

Episode 142 – AO and AAP Consensus on Prevention and Management of Peri-Implant Diseases and Conditions: Part Two

October 10, 2025

Introduction

Dental implant-supported restorations enhance mastication, speech, and aesthetics to over one million individuals globally each year. However, as the number of dental implants increases worldwide, so does the prevalence of peri-implant diseases.[1] Although dental implants have a survival rate of nearly 95%, at least one in five individuals will develop peri-implant mucositis or peri-implantitis over their lifetime. Preventing, identifying, and managing risk factors are crucial in addressing peri-implant diseases. [1]

The Academy of Osseointegration (AO) and American Academy of Periodontology (AAP) developed a consensus report that integrates the best available evidence and expert opinion into a framework to prevent and manage peri-implant diseases and conditions.[2] [2]

The consensus report offers clinical recommendations and reference flowcharts to guide the management of peri-implant diseases and related complications. The report is founded on an evidence-based collaboration among periodontists, prosthodontists, general dentists, and oral surgeons who are actively involved in dental implant therapy.

At the consensus meeting, participants voted on their agreement with the presented statements. The degree of consensus was classified according to the following grading system:

- Unanimous (100% agreement),
- Strong consensus (greater than 95%),
- Consensus (75%-95%),
- Simple majority (50%-74%), or
- No consensus (less than 50%). [2]

This grading system was used to construct evidence-based flow diagrams to guide clinical decision-making. The final consensus papers were published across multiple journals.[3] [2]

---

[1] Refer to Episode 84 for additional information on peri-implant disease.
[2] Listen to Episode 141 for the initial discussion on the AO/AAP consensus report.
[3] Refer to the additional resources below for hyperlinks to the consensus papers.

Disclaimer: This document is educational and not intended to provide clinical advice nor should it be used as a replacement for professional dental or medical advice. Dental hygienists are encouraged to consult with CDHO practice advisors and refer to CDHO guidelines. Dental hygienists are responsible for the decisions they make and for the consequences associated with those decisions. © ODHA

Peri-implant diseases

There are two distinct peri-implant diseases: peri-implant mucositis and peri-implantitis.[4] Peri-implant mucositis affects up to 47% of individuals with dental implants, with peri-implantitis affecting up to 22%.[5] [2]

Peri-implant mucositis

Peri-implant mucositis is inflammation of the soft tissues surrounding a dental implant without loss of the supporting peri-implant bone beyond the initial remodelling phase. Peri-implant mucositis is primarily caused by dental plaque biofilm accumulation, which disrupts the host-microbe homeostasis at the implant-mucosa interface, leading to inflammation. Clinical signs of peri-implant mucositis include bleeding on gentle probing, erythema, swelling, and suppuration. Peri-implant mucositis is usually reversible with appropriate treatment. However, if not treated effectively, peri-implant mucositis may progress to peri-implantitis. [3]

Peri-implant mucositis therapy involves eliminating the causes of local inflammation, improving oral self-care,[6] and enrolling clients in personalized supportive peri-implant maintenance programs, with closer monitoring to prevent recurrence or progression of the disease. Peri-implant mucositis therapy is reported to be successful in arresting disease progression for up to 60% of cases. [4] [5]

Peri-implantitis

Peri-implantitis is characterized by progressive inflammation and bone loss around implants. Soft tissue inflammation is detected by bleeding on gentle probing, while progressive bone loss is identified on radiographs. [6]

Diagnosing peri-implantitis requires:

- Presence of bleeding and/or suppuration on gentle probing.
- Increased probing depths compared to previous clinical measurements.
- Radiographic evidence of bone loss beyond the initial crestal bone remodelling.

However, in cases when previous clinical data are unavailable, peri-implantitis diagnosis can be based on the combination of:

- Bleeding and/or suppuration on gentle probing,
- Probing depths 6 mm or greater, and
- Bone levels 3 mm or greater apical to the most coronal portion of the intraosseous implant. [4] [7]

Managing peri-implantitis can be very challenging. Peri-implantitis therapy options may include nonsurgical and surgical approaches, such as non-reconstructive, reconstructive methods, and, in some cases, removal of the implant. [4]

---

[4] Refer to Episode 84 for additional information on peri-implant disease.
[5] Refer to Episode 46 for discussion on the AAP classification of peri-implant diseases and conditions.
[6] Listen to Episode 89 for discussion on oral self-care.

Disclaimer: This document is educational and not intended to provide clinical advice nor should it be used as a replacement for professional dental or medical advice. Dental hygienists are encouraged to consult with CDHO practice advisors and refer to CDHO guidelines. Dental hygienists are responsible for the decisions they make and for the consequences associated with those decisions. © ODHA

The primary challenge in effectively treating peri-implant disease, whether through nonsurgical or surgical interventions, is the ability to debride and decontaminate the implant surface thoroughly. This task is difficult because most implant surfaces are roughened or enhanced at the micro- or nano-level. Various mechanical and chemical decontamination methods have been proposed, including curettes, ultrasonic scalers, chlorhexidine, citric acid, air polishing devices, implantoplasty, lasers, and combinations of these approaches. These techniques aim to halt the progression of the disease and promote reosseointegration of the implant, ensuring long-term stability and the maintenance of peri-implant health. [4]

Managing peri-implant disease risk

The clinical translation paper by Fiorellini et al. (2025) provides clinical recommendations and flowcharts to manage peri-implant diseases and related complications based on expert opinions and the scientific evidence discussed at the AO/AAP consensus event. [4]

Peri-implant diseases are associated with several predisposing and precipitating risk factors, such as:

- Smoking[7]
- Dental plaque biofilm accumulation and oral self-care
- History of periodontal disease
- Diabetes[8]
- Obesity and metabolic syndrome[9]
- Prosthetic factors

Smoking

Smoking significantly impacts mucosal barrier function, immune response,[10] and peri-implant sulcus microbiota. The intensity and duration of smoking are crucial factors that exacerbate the risk of peri-implant diseases.

The consensus flowchart categorizes smokers into:

- Former smokers (i.e., greater than 11 years as a nonsmoker)
- Light smokers (i.e., less than 10 cigarettes per day)
- Heavy smokers (i.e., more than 10 cigarettes per day). [4]

Current and recent former smokers (quit within the last 10 years) are at a high risk for developing peri-implant diseases, with the highest risk in heavy smokers. [2] [4]

Management strategy

Smoking cessation is recommended for heavy smokers, which may include intensive counselling, behavioural therapy, and pharmacologic aids. Light smokers, while at lower risk than heavy smokers, still require education on the potential impacts of smoking on

[7] Listen to Episode 101 for discussion on tobacco use and cessation.
[8] Refer to Episodes 91, 93, and 94 for additional information on diabetes and oral health.
[9] Refer to Episodes 120, 121, and 122 for detailed discussion on obesity and oral health.
[10] Refer to Episodes 44 and 45 for additional information on the immune system.

Disclaimer: This document is educational and not intended to provide clinical advice nor should it be used as a replacement for professional dental or medical advice. Dental hygienists are encouraged to consult with CDHO practice advisors and refer to CDHO guidelines. Dental hygienists are responsible for the decisions they make and for the consequences associated with those decisions. © ODHA

dental implant health and are advised to reduce or stop smoking. Regular follow-up appointments and thorough plaque biofilm control strategies are critical in smokers. For former smokers, it is vital to maintain the health of the peri-implant tissues through continued oral self-care, including regular follow-up appointments and client education. [2] [4]

Biofilm accumulation and oral self-care

Biofilm accumulation is a primary cause of peri-implant mucositis and peri-implantitis. The presence of biofilm triggers an inflammatory response in peri-implant tissues, characterized by erythema, swelling, bleeding on gentle probing, and occasionally exudate. To detect biofilm on dental implant surfaces, a thorough clinical examination is essential, which may involve using a disclosing solution to help visualize the biofilm. Clients with deficient oral hygiene or limited manual dexterity are at a higher risk for plaque biofilm accumulation, underscoring the need for early and frequent interventions to prevent peri-implant diseases. [4]

Management strategy

Managing biofilm accumulation involves using implant-safe instruments such as titanium curettes, specialized ultrasonic scalers for dental implants (e.g., with carbon or plastic tips), and air polishing devices (e.g., with glycine or erythritol powder). These tools are designed to disrupt and remove biofilm without damaging the dental implant surface. [4]

Adjunctive chemical agents may be used to further reduce the microbial load, such as chlorhexidine, hydrogen peroxide, and saline. Systemic or localized antibiotic therapy may be considered when significant inflammation is present or when mechanical debridement alone is insufficient. Options for antibiotic therapy include the local delivery of minocycline microspheres, particularly in areas with persistent inflammation. [4]

Regular monitoring and educating clients on daily oral self-care practices are essential for preventing recurrence. Additionally, supportive peri-implant therapy (e.g., every 3 to 4 months) is recommended to manage and prevent the progression of peri-implant disease. [4]

History of periodontal disease

A history of periodontal disease is a critical factor predisposing clients to peri-implant diseases, underscoring the importance of a thorough periodontal assessment. This includes reviewing the client's:

- Previous periodontal treatment,
- Current periodontal health status, and
- Any residual effects of previous oral disease.

Clients with a history of severe or untreated periodontitis are at a greater risk for peri-implant mucositis leading to peri-implantitis due to the possibility of unresolved inflammation. [4]

Active periodontitis is a significant risk factor for peri-implantitis. Clients with ongoing periodontal disease, indicated by clinical signs such as increased probing depths,

Disclaimer: This document is educational and not intended to provide clinical advice nor should it be used as a replacement for professional dental or medical advice. Dental hygienists are encouraged to consult with CDHO practice advisors and refer to CDHO guidelines. Dental hygienists are responsible for the decisions they make and for the consequences associated with those decisions. © ODHA

bleeding on probing, and radiographic evidence of bone loss, are highly susceptible to peri-implant inflammation and subsequent bone loss around dental implants. A comprehensive periodontal examination is recommended to identify these indicators. Sites with untreated or poorly managed periodontitis significantly increase the risk of peri-implantitis. These sites require immediate and targeted intervention. [4]

Management strategy

For clients with a history of periodontitis on a reduced periodontium, it is essential to prevent recurrence to lower the risk of peri-implant complications after placement. This prevention may require a combination of nonsurgical maintenance and possibly reintroducing phase one periodontal therapy.[11] Surgical intervention may be needed if there is advanced periodontal recurrence (i.e., stages 3 or 4 periodontitis). [4]

Similar to active disease cases, surgical interventions, including flap alone (with or without resection or regeneration), may be necessary to restore periodontal health if phase one therapy fails to resolve the disease. When stability is achieved, clients should return to a long-term maintenance program that includes frequent periodontal assessments to monitor for signs of inflammation and professional debridement. [4]

Diabetes

Poorly controlled diabetes is a significant risk factor for peri-implant mucositis and peri-implantitis. Glycemic control is assessed through fasting blood glucose levels or HbA1c measurements. Clients with fasting glucose levels greater than 7.0 mmol/L or HbA1c levels above 7% are considered to have poorly controlled diabetes. Clients with diabetes require close monitoring to identify any early signs of peri-implant disease. [4]

Management strategy

Managing peri-implant disease in clients with diabetes requires a collaborative approach. Achieving and maintaining glycemic control is crucial. This involves working with the client's primary care provider or endocrinologist to optimize diabetes management. [4]

In addition, thorough oral self-care practices are essential. Mechanical debridement is recommended to maintain biofilm control and prevent further inflammation. Antiseptic agents, such as chlorhexidine or phenolic rinses,[12] can be combined as adjunctive treatments, although they have not shown significant effects. [4]

Clients should be educated on the importance of maintaining excellent oral self-care and regular appointments for supportive peri-implant therapy and monitoring. [4]

Obesity and metabolic syndrome

Obesity and metabolic syndrome are associated with a higher risk of peri-implant diseases due to their effect on systemic inflammation and immune response. A body

[11] Refer to Episodes 128 and 129 for additional information on periodontal therapy.
[12] Refer to Episode 103 for information on the role of mouthrinses in oral care.

Disclaimer: This document is educational and not intended to provide clinical advice nor should it be used as a replacement for professional dental or medical advice. Dental hygienists are encouraged to consult with CDHO practice advisors and refer to CDHO guidelines. Dental hygienists are responsible for the decisions they make and for the consequences associated with those decisions. © ODHA

mass index (BMI) of 30 kg/m² or higher indicates obesity, which is associated with chronic low-grade inflammation that can exacerbate peri-implant tissue inflammation. [4]

Metabolic syndrome is a group of conditions that increase the risk of cardiovascular diseases[13] and type 2 diabetes. These conditions include hypertension, high blood glucose levels, excess fat around the waist, and high cholesterol or triglyceride levels. Metabolic syndrome is characterized by having three or more of these conditions. [8]

Assessing clients' metabolic health is recommended, including BMI, waist circumference, triglyceride levels, HDL cholesterol, blood pressure,[14] and fasting glucose levels to determine their risk of peri-implant disease. [4]

Management strategy

A comprehensive approach is recommended to improve metabolic health and reduce inflammation for clients with obesity or metabolic syndrome, including encouraging weight loss through dietary changes, increasing physical activity, and managing conditions, such as high cholesterol, hypertension, and insulin resistance. [4]

Client education on dental implant care is essential. Regular follow-up appointments should be scheduled to provide supportive peri-implant therapy, monitor the client's progress in managing their metabolic health, and make any necessary adjustments to their peri-implant care routine. Addressing both local and systemic factors can significantly reduce the risk of peri-implant diseases. [4]

Prosthetic factors

Addressing prosthetic factors is crucial to preventing peri-implant diseases. The implant-abutment interface is an area where peri-implantitis can develop. Abutment-related factors include:

- Platform-switched abutments
- Abutment height
- Emergence profile
- Implant-abutment connection

Platform-switched abutments

Peri-implant disease risk is significantly influenced by whether the dental implant system uses a platform-switched or platform-matched design. Platform-switched abutments, where the abutment has a smaller diameter than the implant platform, have demonstrated a reduced risk of peri-implant bone loss by shifting the inflammatory response away from the implant shoulder. [4]

Abutment height

Abutment height also influences peri-implant health, impacting soft tissue support and plaque biofilm control. Abutments shorter than 2 mm may contribute to crestal bone remodelling, as they do not provide sufficient vertical space for stable soft tissue

[13] Listen to Episodes 79, 80, and 81 for additional information on cardiovascular diseases and oral health.
[14] Refer to Episodes 135, 136, and 137 for discussion on blood pressure and oral health.

Disclaimer: This document is educational and not intended to provide clinical advice nor should it be used as a replacement for professional dental or medical advice. Dental hygienists are encouraged to consult with CDHO practice advisors and refer to CDHO guidelines. Dental hygienists are responsible for the decisions they make and for the consequences associated with those decisions. © ODHA

attachment. In contrast, abutments with a height of 2 mm or greater are usually preferred, as they facilitate adequate soft tissue adhesion, which serves as a protective barrier against bacterial penetration. Moreover, shorter abutments can result in an unfavourable crown emergence profile, complicating oral self-care and increasing the risk of peri-implant disease. [4]

Emergence profile

The emergence profile of an implant restoration plays a critical role in peri-implant health, as it affects the client's ability to maintain effective oral hygiene around the implant. Emergence angles greater than 30 degrees are at a higher risk of plaque accumulation due to the increased difficulty in accessing and cleaning these areas. A convex emergence profile is problematic, as it creates undercuts where plaque can accumulate, further increasing the risk of peri-implant inflammation and subsequent bone loss. Therefore, careful consideration of the emergence profile during the prosthetic planning and fabrication stages is essential to reduce these risks and promote long-term dental implant success. [4]

Dental implant-abutment connection

The type of dental implant-abutment connection plays a critical role in maintaining peri-implant health. Internal connections are usually preferred due to their mechanical stability and reduced micromovements compared to external connections. Internal connections typically provide a tighter seal at the implant-abutment interface, which minimizes bacterial infiltration and decreases the risk of peri-implantitis. In contrast, external connections are more susceptible to mechanical complications, such as screw loosening, and tend to create larger microgaps that can harbour bacteria, increasing the risk of peri-implantitis. In some cases, external connections may still be indicated, such as compatibility with specific dental implant systems. However, they require more rigorous monitoring and maintenance protocols. [4]

Additional abutment-related factors that can influence the risk of peri-implantitis include:

- Frequent abutment removal can disrupt the soft tissue seal around the dental implant, leading to bacterial colonization and subsequent inflammation.
- CAD/CAM custom abutments are preferred over standard or stock abutments, as they offer a more precise fit and improved soft tissue support, enhancing the biological seal.
- Large gaps between implant and abutment connections or misalignment during abutment placement can create spaces for biofilm development.
- Splinted restorations provide greater stability in full-arch rehabilitations. However, they may hinder oral hygiene if not designed to facilitate oral self-care. [4]

Managing peri-implant mucositis

Peri-implant mucositis management involves a comprehensive approach aiming to:

- Eliminate inflammation,
- Prevent progression to peri-implantitis, and
- Maintain long-term peri-implant health.

Disclaimer: This document is educational and not intended to provide clinical advice nor should it be used as a replacement for professional dental or medical advice. Dental hygienists are encouraged to consult with CDHO practice advisors and refer to CDHO guidelines. Dental hygienists are responsible for the decisions they make and for the consequences associated with those decisions. © ODHA

The first step is nonsurgical mechanical debridement using dental implant-safe instruments (e.g., titanium curettes, specialized ultrasonic scalers, and air-polishing devices) to effectively disrupt and remove biofilm without damaging the dental implant surface. Disclosing agents can be used to visualize dental plaque biofilm accumulation and enhance client education. [4]

Ideal decontamination methods aim to completely remove plaque biofilm from all surfaces of the implant while avoiding the release of titanium particles, preventing any alterations to the implant surface, and minimizing residual traces from the decontamination tools themselves. [9]

Titanium degradation may contribute to the initiation and progression of peri-implant diseases. Titanium particles released due to wear or corrosion may cause local inflammation and impact peri-implant health. Although some studies indicate a potential association, the clinical evidence remains inconclusive. Therefore, further research is needed to understand the role of titanium degradation. [2] [8]

If mechanical debridement alone is insufficient, adjunctive therapies may be considered, such as:

- Chemical irrigation
- Local antimicrobial delivery
- Laser therapy
- Probiotics[15]

Chemical irrigation

Adjunctive chemical irrigation with agents such as chlorhexidine gluconate (0.12% to 0.2%), hydrogen peroxide, or saline may be considered to further reduce bacterial load and inflammation.

Chlorhexidine

Chlorhexidine is used in oral healthcare due to its broad-spectrum efficacy and substantivity. While it can reduce microbial load, its penetration into subgingival areas is limited. Side effects such as tooth staining and altered taste also impact client compliance. There was no consensus at the AO/AAP consensus meeting on whether chlorhexidine is recommended as an adjunct to nonsurgical debridement to treat peri-implant mucositis, with 48% agreeing, 36% disagreeing, and 16% remaining neutral. The mixed responses suggest some clinicians find chlorhexidine beneficial, while others are hesitant to recommend its use due to its limitations. [2] [4]

Hydrogen peroxide

Subgingival irrigation with hydrogen peroxide may offer antimicrobial benefits, but its efficacy is questionable due to rapid decomposition and limited tissue penetration. Additionally, overuse may harm the surrounding tissues. More evidence is required to support its routine use. [4]

[15] Refer to Episode 63 for additional information on probiotics and the oral microbiome.

Disclaimer: This document is educational and not intended to provide clinical advice nor should it be used as a replacement for professional dental or medical advice. Dental hygienists are encouraged to consult with CDHO practice advisors and refer to CDHO guidelines. Dental hygienists are responsible for the decisions they make and for the consequences associated with those decisions. © ODHA

Local antimicrobial delivery

In cases of localized deep probing depths, antimicrobial delivery systems, such as minocycline microspheres (e.g., Arestin), can be applied directly into the peri-implant sulcus to target resistant bacterial colonies. However, current evidence remains inconclusive. Local antibiotics can target specific pathogens. However, concerns exist regarding their use for peri-implant mucositis due to antibiotic resistance,[16] cost, and inconsistent clinical outcomes. Many clinicians at the consensus event prefer mechanical debridement and improved oral self-care over the use of antibiotics. [4]

Laser therapy

If dental implant probing depths approach 6 mm without radiographic evidence of bone loss, laser therapy (e.g., Nd:YAG, CO_2, diode, or Er:YAG) may be considered as an adjunctive treatment. Laser therapy offers potential benefits, such as reduced bacterial growth and enhanced healing. However, the evidence is mixed in its effectiveness compared to traditional therapies, highlighting the need for more conclusive studies. High costs and the need for specialized training may also limit its use. [4]

Probiotics

Probiotics have emerged as an adjunct to managing peri-implantitis. Probiotics typically comprise strains of *Lactobacillus* and *Bifidobacterium*, which are known for their antimicrobial and anti-inflammatory properties. Probiotics may help modulate the oral microbiome, but evidence supporting their efficacy in peri-implant mucositis is limited and inconsistent. [4]

Supportive peri-implant therapy

Clients should be on a supportive peri-implant therapy regimen scheduled every 3 to 4 months, depending on the client's risk profile. Each visit should include professional mechanical debridement as required and potentially adjunctive treatments if biofilm accumulation is detected. Client education is crucial, emphasizing daily oral self-care such as using soft-bristled toothbrushes, interdental brushes, and antimicrobial rinses to prevent plaque accumulation. The combination of professional intervention and thorough at-home care is essential to reverse inflammation, prevent peri-implantitis progression, and ensure long-term peri-implant health. [4]

Managing peri-implantitis

Peri-implantitis management consists of nonsurgical and surgical therapies.

Nonsurgical management

Nonsurgical management of peri-implantitis is the first line of treatment to address early to moderate inflammation and minimal bone loss around dental implants. The primary goal of nonsurgical therapy is to reduce bacterial biofilm and inflammation while preserving the dental implant and surrounding bone. [4]

[16] Refer to Episode 100 for discussion on antimicrobial resistance.

Disclaimer: This document is educational and not intended to provide clinical advice nor should it be used as a replacement for professional dental or medical advice. Dental hygienists are encouraged to consult with CDHO practice advisors and refer to CDHO guidelines. Dental hygienists are responsible for the decisions they make and for the consequences associated with those decisions. © ODHA

Mechanical debridement involves the use of dental implant-safe instruments (e.g., titanium curettes, ultrasonic scalers with plastic or carbon tips, or air polishing devices[17]) to disrupt biofilm on dental implant surfaces without significantly altering the implant surface. Other tools, such as a titanium brush, may be used when implant threads are exposed. Together with mechanical debridement, adjunctive therapies may enhance outcomes. However, there are variable conclusions in the literature. Adjunctive therapies include chemotherapeutic agents, antibiotics, and lasers. [2] [4]

Chemotherapeutic agents

Chemotherapeutic agents (e.g., chlorhexidine, hydrogen peroxide, and saline) are one of the most commonly used adjuncts. These agents are applied topically or used in subgingival irrigation to reduce bacterial load. [4]

Antibiotics

Systemically or locally delivered antibiotics can also be considered in cases with significant inflammation or infection. Antibiotics can be delivered locally (e.g., minocycline microspheres) into the peri-implant pocket to target the infection site. Systemic antibiotics, such as a combination of amoxicillin and metronidazole, may be prescribed to control widespread infection. [4]

Lasers

Lasers (e.g., Nd:YAG, CO_2, diode, and Er:YAG) have been investigated for their ability to decontaminate dental implant surfaces and reduce inflammation, with the potential benefit of tissue healing and biostimulation. [4]

Surgical management of peri-implantitis

Surgical management must be considered if nonsurgical therapy proves ineffective. Surgical management of peri-implantitis aims to:

- Preserve the dental implant to avoid removal and restore health,
- Provide access to the dental implant surface for professional debridement and at-home care,
- Reconstruct lost bone, and
- Prevent further disease progression. [4]

Surgical treatment consists of non-reconstructive and reconstructive therapies, with the common goals of decontaminating the dental implant surface and reducing peri-implant pocket depth. Non-reconstructive surgeries aim to provide access to remove biofilm, decontaminate the dental implant surface, and reduce pocket depth, though disease resolution remains a challenge in some cases. [2]

Reconstructive surgeries aim to gain bone and restore the architecture of peri-implant bone, either alone or in combination with soft tissue augmentation. These techniques have shown potential in achieving greater pocket depth reduction and peri-implant bone gain. However, their effectiveness in decreasing mucosal inflammation and preventing disease recurrence is limited. [2]

[17] Refer to Episode 35 for additional information on air polishing.

Disclaimer: This document is educational and not intended to provide clinical advice nor should it be used as a replacement for professional dental or medical advice. Dental hygienists are encouraged to consult with CDHO practice advisors and refer to CDHO guidelines. Dental hygienists are responsible for the decisions they make and for the consequences associated with those decisions. © ODHA

Dental implant removal
Dental implant removal, also referred to as explantation, may become necessary when peri-implantitis leads to:

- Severe bone loss greater than 50% of the dental implant length,
- Non-regenerable defects,
- Recurrent infections unresponsive to treatment, or
- Compromised dental implant stability. [4]

The decision to remove a dental implant is based on a comprehensive clinical and radiographic assessment, considering factors such as the extent of bone loss, dental implant mobility, and client-specific risk factors (e.g., systemic health conditions, poor oral hygiene), and/or compromising adjacent teeth or dental implants. The main goal of dental implant removal is to preserve as much surrounding bone and soft tissue as possible for future rehabilitation. [4]

Thorough debridement of the site is crucial after implant removal to eliminate any residual infected tissue. Depending on the size of the defect, bone grafting procedures may be performed immediately to regenerate lost bone and prepare the site for possible future dental implant placement. [4]

Supportive peri-implant therapy
Supportive peri-implant therapy is crucial for long-term peri-implant health and preventing disease, especially following treatment of peri-implant mucositis and peri-implantitis. Supportive peri-implant therapy requires client-specific intervals based on their overall risk profile. Clients at high risk, including those with a history of periodontitis, smoking, poorly controlled diabetes, complex prosthetic restorations, or significant plaque accumulation, require more frequent supportive peri-implant therapy appointments, typically every 3 to 4 months. These intervals are necessary for early detection and management of any signs of peri-implant disease. In contrast, clients at low risk may be scheduled for supportive peri-implant therapy appointments every 5 to 6 months, provided their peri-implant tissues remain stable with no signs of disease. [4]

Supportive peri-implant therapy involves:

- Monitoring peri-implant health
- Reinforcing oral self-care practices
- Professional debridement to remove dental plaque biofilm and calculus using dental implant-safe instruments.

Clients should receive detailed guidance on oral self-care, including the use of soft-bristled or implant-specific toothbrushes and daily interdental cleaning with implant-safe interdental brushes, floss, and oral irrigation devices as required. [2] [4]

Client education should include lifestyle recommendations such as smoking cessation, glycemic control in clients with diabetes, and also teaching clients to recognize early symptoms of peri-implant disease, such as bleeding, swelling, or discomfort, to facilitate prompt professional intervention. [4]

Disclaimer: This document is educational and not intended to provide clinical advice nor should it be used as a replacement for professional dental or medical advice. Dental hygienists are encouraged to consult with CDHO practice advisors and refer to CDHO guidelines. Dental hygienists are responsible for the decisions they make and for the consequences associated with those decisions. © ODHA

During supportive peri-implant therapy appointments, clinicians should assess the condition of the soft tissues and the implant-abutment interface and perform periodic radiographic assessment to monitor marginal bone stability as indicated. [2] [4]

Any signs of inflammation or tissue deterioration require immediate intervention, which may include additional mechanical debridement, use of antiseptic agents (e.g., chlorhexidine), localized antibiotic therapy, and possibly surgical intervention. [4]

Ongoing client education is essential for clients to understand the importance of daily oral self-care in preventing peri-implant disease. The client risk profile should be regularly reassessed, especially after the first year of dental implant therapy, to determine whether supportive peri-implant therapy intervals require adjusting. [4]

Take home messages

- Managing dental implant diseases, such as peri-implant mucositis and peri-implantitis, has become increasingly important with the exponential increase in dental implant placement.
- Proper treatment planning, risk analysis, dental implant design and placement, and continuing maintenance are critical to ensure long-term dental implant success.
- Thorough oral self-care to control biofilm is vital for the long-term success of dental implant therapy.
- Proper oral self-care instruction effectively minimizes the risk of peri-implant diseases, underscoring the importance of client education and prevention.
- Regular client-specific supportive peri-implant maintenance appointments, with intervals ranging from 3 to 6 months based on risk assessments are also necessary to prevent disease and identify issues early.
- Continued research is essential to enhance the understanding of peri-implant diseases, their associated risk factors and indicators, and to improve management strategies for the increased success of dental implants.

References

[1] P. Kumar, J. Kan, M. Galarraga-Vinueza, et al., "Risk for peri-implant diseases and defects: Report of workgroup 1 of the joint AO/AAP consensus conference on prevention and management of peri-implant diseases," *Clinical Advances in Periodontics,* vol. 15, no. 2, pp. 93-102, 9 June 2025.

[2] H. Wang, G. Avila-Ortiz, A. Monje, et al., "AO/AAP consensus on prevention and management of peri-implant diseases and conditions: Summary report," *Journal of Periodontology,* vol. 96, no. 6, pp. 519-541, 12 June 2025.

[3] L. Heitz-Mayfield and G. Salvi, "Peri-implant mucositis," *Journal of Periodontology,* vol. 89, no. S1, pp. S257-S266, 21 June 2018.

[4] J. Fiorellini, S. Mojaver, H. Sarmiento and T. Aghaloo, "Clinical translation of the 2024 AO/AAP consensus on prevention and management of peri-implant diseases and conditions," *The International Journal of Periodontics & Restorative Dentistry,* vol. 45, no. 6, pp. s1-s23, 6 June 2025.

Disclaimer: This document is educational and not intended to provide clinical advice nor should it be used as a replacement for professional dental or medical advice. Dental hygienists are encouraged to consult with CDHO practice advisors and refer to CDHO guidelines. Dental hygienists are responsible for the decisions they make and for the consequences associated with those decisions. © ODHA

[5] C. Garaicoa-Pazmino, E. Couso-Queiruga, A. Monje, et al., "Disease resolution following the treatment of peri-implant diseases: A systematic review," *International Journal of Periodontics & Restorative Dentistry,* pp. 115-133, 4 January 2025.

[6] F. Schwarz, J. Derks, A. Monje and H. Wang, "Peri-implantitis," *Journal of Periodontology,* vol. 89, no. S1, pp. S267-S290, 21 June 2018.

[7] D. Herrera, T. Berglundh, F. Schwarz, et al., "Prevention and treatment of peri-implant diseases—The EFP S3 level clinical practice guideline," *Journal of Clinical Periodontology,* vol. 50, no. S26, pp. 4-76, 4 June 2023.

[8] Mayo Clinic, "Metabolic syndrome," 1 April 2025. [Online]. Available: https://www.mayoclinic.org/diseases-conditions/metabolic-syndrome/symptoms-causes/syc-20351916. [Accessed 25 September 2025].

[9] A. Ravidà, D. Dias, R. Lemke, P. Rosen and M. Bertolini, "Efficacy of decontamination methods for biofilm removal from dental implant surfaces and reosseointegration: An AAP/AO systematic review on peri-implant diseases and conditions," *The International Journal of Oral & Maxillofacial Implants,* vol. 40, suppl 1, pp. s91-s160, 6 June 2025.

Client Resources

Dental Implants, ODHA factsheet
https://odha.on.ca/wp-content/uploads/2016/08/ODHA-Facts-Dental-Implants.VFS23.3.pdf

Smoking and Smokeless Tobacco, ODHA factsheet
https://odha.on.ca/wp-content/uploads/2016/08/ODHA-Facts-Smoking.VFS19.1-copyright.pdf

Diabetes and Oral Health, ODHA factsheet
https://odha.on.ca/wp-content/uploads/2016/08/ODHA-Facts-Diabetes.VFS24.5.pdf

Periodontal (Gum) Disease, ODHA factsheet
https://odha.on.ca/wp-content/uploads/2016/08/Gum-Disease.14.1-copyright.pdf

Additional Resources

AO/AAP consensus on prevention and management of peri-implant diseases and conditions: Summary report, Wang, H; Avila-Ortiz, G; Monje, A; et al. *Journal of Periodontology*, Volume 96, Issue 6, June 12, 2025, p 519-541
https://aap.onlinelibrary.wiley.com/doi/full/10.1002/JPER.25-0270

Prevalence, incidence, systemic, behavioral, and patient-related risk factors and indicators for peri-implant diseases: An AO/AAP systematic review and meta-analysis, Galarraga-Vinueza, M; Pagni, S; Finkelman, M; et al. *Journal of Periodontology*, Volume 96, Issue 6, June 9, 2025, p 587-633
https://aap.onlinelibrary.wiley.com/doi/10.1002/JPER.24-0154

Disclaimer: This document is educational and not intended to provide clinical advice nor should it be used as a replacement for professional dental or medical advice. Dental hygienists are encouraged to consult with CDHO practice advisors and refer to CDHO guidelines. Dental hygienists are responsible for the decisions they make and for the consequences associated with those decisions. © ODHA

Surgical- and implant-related factors and onset/progression of peri-implant diseases: An AO/AAP systematic review, Monje, A; Barootchi, S; Rosen, P; Wang, H. *Journal of Periodontology*, Volume 96, Issue 6, June 9, 2025, p 542-561 https://aap.onlinelibrary.wiley.com/doi/10.1002/JPER.24-0083

The influence of prosthetic designs on peri-implant bone loss: An AO/AAP systematic review and meta-analysis, Lin, G; Lee, E; Barootchi, S; et al. *Journal of Periodontology*, Volume 96, Issue 6, June 9, 2025, p 634-651 https://aap.onlinelibrary.wiley.com/doi/10.1002/JPER.24-0144

Prevalence, incidence, risk, and protective factors for soft tissue dehiscences at implant sites in the absence of disease: An AO/AAP systematic review and meta-regression analysis, Tavelli, L; Shayan Barootchi, S. *Journal of Periodontology*, Volume 96, Issue 6, June 9, 2025, p 562-586 https://aap.onlinelibrary.wiley.com/doi/10.1002/JPER.24-0119

Risk for peri-implant diseases and defects: Report of workgroup 1 of the joint AO/AAP consensus conference on prevention and management of peri-implant diseases, Kumar, P; Kan, J; Galarraga-Vinueza, M; et al. *Clinical Advances in Periodontics*, Volume 15, Issue 2, June 9, 2025, p 93-102 https://aap.onlinelibrary.wiley.com/doi/10.1002/cap.10367

Efficacy of decontamination methods for biofilm removal from dental implant surfaces and reosseointegration: An AAP/AO systematic review on peri-implant diseases and conditions, Ravidà, A; Dias, D; Lemke, R; Rosen, P; Bertolini, M. *The International Journal of Oral & Maxillofacial Implants*, Volume 40, Suppl 1, June 6, 2025, p s91-s160 https://www.quintessence-publishing.com/usa/en/article-download/6246721/the-international-journal-of-oral-maxillofacial-implants/2025/supplement/efficacy-of-decontamination-methods-for-biofilm-removal-from-dental-implant-surfaces-and-reosseointegration-an-aap/ao-systematic-review-on-peri-implant-diseases-and-conditions

Clinical translation of the 2024 AO/AAP consensus on prevention and management of peri-implant diseases and conditions, Fiorellini, J; Mojaver, S; Sarmiento, H; Aghaloo, T. *The International Journal of Periodontics & Restorative Dentistry*, Volume 45, June 6, 2025, s1-s23 https://www.quintessence-publishing.com/usa/en/article-download/6261577/international-journal-of-periodontics-restorative-dentistry/2025/supplement/clinical-translation-of-the-2024-ao/aap-consensus-on-prevention-and-management-of-peri-implant-diseases-and-conditions

Treatment of peri-implant mucositis: An AAP/AO systematic review and meta-analysis, Lin, G; Chambrone, L; Rajendran, Y; Avila-Ortiz, G. *The International Journal of Oral & Maxillofacial Implants*, Volume 40, Supp 1, June 6, 2025, p s49-s72 https://www.quintessence-publishing.com/usa/en/article-download/6246678/the-international-journal-of-oral-maxillofacial-implants/2025/supplement/treatment-of-peri-implant-mucositis-an-aap/ao-systematic-review-and-meta-analysis

Disclaimer: This document is educational and not intended to provide clinical advice nor should it be used as a replacement for professional dental or medical advice. Dental hygienists are encouraged to consult with CDHO practice advisors and refer to CDHO guidelines. Dental hygienists are responsible for the decisions they make and for the consequences associated with those decisions. © ODHA

Surgical Reconstructive Therapy for the Management of Peri-implantitis: An AAP/AO Systematic Review and Network Meta-analysis, Barootchi, S; Monje, A; Sabri, H; Rosen, P; Wang, H. *The International Journal of Oral & Maxillofacial Implants*, Volume 40, Suppl 1, June 6, 2025, p s1-s48 https://www.quintessence-publishing.com/usa/en/article-download/6246584/the-international-journal-of-oral-maxillofacial-implants/2025/supplement/surgical-reconstructive-therapy-for-the-management-of-peri-implantitis-an-aap/ao-systematic-review-and-network-meta-analysis

Efficacy of nonreconstructive surgical treatment of peri-implantitis: An AAP/AO systematic review and meta-analysis of access flap versus osseous surgery procedures, Saleh, M; Misch, C; Alrmali, A; Neiva, R. *The International Journal of Oral & Maxillofacial Implants*, Volume 40, Suppl 1, June 6, 2025 s73-s90 https://www.quintessence-publishing.com/usa/en/article-download/6246692/the-international-journal-of-oral-maxillofacial-implants/2025/supplement/efficacy-of-nonreconstructive-surgical-treatment-of-peri-implantitis-an-aap/ao-systematic-review-and-meta-analysis-of-access-flap-versus-osseous-surgery-procedures

Peri-implant mucositis, Heitz-Mayfield, L; Salvi, G. *Journal of Periodontology*, Volume 89, Issue S1, June 21, 2018, p S257-S266 https://aap.onlinelibrary.wiley.com/doi/10.1002/JPER.16-0488

Peri-implantitis, Schwarz, F; Derks, J; Monje, A; Wang, H. *Journal of Periodontology*, Volume 89, Issue S1, June 21, 2018, p S267-S290 https://aap.onlinelibrary.wiley.com/doi/10.1002/JPER.16-0350

Prevention and treatment of peri-implant diseases—The EFP S3 level clinical practice guideline, Herrera, D; Berglundh, T; Schwarz, F; et al. *Journal of Clinical Periodontology,* Volume 50, Issue S26, June 4, 2023, p 4-76 https://onlinelibrary.wiley.com/doi/10.1111/jcpe.13823

Disclaimer: This document is educational and not intended to provide clinical advice nor should it be used as a replacement for professional dental or medical advice. Dental hygienists are encouraged to consult with CDHO practice advisors and refer to CDHO guidelines. Dental hygienists are responsible for the decisions they make and for the consequences associated with those decisions. © ODHA