gingiva in deficient areas using techniques such as the free gingival graft, apically displaced flap or the subepithelial connective tissue graft should be employed prior or after implant placement.

Concluding attached gingiva is not the ultimate requirement for peri-implant health but as the consequences of inflammatory changes around dental implants are detrimental and sometimes not reversible, it is undoubtedly helpful.

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