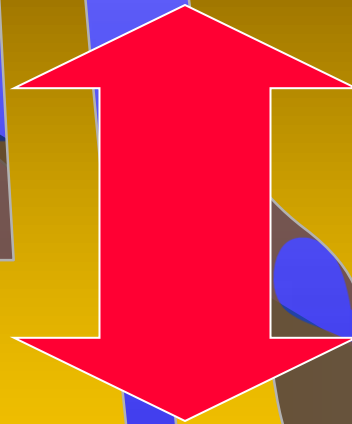


Indications and Contraindications of Dental Implant Therapy. Theoretical and practical considerations



Tatiana Shkolnik MD, DDS

Indication of implant placement



Failure of traditional
prosthetic treatment

Guided bone regeneration (GBR) techniques:

- Lateral augmentation
- Split osteotomy – bone splitting
- Onlay-plasty
- Autogenous monocortical bone augmentation
- Sinus-lift

Factors influencing medical activities:

- Possible risk
-
- Expected benefit

Implant therapy is generally
indicated in cases of
edentulousness where a risk-
benefit ratio can be calculated
and is acceptable to both the
doctor and the patient

(Divinyi: Fogászati
implantológia, 1998)

Main indications of endosseal implant placement:

- 1. Edentulous jaw
- 2. Uni- or bilateral missing teeth at the end of the arch
- 3. Too many teeth missing within the arch
- 4. A single tooth missing
- 5. In the case of so-called 'defect prosthetics' following trauma or tumour resection
- 6. In cases of difficult swallowing and parafunction
- 7. Verified allergy against prosthetic acrylics
- 8. Hypersensitive mucosa
- 9. In certain diseases: asthma , gastritis, ulcers, epilepsy
- 10. High esthetic demand: actors, speakers, singers.

From a prosthetic point of view an
implant retained prosthetic
solution is possible for any kind of
edentulous situation!!!

(Divinyi: Fogászati
implantológia 1998)

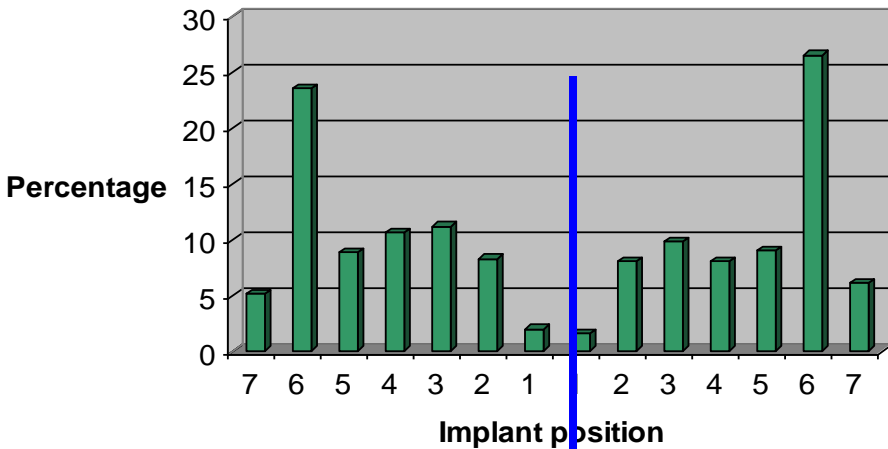
Importance of indications

- I. Complete lower edentulousness
- II. One missing tooth
- III. Missing teeth at the end of the arch

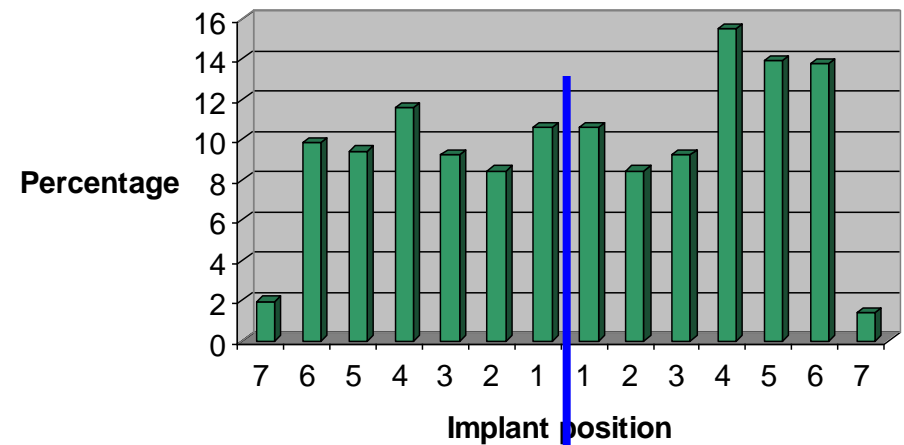
Watzek G.: Endossale Implantate in der oralen Chirurgie, 1994

Topographic characteristics in Hungary (1984-2006)

Percentage of implant positions in the mandible



Percentage of implant positions in the maxilla



Conventional prosthetics



Conventional prosthetics



Topographic characteristics in Hungary (1984-2006)

Class I.

One missing tooth due to trauma or extraction, preferably with caries free neighbouring teeth

Class II.

Uni- or bilateral arch-final edentulousness, with conservable teeth mainly in the mandible

Class III.

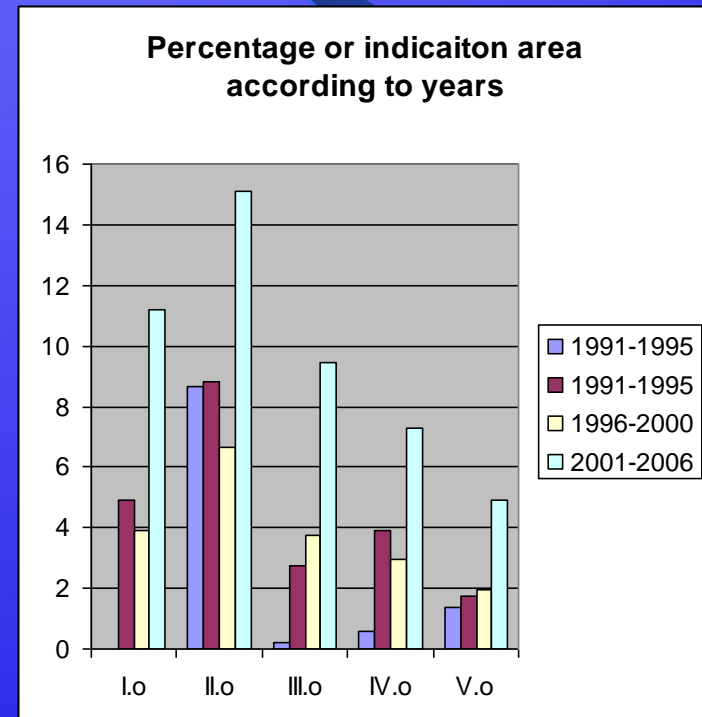
Missing teeth within the arch, where the pontic would be too long.

Class IV.

Completely edentulous jaw or quadrant

Class V.

Other cases not classified as above (eg. arch-final and arch-medial missing teeth in the same patient or a fully edentulous quadrant and other missing teeth, etc.)



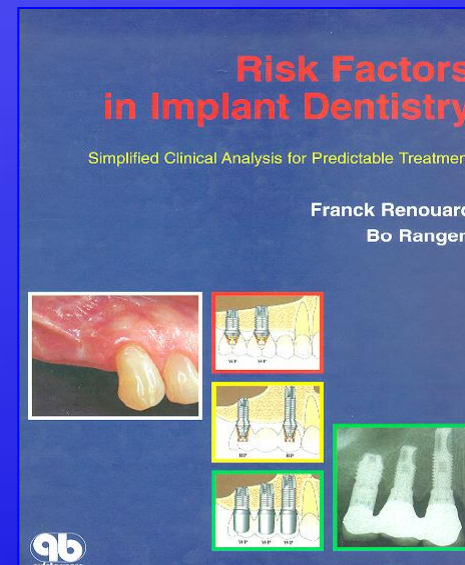
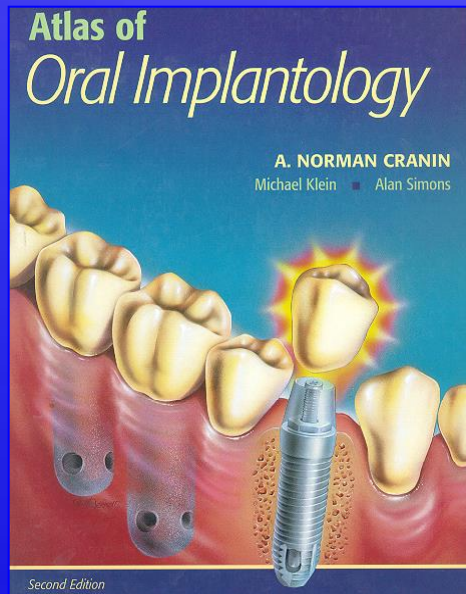
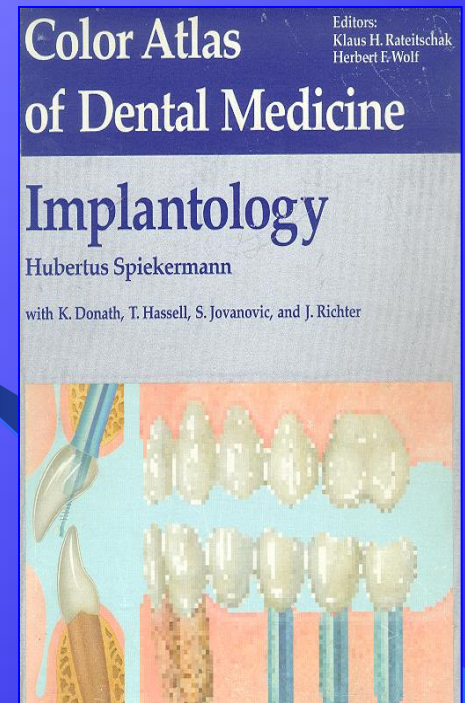
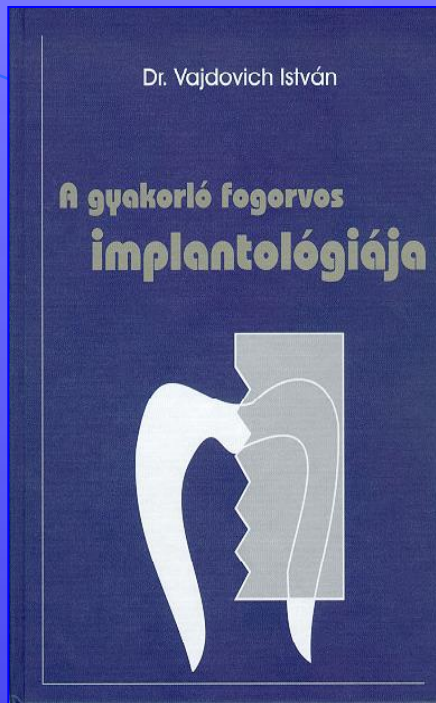
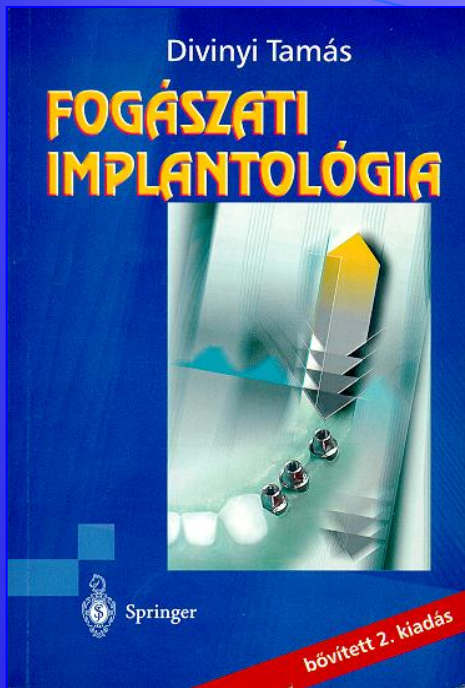
Indications of implant therapy:

Medically speaking the indication of implant therapy is the **lack of contraindication!!!!**

Contraindication of implant placement:

Intraoral lesions and general diseases or conditions affecting the whole organism in which implant placement or its healing becomes possible.

(Vajdovich: A gyakorló fogorvos implantológiája, 2002)



Classification of contraindications:

- *General contraindications*

- *Local contraindications*

General contraindications

- Any disease or medical therapy that hinders wound healing (DM, lesions of bone metabolism, bisphosphonates, immunosuppressive, antidepressant, anticoagulant, cytostatic treatment)
- General surgical contraindications
- Pregnancy
- Psychological instability
- Physical and mental retardation
- Alcoholism, heavy smoking
- Atypical facial pain
- Age under 14

(Divinyi 1998)

Diabetes mellitus

- At present there are 120-140 million diabetics worldwide, but this number will double by 2025.
- Two types: Insulin dependent diabetes mellitus (IDDM) and Non-insulin dependent diabetes mellitus (NIDDM).
- It was proven by experiments that in DM patients the bone-implant connection is less strong.
- Wound healing is worse.

Diabetes mellitus

In untreated diabetics implant failure rates can be as high as **20%** in the first five years, in well treated diabetics this is around **6-7%**

*Balshi T.J., Wolfinger G.J.:Dental implants in the diabetic patient: A retrospective study.
Implant.Dent 1999; 8: 355-359*

Bone metabolic diseases

- Osteoporosis-progressive bone disease characterized by a decrease in bone mass and density (age, menopause)
 - the quantity of bone in the jaws decreases as well, they fracture easily.
- Osteomalacia-the ratio of organic and inorganic components of bones shifts towards organic. Mineralisation is poor.

Osteoporosis

Primary and secondary forms are known.

Primary forms appear in women in the *postmenopausal age*, and in men in the *presenile* or *old age*.

Secondary osteoporosis develops as a consequence of another disease (Cushing-syndrome, diabetes, renal disease, alcoholism, malignant haematological diseases).

18% of women above 40 and 8%-a of men are involved.

*Sugerman P.B., Barber M.T.: Patient selection for endosseous dental implants: Oral and systemic considerations
The Int. J. of Oral & Maxillofacial Implants 2002; 17: 191-201*

Cardiologic diseases

Following acute myocardial infarction no surgical intervention should be performed within 6-12 months as the stress may provoke uncontrolled arrhythmias.

After placement of an artificial valve implant placement should be deferred by 15-18 months. Then of course it may be made more difficult by anticoagulant therapy.

Endocrine diseases

Due to frequent cardiovascular complications and pathological conditions of bone in patients with endocrine disorders, oral surgery or implant placement may only be performed with the utmost care, or not at all.

*Sugerman P.B., Barber M.T.: Patient selection for endosseous dental implants: Oral and systemic considerations
The Int. J. of Oral & Maxillofacial Implants 2002; 17: 191-201*

Patients following radiation therapy or chemotherapy

In patients who underwent radiation therapy success rate is **26.5%** five years after implant placement.

There are two recommendations for patients who underwent chemotherapy: exceptional oral hygiene and to defer implant placement till the blood supply of the region regenerates.

Eposito M., Hirsch J.M., Lekholm U., Thomsen P.: Biological factors contributing to failures of osseointegrated oral implants (II).

Etiopathogenesis

Eur. J. Oral Sci. 1998; 106: 721-764

General contraindications

- Any disease or medical treatment that hinders wound healing (DM, metabolic disorders of bones, immunosuppressive, antidepressant, anticoagulant, cytostatic treatment)
- General surgical contraindication
- Pregnancy
- Psychological instability
- Physical and mental retardation
- Alcoholism, heavy smoking
- Atypical facial pain
- Under 14 years of age

(Divinyi 1998)

General physical status (The American Society for Anaesthesiology – ASA)

- P1 – Normal, healthy patient
- P2 - Patient with a mild, controlled systemic disease
- P3 - Patient with multiple systemic disease or with severe cardiac disease or hypertension or diabetes
- P4 – Multiple systemic diseases that threaten the patient's life
- P5 – Brain-dead

(The International Journal of Oral & Maxillofacial Implants 17: 191-201, 2002)

General contraindications

- Any disease or medical treatment that hinders wound healing (DM, metabolic disorders of bones, immunosuppressive, antidepressant, anticoagulant, cytostatic treatment)
- General surgical contraindication
- Pregnancy
- Psychological instability
- Physical and mental retardation
- Alcoholism, heavy smoking
- Atypical facial pain
- Under 14 years of age

(Divinyi 1998)

Pregnancy

- Significant change in hormone physiology
- Gingivitis of pregnant women causes difficulties

General contraindications

- Any disease or medical treatment that hinders wound healing (DM, metabolic disorders of bones, immunosuppressive, antidepressant, anticoagulant, cytostatic treatment)
- General surgical contraindication
- Pregnancy
- Psychological instability
- Physical and mental retardation
- Alcoholism, heavy smoking
- Atypical facial pain
- Under 14 years of age

(Divinyi 1998)

Psychological instability

- **15%** of the adult Hungarian population is affected: panic syndrome, depression or paranoia.
- More time has to be devoted to the prospective implant patient
- Expectations can be unrealistic

*Huszár I. (szerk.): A pszichiátia vázlata
Főiskolai jegyzet, HIETE, Budapest, 1998*

Smoking, alcoholism

Chronic alcoholism is often associated with coagulopathies: lack of clotting factors, thrombocytopenia and as a result direct bone marrow toxicity may evolve

In heavy smokers (≥ 20 cigarettes/ day) the healing of peri-implant soft tissues is more difficult, there is more marginal bone loss, thus the chance of long term implant success is decreased.

Smoking

In heavy smokers *periimplantitis* occurs more frequently as nicotine inhibits peripheral circulation in the capillaries.

It can be stated in general that in smokers implant failure is **twice as frequent** as in non-smokers.

Bain C.A.: Smoking and implants failure. Benefits of a smoking cessation protocol. Int.J. Oral Maxillofac Implants 1996; 11: 756-759

General contraindications

- Any disease or medical treatment that hinders wound healing (DM, metabolic disorders of bones, immunosuppressive, antidepressant, anticoagulant, cytostatic treatment)
- General surgical contraindication
- Pregnancy
- Psychological instability
- Physical and mental retardation
- Alcoholism, heavy smoking
- Atypical facial pain
- Under 14 years of age

(Divinyi 1998)

Atypical facial pain

Facial pain of unknown origin usually occurs in women over 40 in the border region of the maxilla and premaxilla.

Facial pain of unknown origin makes it difficult to assess complaints following implant placement, as it is difficult to decide whether the given region is painful due to surgery or to the patients original condition.

Bogdán G., Gyeney L.: Arctéri fájdalomak eredete és differenciáldiagnosztikája

Littera Nova Kiadó, Budapest, 2002

Age

Studies have indicated that in healthy elderly patients (above 70) – both in men and women – the chances of osseointegration are just as good as in the case of younger patients and there is no increased loss of bone or soft tissues around implants.

Bryan S.R., Zarb G.A.: Osseointegration of oral implants in older and younger adults.

Int. J. Oral Maxillofacial Implants 1998; 13: 492-499

Local contraindications

- Radiation therapy within 5 years in the region of the planned implant
- Pathological conditions of the local bone and soft tissues
- Malocclusion (deep bite) and parafunction (bruxism) that will overload the implant
- Dental anomalies that have to be treated before implant placement

(Divinyi 1998)

Pathological conditions of local bone and soft tissues

- osteomyelitis, osteoradionecrosis, large cysts, granuloma, fibrous dysplasia, benign and malignant bone tumours.
- radix relicta (relict root)
- leukoplakia and the erosive form of lichen
- fibrotic alveolar ridge, papilloma, papillomatosis, fibroma and fibromatosis

Dental anomalies

-Caries

-Bad oral hygiene

-Periodontitis

-Orthodontic anomalies

Dr. Vajdovich István

**A gyakorló fogorvos
implantológiája**



Contraindications of oral endosseal implant placement

Temporary contraindication

- Fever
- Within 3 months after bone and 3 weeks after mucosal inflammations
- In the case of bone grafting of the edentulous ridge (Guided Bone Regeneration)

Definite contraindication

- Drug abuse
- Bad oral hygiene which continues despite of motivating treatment.

(Vajdovich 2002)

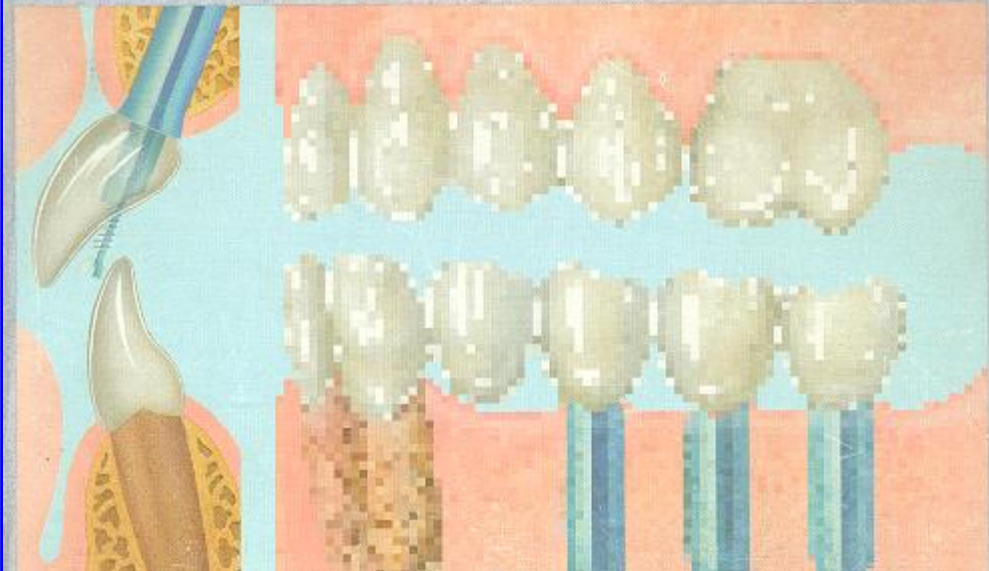
Color Atlas of Dental Medicine

Editors:
Klaus H. Rateitschak
Herbert F. Wolf

Implantology

Hubertus Spiekermann

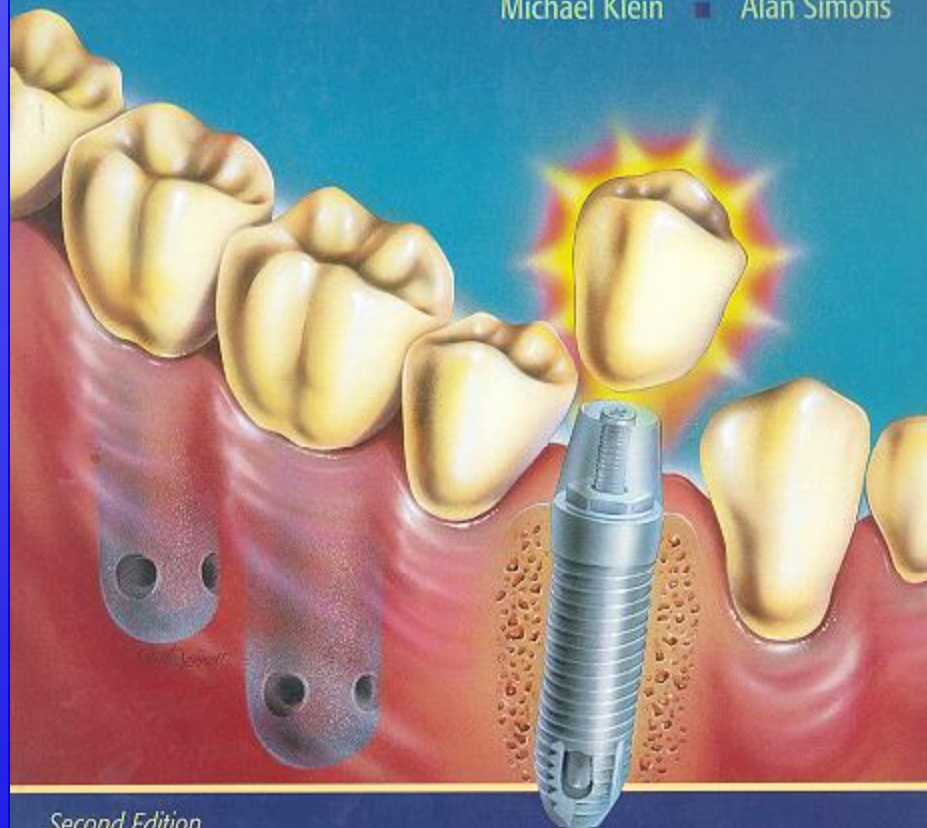
with K. Donath, T. Hassell, S. Jovanovic, and J. Richter



Atlas of *Oral Implantology*

A. NORMAN CRANIN

Michael Klein ■ Alan Simons



Second Edition

Sugerman, P.B.; Barber, M.T.: *Patient Selection for Endosseous Implant:
Oral and systemic Considerations*

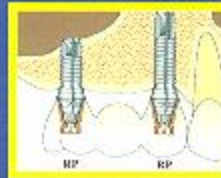
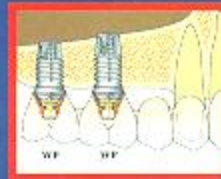
The International Journal of Oral & Maxillofacial Implants 17: 191-201,
2002

- **Titanium metallosis** — it could not be detected as a toxic substance or as causing allergy
- **Age** — a 'higher' age does not influence bone regeneration or the degree of bone resorption around the implant
- **The patient's expectations** — are higher than in the case of traditional prosthetics
- **Smoking** — more frequent periimplantitis

Risk Factors in Implant Dentistry

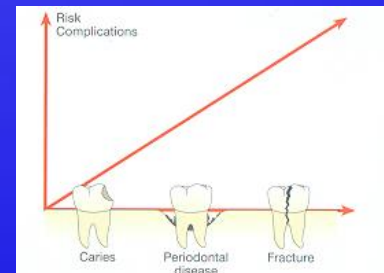
Simplified Clinical Analysis for Predictable Treatment

Franck Renouard
Bo Rangert



Contraindications of implant placement (Renouard, Rangert 1999)

- General assessment:
 - Drug intake
 - Psychological preparation
 - Aetiology of edentulousness



Contraindications of implant placement (Renouard, Rangert 1999)

● Extraoral examination:

-Mouth opening test



-Oral hygiene



-Local bone conditions



Thank you for your kind
attention!