Implant Survival: It's in Your Hands!

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Learning Objectives:

- Learn to take AIM – *Assess*, *Identify* and *Monitor* – as a critical part of implant care
- Examine risk factors that can affect the success of implants and how to detect early problems such as implantitis
- Understand the implications of implant-induced caries
- Using an evidence-based approach and case studies, address why implants fail
- Implement evidence-based implant maintenance protocols
- Develop a self-care program to prevent implant failure

Are you ready to identify complications?

Assess

- Mechanical complications: an implant affected by stress or occlusal force often resulting in mobility
- Biological complications: include the hard and soft tissues

Clinical Feature	Implant	Tooth
Biological width	3.08 mm	2.04-2.91 mm
Pocket depth	2.5-5 mm	3 mm
Bleeding on probing	Less reliable indicator	Reliable indicator
Vascular supply	Small supply	Well-developed supply
Connection	Rigid Osteointegration	Resilient Bone/PDL/Cementum
Adaptability	none	PDL allows movement
Connective tissue fibers	Fibers run parallel to the implant	Fibers - horizontal/ oblique/ vertical/ perpendicular
In health a tight collar of tissue - barrier-prevention	Permucosal seal	Marginal gingiva

Seven Step Clinical Assessment

Sensation

- Asking how your clients implant is feeling
- The words they use are important
- Be very interested if they use words: Different, not painful but weird

Visual

- Gingival clinical markers

Palpate

- Place a finger on each side of the alveolar bone adjacent to the implant
- Starting at the apex, exerting a firm pressure on both sides sweep toward the crown
- Exudate will appear from the sulcus if infected Record

Resources

Bilich, L. (2018, September). Preventing Peri-Implantitis – Dimensions of Dental Hygiene. Retrieved from https://dimensionsofdentalhygiene.com/article/preventing-peri-implantitis/

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Renvert, S., Hirooka, H., Polyzois, I., Kelekis-Cholakis, A., & Wang, L. (2019). Diagnosis and non-surgical treatment of peri-implant diseases and maintenance care of patients with dental implants – Consensus report of working group 3. *International Dental Journal*, *69*(Suppl 2), 12-17. https://doi.org/10.1111/idj.12490

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Probe

- Record baseline measurements at 1 year post placement if there is no inflammation
  - 6 months post adjunctive bone regeneration procedures
- If probing depth changes –record, identify, report & treat as indicated
- Ideally pocket depth range is 2.5 – 5.0 mm with no signs of inflammation

Assessing for cement or calculus

- Check if floss catches/frayed indicates _____or calculus

Mobility

- Mobility with in the first year – a lack of integration
- If an implant is not integrated, it is a failing implant
- Mobility can be as a result of: _____ _____

Bone level

- Be aware implant cement may not be visible related to radiopacity
- Radiographic protocols
  - Surgical placement, Healing cap or screw cover, Prosthetic placement (check seating)
  - 6 months
  - 1-year intervals _____
- Types of radiographs
  - Vertical Bitewings or Periapical _____
  - Five implants or more _____
- Bone loss of 0.5-1.5 mm is considered acceptable in _____
- Followed by no more than 0.2 mm of vertical bone loss _____

Classification of Peri-implant Disease and Conditions 2017

Peri-implant health is characterized by absence of erythema, bleeding on probing, swelling, and suppuration.

- It is not possible to define a range of pocket depth compatible with health
- Peri-implant health can exist around implant with reduced bone support

Peri-implant mucositis is characterized by bleeding on gentle probing, erythema, swelling and/or suppuration may also be present.

- Increased probing depth is often present due to swelling and decreased probing resistance

Peri-implantitis is a plaque associated pathological condition occurring in tissues around implants, characterized by inflammation in the peri-implant mucosa and subsequent progressive loss of bone support.

- Peri-implantitis sites exhibit clinical signs of inflammation, bleeding on probing, and or suppuration, increased probing depth and/or recession of the mucosal margin in addition to radiographic bone loss

Peri-Implant Mucositis and Peri-Implantitis: A Current Understanding of Their Diagnoses and Clinical Implications AAP Position Paper Apr 2011 https://onlinelibrary.wiley.com/doi/full/10.1902/jop.2013.134001

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Gingival Inflammation Index (Loe and Silness 1963)

0:=Absence of inflammation
1=Mild inflammation characterized by slight colour change, little change in texture and no bleeding on probing
2=Moderate inflammation characterized by redness and swelling of the gingival and accompanied by bleeding on probing
3=Severe inflammation characterized by significant redness and hypertrophy, a tendency to bleed spontaneously, and ulceration

Resources New Classifications

New Classifications documents available at https://www.perio.org/2017wwdc

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Caton J, Armitage G, Berglundh T, et al. A new classification scheme for periodontal and peri-implant diseases and conditions– Introduction and key changes from the 1999classification. J Periodontol . 2018;89(Suppl 1):S1–S8. https://doi.org/10.1002/JPER.18-0157

Risk Factors for disease development

Shared risks for Periodontitis and Implantitis

- Smoking, Systemic disease, Self-care, Soft tissue defect, Alcohol

Additional risk factors of implantitis

- Previous history of periodontal disease, biofilm/bacterial exposure/trap, poor bone quality, implant surfaces, overload, micro-movements in the components, residual cement, short implants

Treatment Planning & Maintenance Guideline Documents:

Diagnosis and Non-surgical Treatment of Peri-implant Diseases and Maintenance Care of Patients with Dental Implants – consensus report of working group 3. International Dental Journal, 69, 12-17. Renvert, S., Hirooka, H., Polyzois, I., Kelekis- Cholakis, A., & Wang, H. (2019

Assessment

- Health, lifestyle, reporting on implants
- 7 Step Clinical Assessment
- Self-care assessment and revision
- Motivation, educate, demonstration of appropriate products
- Goal setting

Mechanical Instrumentation

_____ _____ _____

Document

Reassess interval related to assessment of risk of peri-implant disease and periodontal disease

Classification of peri-implant mucositis and peri-implant
Goal is to: Resolve the inflammation
Identify and eliminate/reduce local and systemic risk factors

Peri-implantitis

Early Peri-implantitis

- Within weeks of being placed
- Usually caused by contamination

Late Peri-implantitis

- Occur after integration and restoration Radiographic changes Tender to percussion

Where is the inflammation?

- Generalized (Teeth & Implants)
  - _____ _____ _____
  -

Crest+Oral B Patient Consultation Guide Chairside 2018 Classifications Periodontal and Peri-implant Disease Guide
http://www.dentalcare.ca/en-ca/perioguide

Resources Risk Factors

Peri-Implantitis and The Risk Factors. (2018, August). Retrieved from https://www.oralhealthgroup.com/features/peri-implantitis-risk-factors/

Oliveira, M. N., Schunemann, W. V., Mathew, M. T., Henriques, B., Magini, R. S., Teughels, W., & Souza, J. C. (2017, August 02). Can degradation products released from dental implants affect peri-implant tissues? Retrieved from https://onlinelibrary.wiley.com/doi/full/10.1111/jre.12479

Maintenance Resources

American College of Prosthodontists: Clinical practice guidelines (2016) Bidra, A. S., Daubert, D. M., Garcia, L. T., Kosinski, T. F., Nenn, C. A., Olsen, J. A., . . . Curtis, D. A. (2016, February). Clinical Practice Guidelines for Recall and Maintenance of Patients with Tooth-Borne and Implant-Borne Dental Restorations.
Retrieved from https://jada.ada.org/article/S0002-8177(15)01154-X/fulltext

Implant Maintenance Classifications from: Hempton TJ, Boncacci F, Lancaster D, Pechter J.Implant maintenance. Dimensions of Dental Hygiene. 2011;9(1):58—61. https://dimensionsofdentalhygiene.com/article/implant-maintenance/

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A Current Understanding of Their Diagnoses and Clinical Implications AAP Position Paper Apr 2011 https://onlinelibrary.wiley.com/doi/full/10.1902/jop.2013.134001

- Isolated
  - _____ _____ _____
- Non-surgical Peri-implant therapy is the first step in returning implant mucositis to health.
- Implantitis also require session of non-surgical therapy to assess healing rate and self-care.
- Repeated visits involving self-care assessment, motivation, education, and implementation of new dental aids to improve plaque control. Professional biofilm disruption with Air Flow, Perio Flow and accretion removal with appropriate titanium instruments and ultrasonic tip.

American College of Prosthodontists: Clinical practice guidelines (2016)
Bidra, A. S., Daubert, D. M., Garcia, L. T., Kosinski, T. F., Nenn, C. A., Olsen, J. A., . . . Curtis, D. A. Clinical Practice Guidelines for Recall and Maintenance of Patients with Tooth-Borne and Implant-Borne Dental Restorations.

Recall examination and care every 6 months as a lifelong regimen

- Higher risk related to age, ability to perform self-care complications and complexities of natural teeth or tooth-borne may need care and examination more often.

Shared clinical practice guidelines

- Extraoral, intraoral health and dental examination
- Self-care instruction
  - At-home maintenance recommendations for each client type
- Oral hygiene intervention (debridement of natural teeth, tooth-borne restorations, implant borne restorations or implant abutments)
  - Instruments compatible and appropriate for: teeth, implants abutments and restorations and power GPAP / EPAP
- Use of topical agents as deemed clinically necessary
  - If an antimicrobial agent is needed chlorhexidine gluconate is the agent of choice (non-alcohol)

- **Removable prosthetic case**
  - Professionally cleaned extraoral using mechanical and chemical methods
  - Detailed examination of the prosthetic -intraoral and extraoral
  - Evaluating fit, attachments, clasps, rings
  - Educate on client-care of prosthetic
  - Recommend adjustment, repair, replacement, or remake
- When a client exhibits signs and symptoms of parafunctional activates an occlusal device is indicated
- Recommend or prescribe oral agents and oral hygiene aids and regimens for self-care

Professional maintenance for clients with implant-borne fixed restorations

- Decision to remove is based on the client's ability and prosthetic contours (access)
  - Prosthetic to be evaluated intraoral and extraoral
  - Prosthetic screws to be assessed
  - Prosthetic to be mechanically cleaned

Notes

Critically evaluate peri-implant tissues and therapeutic outcomes to achieve optimal person-centered care!