

Peri-implant diseases: Risk indicators and preventive measures

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Definitions

Peri-implant health and peri-implant diseases were recently defined at the World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions¹.

Peri-implant health

Peri-implant health was characterized at the clinical level by the absence of signs of soft tissue inflammation, e.g. absence of bleeding on gentle probing (BoP) and suppuration¹.



Peri-implant mucositis

Peri-implant mucositis was defined as presence of BoP and/or suppuration with or without increased probing depth compared to previous examinations in conjunction with the absence of bone loss beyond crestal bone level changes resulting from initial bone remodelling.⁵ Visual signs of inflammation may vary and peri-implant mucositis may be diagnosed around implants with variable levels of bone support.



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Peri-implantitis

Peri-implantitis was defined by the presence of BoP and/or suppuration, increased probing depths compared to previous examinations and presence of bone loss beyond crestal bone level changes resulting from initial bone remodelling.⁵

Prevalence of peri-implant diseases

The prevalence of peri-implant diseases has been widely investigated. Outcomes of a systematic review reported a weighted mean prevalence of peri-implant mucositis of 43 % (range: 19 - 65 %) and peri-implantitis of 22 % (range: 1-47 %).¹⁰ Results from cross-sectional studies indicated that the frequency of peri-implantitis ranges between 13 and 26 %.² However, based on the wide range of reported prevalences reflecting the high heterogeneity of the applied clinical and radiographic thresholds for disease definition, an adequate estimate of peri-implant diseases seems difficult.¹⁰

Risk indicators for peri-implant diseases

A number of risk indicators have been identified that may lead to the establishment and progression of peri-implant mucositis and peri-implantitis.

The following risk indicators and their corresponding preventive measures are presented:

Insufficient self-performed plaque control: Poor self-performed plaque control increases the risk for peri-implant diseases¹¹.

Prevention: High levels of self-performed plaque control are critical for the maintenance of peri-implant soft tissues without inflammation.

Excess cement: Presence of cement excess is associated with peri-implant mucositis and peri-implantitis.^{15,26}

Prevention: Attention should be paid to cementation in order to avoid excess cement. Alternatively, screw-retained restorations may be considered.

Lack of keratinized and attached peri-implant mucoza:

Implants not surrounded by attached and keratinized mucosa are more prone to plaque accumulation and recession, even in patients with sufficient oral hygiene and enrolled in maintenance therapy.²⁰

Prevention: Care should be taken before, during or after implant placement to ensure that keratinized and attached mucosa is present around dental implants.

Untreated peri-implant mucositis: Patients diagnosed with peri-implant mucositis that remains untreated for a period of 5 years are more likely to develop peri-implantitis compared with those receiving a yearly treatment for peri-implant mucositis.⁷

Prevention: Early diagnosis and treatment of peri-implant mucositis reduces the risk for the development of peri-implantitis.

History of treated periodontitis: The survival and success rates of implants placed in patients with treated periodontitis are lower compared with those in patients without a history of periodontitis.²³

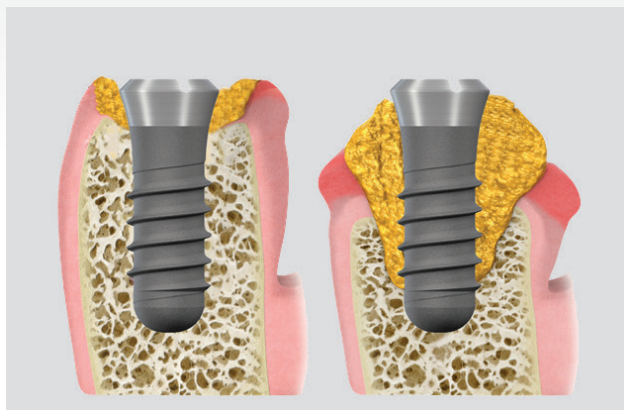
Prevention: High-quality treatment of periodontitis prior to implant placement is recommended. Deep residual pockets with BoP jeopardize long-term implant success rates.^{6,18}

Lack of adherence to maintenance care: Implant survival and success rates are lower in patients not adhering to regular maintenance care programs.^{12,19}

Prevention: A recall interval tailored to a patient's risk profile (i.e. every 3 - 6 months) is recommended.^{14,21}

Tobacco use: Tobacco consumption leads to an increase in peri-implant soft tissue complications and to elevated peri-implant bone loss or implant loss.^{3,13,16,25}

Prevention: Smoking cessation protocols increase implant survival rates.⁴



Cleanable implant-supported restoration: Implant-supported restorations with inadequate access for plaque control exhibit an increased risk for peri-implantitis compared with those with good access for plaque control.²²

Prevention: Implant-supported restorations should provide unrestricted access for plaque control.

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