

Implant Guidelines and Treatment

Step 1: Office Protocol

Diagnosis methodology:

1. Visual soft tissue assessment

Color, contour, consistency

Pink, firm, attached and keratinized tissues

Palpation (check for expression of subgingival plaque, purulence and/or bleeding)

Plaque

2. Probe at baseline and at signs of infection.

Probe: 6 months post abutment/crown placement

Light Force until resistance.

Plastic probe since bendable to get around crown contours

3. Assess for calculus and cement

4. Assess for mobility and/or pain

5. Assess bone level

PA: 6 months post abutment/crown placement (we do this as a courtesy for all implant patients)

6. Follow-up protocol

Diagnoses

Health: No bleeding; no exudate; probing depths < 4 mm; no bone loss; 4-6 months recall

Peri-mucositis: possible bleeding; possible exudate; probing depths > 4 mm; no bone loss; 3-4 month recall care.

(Equivalent to gingivitis with teeth)

Peri-implantitis: bleeding present; exudate present; pocket depths > 5mm; 2-3 mm of bone loss; 2-4 month recall care (2 week re-evaluation)

(Equivalent to periodontal disease with teeth)

Step 2: Reasons for implant complications

Implant / Teeth comparisons

Bone fused to implants similar to an ankylosed tooth.

Soft tissues adhere to implant abutment but does not attach like with teeth

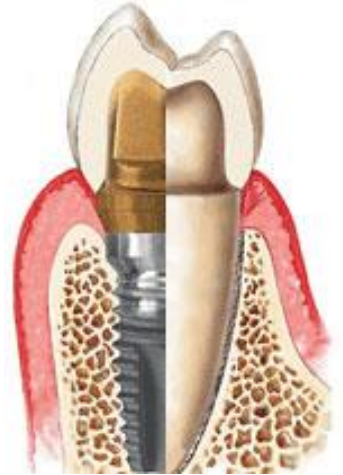
Protection of implant by way of maintaining the soft tissue seal is critical

Active periodontal disease bone loss puts implants at a very high risk for bone loss

Cement can be a problem if expressed from crown margin or is not radiographically detectable for removal (harbors plaque and calculus)

Teeth are not permanent and neither is an implant

Occlusal trauma / overload can lead to failure



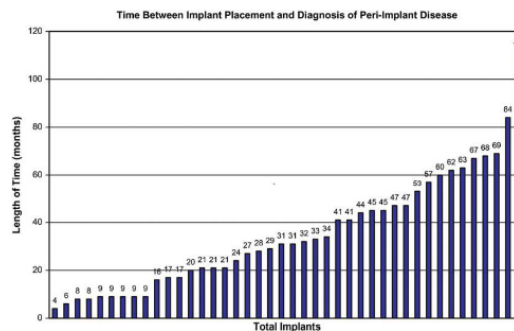
Cements

Recommended cements: radiopaque cements

Good: zinc phosphate; glass ionomer; polycarboxylate; zoe-based

Removal: Easier with zinc phosphate and zoe-based

Issues with cement will show up between 4 months and 18 years per the latest research



The Positive Relationship Between Excess Cement and Peri-Implant Disease: A Prospective Clinical Endoscopic Study

Thomas G. Wilson Jr.*

Summary of potential risk factors and examples of references related to evidence of their association with peri-implantitis

Risk Factor /Indicator	Low	Moderate	High	Supporting evidence Reference examples
Patient				
Periodontitis history	No		Yes	Derks 2016, Kordbacheh Changi 2019, Karoussis 2003, Ferreira 2006, Roccuzzo 2010, Costa 2012
Bone loss/Age	≤ 0.5	> 0.5 – 1.0	> 1.0	Kordbacheh Changi 2019, Roos-Jansaker 2006
Periodontitis susceptibility	Stage 1 Grade A/B	Stage 2 Grade A/B	Stage 3 Grade C	Cho-Yan Lee 2012, Derks 2016 Kordbacheh Changi 2019
BOP %	< 10%	10% – 25%	> 25%	Roos-Jansaker 2006, Luterbacher 2000, Costa 2012, Vignoletti 2019
N PD≥5 mm	≤ 2	3 – 6	> 6	Pjetursson 2012, Cho-Yan Lee 2012, Ferreira 2006, Koldslund 2011, Costa 2012
Supportive care SPT	Compliant	≤ 6 months	Casual/No	Costa 2012, Roccuzzo 2010,2012, Monje 2017, Ferreira 2006, Aguirre-Zorzano 2015
Medical status	Healthy		Compromised	Ferreira 2006, Renvert 2014
Tobacco smoking	0	1 – 19	≥ 20 cig	Roos-Jansaker 2006, Rinke 2011, Schwarz 2017
Prosthesis				
Cleanability	Good	Poor fit but supramucosal restorative margin	No access	Kordbacheh Changi 2019, Serino & Ström 2009, Heitz-Mayfield 2012, Katafuchi 2018
Fit/Design	Well-fitting		Ill-fitting	Kordbacheh Changi 2019
Submucosal excess cement	Screw-retained		Cement residue	Kordbacheh Changi 2019, Linkevicius 2013, Wilson 2009, Korsch 2015
Prosthetic margin to bone crest mm	Soft-tissue level	1.5 mm	< 1.5 mm	Derks 2016
Site				
Keratinised mucosa	Adequate (≥ 2 mm)	Minimal (< 2 mm)	Absence	Souza 2016, Ladwein 2015, Roccuzzo 2016

Step 3: Treatment Options

Non-Surgical

Plastic scalers for abutment cleaning only (can shred on roughened implant surface)

Ti implant scalers for roughened implant surfaces only (can mar smooth abutment surfaces)

Instrument access is always a concern

Localized antibiotics

Systemic antibiotics

New crown and possibly abutment

Instrumentation (Assess what you have at the office / for patients at home)

Plastic probes

Titanium implant scalers

Ultrasonic tips

Proxi-brushes

End Tuft Brush

Floss (e.g. Thorton floss)

Water flossers

Hybrids:

Removal of appliance every ~12-18 months depending on oral hygiene

Ensure a concave intaglio surface to prevent plaque and food accumulations

Surgical

Laser Peri-Implantitis Therapy: leaves threads for recolonization of plaque. More ideal if only slight crestal bone loss exposing 1-2mm of the implant surface

Thread Removal and Debridement: needs to completely smooth exposed threads; access can be an issue. Helps lessen plaque reaccumulations.

Implant disinfection and Bone Regeneration: 100% disinfection a significant challenge due to access and roughened implant surface. Can work but case selection extremely important

Maintenance

Cleaning every 6 months if excellent patient oral hygiene and no history of periodontal disease.

Schedule will mirror periodontal maintenance for periodontal disease patients, every 3-4 months.

Do not be hesitant to probe lightly or palpate the area.

Check occlusion to ensure not off-axis forces

Key questions to ask your team?

1. Do healthy gums / implants bleed?
2. How much disease and/or bone loss are you willing to tolerate?
3. What is your non-surgical protocol?
4. What is your radiographic protocol?
5. How do you determine patient's maintenance interval?
6. What evidence are you basing your decision on?

Implant Supplies

Premier 2 Pro Prophy Angle



Premier® Implant Scalers made of graphite



Brasseler Titanium ImplantPro currettes: Longer lasting.



Thorton Floss

