

Stage 1 | Assessment and treatment planning

**Straumann® Smart**

**Step 1: Patient expectations,  
history and examination.  
Patient history**

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## 1. Patient history

The knowledge of former and current diseases, surgeries, and medications helps you identify patients at risk. **Should you have any doubts or concerns or if the patient has any serious internal medical problems, always consult the patient's physician or medical specialist for further clarification<sup>1</sup>.**

Various systemic conditions and their treatments are risk factors in implant therapy<sup>1</sup>. These factors can determine whether or not a patient is suitable for implant placement<sup>2</sup>. The level of evidence supporting absolute and relative contraindications for oral implant therapy due to systemic conditions and treatments is low. The largest amount of information exists for diabetes mellitus, osteoporosis, and radiotherapy.

**Always read the Instructions for use of any product that you are considering to use in the patient's treatment.**

### 1.1 Absolute contraindications for implant placement<sup>3,4</sup>

If one or more of the following serious internal medical problems is present, you should **consider non-surgical treatment alternatives to restore the patient's dentition or refer the patient to a specialist oral surgeon**:

- Recent myocardial infarction or cerebrovascular accident (≤ 6 months ago)
- Valvular prosthesis surgery (≤ 6 months ago)
- Previously irradiated bone in the head or neck area
- Intravenous bisphosphonate therapy
- Ongoing chemotherapy
- High-dose immunosuppressive therapy
- Allergies to implant materials (e.g., titanium Grade 4)
- Lack of compliance
- Incomplete maxillary and mandibular growth
- ASA<sup>5</sup> 5 or 6

Risk assessment starts with a good knowledge of the patient's medical history.

Be aware of the risk factors in implant therapy.

Avoid implant treatment if the patient has any of these absolute contraindications.



## 1.2 Relative general and medical contraindications

- Poor general state of health
- Uncooperative and/or unmotivated patient, with inadequate oral hygiene
- Uncontrolled diabetes mellitus
- Uncontrolled bleeding disorders or patient who is on antithrombotic medication
- Immunocompromised patient
- Bone metabolism disturbances
- Prolonged therapy-resistant functional disorders (e.g., craniomandibular disorders)
- Inadequate wound healing capacity
- Tobacco abuse
- Oral bisphosphonate therapy
- Allergies to local anesthetics which may require referral to a specialist
- Pathologic diseases of the jaw or oral mucosa, or unfavorable anatomic bone conditions
- Uncontrolled periodontitis
- Acute infection of proposed implant site
- Severe bruxism or parafunctional habits
- Local root remnants
- Pregnancy
- Psychoses

Consider if the benefits of implant treatment outweigh the risk of complications and be able to discuss this with the patient.

Smoking and periodontitis are commonly encountered risk factors when assessing a patient for implant treatment. You can find more detailed information about these two topics on the following page.



### 1.3 Smoking as a risk factor for implant therapy<sup>6</sup>

Smoking is not an absolute contraindication for implant placement but it lowers the survival and success rates of implants. It is also a risk factor for general and oral health. Smoking has a long-term chronic effect on the immune system and inflammatory processes. Some deleterious effects of smoking include: impaired wound healing, reduced collagen production, impaired fibroblast function, reduced peripheral circulation, and compromised function of neutrophils and macrophages<sup>6</sup>.

#### Smoking can cause:

- 4–5 times higher risk of peri-implantitis compared with non-smokers;
- 2–10 times higher risk for progressive bone loss compared with non-smokers;
- reduced implant survival rates compared with non-smokers.

Therefore, motivating the patient to stop smoking will be beneficial both for implant treatment and their general health.

### 1.4 Periodontitis as a risk factor for implant therapy<sup>6</sup>

Implant placement in patients with a history of periodontitis is not contraindicated, as the majority of studies report implant survival rates greater than 90 %<sup>6</sup>. However, there is a **3-4-fold** increased risk of developing peri-implantitis. Microbial colonization following implant placement has been shown to occur within a short period of time; the composition of microbiota within the peri-implant sulcus is similar to that found at neighboring teeth in partially dentate patients. Successful treatment of periodontitis prior to implant placement and individualized maintenance care following implant treatment is important.

Smoking lowers the survival and success rates of implants<sup>6</sup>.

#### Smoking can increase the risks<sup>6</sup> of:

- peri-implantitis
- progressive bone loss
- implant loss

Motivate your patient to stop smoking.

Periodontitis can increase the risk of peri-implantitis<sup>6</sup>.

Successful treatment of periodontitis is a prerequisite for implant treatment.



### 1.5 Combined risk factors

One single factor alone may not influence the risk of treatment failure measurably, whereas a combination of multiple independent factors may have a significant impact on the treatment outcome.

Several risk factors may increase the overall risk of treatment failure.





### 1.6 Checklist for patient history

For a thorough patient history, you may use this example of a Clinical Record Form to document the following:

[Example of a clinical record form](#)

#### **Patient's chief complaint and expectations**

During this first visit, discuss in detail the following questions with your patient:

- Why is the patient here, what is his/her primary objective?
- What is the patient's chief complaint?
- What are his/her expectations regarding the treatment outcome in terms of esthetics, health and function?
- What does the patient know about implant therapy? Are his/her knowledge and expectations realistic?

#### **Medical history**

Before planning surgery, the patient's general psychological and physical health status should be carefully assessed. It is important to record, regularly check and update all such information in the patient's record. In case of significant medical issues, the patient's physician should be consulted for further details.

#### **Dental history**

- Previous dental care
- Reasons for tooth loss
- History of treated periodontitis
- Oral hygiene habits

#### **Social and family history**

- Financial capability
- Genetic predisposition for tooth loss

#### **Habits**

- Parafunctional activity (e.g., bruxism)

#### **Motivation and compliance**

- Patient's motivation to invest time and money in oral health
- Frequency of oral hygiene procedures



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All clinical Straumann® Smart content – such as texts, medical record forms, pictures and videos – was created in collaboration with Prof. Dr. Christoph Hämmerle, Prof. Dr. Ronald Jung, Dr. Francine Brandenburg-Lustenberger and Dr. Alain Fontolliet from the University of Zürich, Clinic for Fixed and Removable Prosthodontics and Dental Material Science, Switzerland.

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