

Stage 2 | Surgical procedures

Step 2

Post-operative review and suture removal

Surgical procedures

Step 2 | Post-operative review and suture removal

Overview

Assessment and treatment planning



Step 1 | Patient's expectations,
history and examination



Step 2 | Treatment planning



Step 3 | Consultation and consent



Step 4 | Fabrication of the surgical drill template

Surgical procedures



Step 1 | Implant surgery



Step 2 | Post-operative review and suture removal

7–10 days

6–8 weeks

Prosthetic procedures



Step 1 | Impression-taking



Step 2 | Fabrication of the final prosthesis



Step 3 | Insertion of the final prosthesis

2 weeks

Aftercare and maintenance



Step 1 | Review visit

3–6 months
(or as necessary)



Step 2 | Maintenance visit



In clinic with patient



Office / Lab work

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Surgical procedures

Step 2 | Post-operative review and suture removal

Introduction



Introduction

This visit should take place about **7-10 days after** the implant surgery. Depending on the patient and any complications during or after surgery, a second follow-up visit may be required in another 3 weeks' time. Review with the patient whether his or her normal oral hygiene procedures can be resumed. Tooth brushing directly on the surgical site should have been discouraged at the last visit, in order not to disturb the healing site after surgery. Check that the patient has maintained adequate plaque control by using regular antiseptic mouthrinse during the first 2 weeks after surgery.

Review the patient 7-10 days after surgery to check on:

- postoperative recovery
- healing
- ability to maintain good oral hygiene








Surgical procedures

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Learning
objectives



Learning objectives

-  Know how to assess the healing site.
-  Be able to recognize and treat compromised wound-healing situations.
-  Know what to do in case of other post-operative complications.



The following steps should be performed during this visit:

- Assessment of the healing surgical site
- Suture removal and oral hygiene instructions
- Handling of complications (if necessary)



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Assessment of
the healing
surgical site



1. Assessment of the healing surgical site

1.1 Patient's feedback

Obtain the patient's feedback on any symptoms experienced during the post-operative and healing period.

Ask the patient about any symptoms.

1.2 Examining the patient

Examine and assess the healing surgical site and the peri-implant soft tissues, and check for signs of:

- Infection (pain, bleeding, swelling, suppuration)
- Tissue dehiscence
- Nerve paresthesia: Record any altered or loss of sensation reported by the patient

Check for signs of:

- Infection
- Tissue dehiscence
- Nerve paresthesia



Surgical procedures

Step 2 | Post-operative review and suture removal

Suture removal
and oral hygiene
instructions



2. Suture removal and oral hygiene instructions



[Video: Post-operative review and suture removal](#)

Step-by-step procedure



- Local anesthesia is usually not required. If necessary, topical local anesthetic gel may be applied.
- Clean neighboring teeth gently with a scaler or cotton pellet.
- Identify the sutures. Gently lift each suture from the wound with a forceps and cut it with scissors.
- Rinse the area thoroughly with saline or chlorhexidine solution.
- Assess the wound closure again.
- Reinforce oral hygiene instructions with the patient.



Step-by-step for suture removal.



Check that all the sutures have been accounted for and removed. In the last visit, you should have documented how many sutures were placed after surgery. In case you see tissue dehiscence, prescribe a local disinfectant such as chlorhexidine gel to be applied twice a day by the patient and review the patient again after 1 week.

Account for the removal of all sutures. Consider application of topical chlorhexidine gel if there is any sign of tissue dehiscence.



3. Handling of complications

Implant-specific complications include implant loss, infections, recurring inflammation, damage to neighboring teeth, damage to nerves, perforation of the maxillary sinus or nasal cavity, maxillary sinusitis and fracture of the mandible.

You may refer to the intra-operative surgical complications discussed in [🔗 Implant surgery](#), and some factors which influence post-operative complications.

Management of post-operative complications

3.1 Tissue dehiscence:



- Irrigate thoroughly with 0.2 % chlorhexidine mouth-rinse, and apply topical chlorhexidine gel or spray over the healing site.
- The patient can use the 0.2 % chlorhexidine mouth-rinse and gel or spray daily.
- Review the patient after 1 week.

Examples of complications:

- Inflammation and infection
- Implant loss
- Nerve damage
- Damage to adjacent teeth
- Perforation of the sinus
- Sinusitis
- Fracture of the mandible
- Wound dehiscence

Rinse with 0.2 % chlorhexidine solution and apply the same in gel/spray over the site. Prescribe the same for the patient's daily home-care and review after 1 week.

3.2 Infection:



- If an abscess or suppuration is present, the patient should be referred to a specialist for further management.

Refer the patient to a specialist if an abscess or suppuration is present.



Surgical procedures

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Handling of complications



3.3 Bleeding and haematomas



Bleeding and haematoma formation can be a consequence of any surgery. Secondary bleeding can be caused by deficient vasoconstriction, damaged blood vessels, systemic bleeding tendencies, or the use of anticoagulation therapy.

In order to reduce the risk of post-operative bleeding, haemostasis must be achieved at the end of surgery, before discharging the patient from your practice. The patient must be given clear post-operative instructions,

including the use of appropriate pressure with gauze, avoidance of sports and other strenuous physical activity for at least 3 days after surgery.



If haemostasis is not achieved as expected after surgery, continue to monitor the patient closely while the patient is applying pressure with gauze on the surgical site.

Also consider doing the following:

- Try to identify the cause of bleeding related to the surrounding anatomical structures.
- Inject local anesthetic with vasoconstrictor in the area.
- Additional sutures for tighter wound closure.
- If bleeding is uncontrolled (e.g., appears to be pulsating), call the emergency services immediately.

Bleeding and bruising is a possible side-effect of any surgery.

Some causes of secondary bleeding:

- systemic conditions
- damaged blood vessels and deficient vasoconstriction
- anticoagulant therapy

Achieve haemostasis before discharging the patient. Provide clear instructions to prevent post-operative bleeding.



Surgical procedures

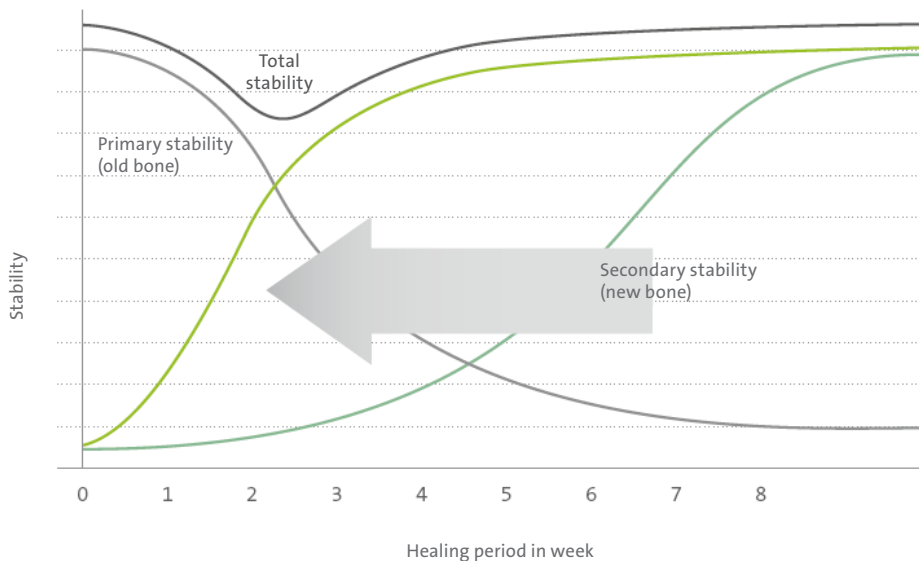
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Healing phase
with SLActive®
and SLA® Implants



4. Healing phase with Straumann® SLActive® and Straumann® SLA® Implants

The critical period of osseointegration is the first 2-4 weeks after surgery. Primary stability of bone achieved at the time of implant placement changes to secondary stability as new bone is deposited. This process of osseointegration is shown in the following graph, depending on the type of surface of the implant¹:



The critical period of osseointegration is the first 2-4 weeks after implantation.

Primary stability at the time of implantation needs to progress to secondary stability with deposition of new bone around the implant.



The dentist should be aware that the total stability dip can occur at around **2 weeks** (if [SLActive®](#) is used) or at around 4 weeks (if [SLA®](#) is used). Avoid manipulation of the [Healing Cap or Healing Abutment](#) during this time, to allow the implant and bone to osseointegrate. The implant's total stability is the weakest at the point of the stability dip. If the Healing Cap or Healing Abutment is loose, only use very gentle hand tightening.

Total stability dips at:

- 2 weeks for SLActive® Implants
- 4 weeks for SLA® Implants

Avoid any unnecessary manipulation on the implant during this critical period.



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Healing phase
duration



4.1 Healing phase duration

Depending on the type of implant used and the quality of bone, the guidelines for the healing phase (osseointegration) are summarized in this chart:

Situation	Healing phase	
	SLActive®	SLA®
<ul style="list-style-type: none"> • Good bone quality and adequate bone quantity • Implants with a diameter of 4.1 mm or 4.8 mm and a Straumann® SLActive®/SLA® surface length of ≥ 8 mm 	At least 3–4 weeks	At least 6 weeks
<ul style="list-style-type: none"> • Cancellous bone quality • Implants with a diameter of 3.3 mm • Implants with a Straumann® SLActive®/SLA® surface length of 6 mm 	At least 8 weeks	At least 12 weeks

Reference chart for healing times depending on implant diameter, length, surface and bone quality.

You must now wait for this recommended healing phase to be completed to achieve osseointegration. In general, it is recommended to wait at least **6-8 weeks** before seeing the patient to take the impression for the final restoration.

Plan to see the patient for impression-taking after the implant is osseointegrated.



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REFERENCES

- 1 Oates et al.(2007) Enhanced implant stability with a chemically modified SLA surface: a randomized pilot study. Int J Oral Maxillofac Implants. 2007 Sep-Oct;22(5):755-60.



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