*Fixed Partial Dentures /***FPDs***/,*
Implant Supported
*Prosthesis/***ISP***/*
in implant prosthodontics

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Glossary terms

- **F**ixed **P**artial **D**enture /FPD/

  Non removable *partial* prosthesis supported and retained by teeth and/or implants.

- **I**mplant **S**upported **P**rosthesis /ISP/

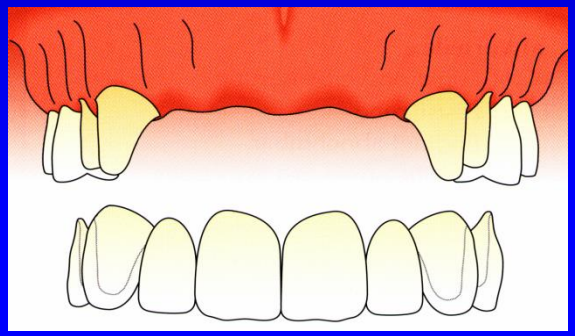
  Replacement for missing natural teeth that receives retention, support, and stability from dental implants.

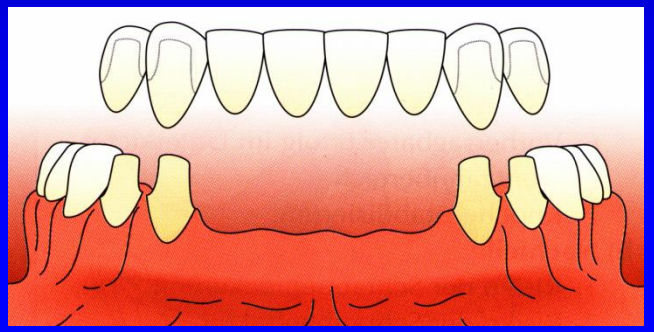
/Laney W.R.edit.:Glossary of oral and Maxillofacial Implants .
Quintessence.2007/

Partial tooth loss

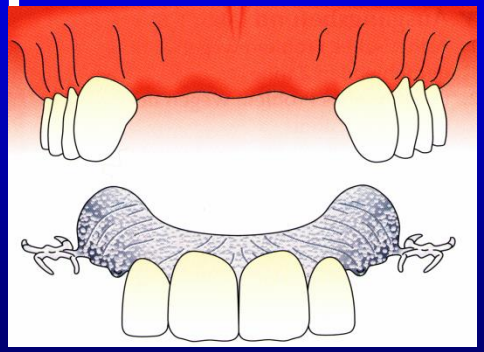
Conventional proshetic therapy:

FPD





Removable prosthesis



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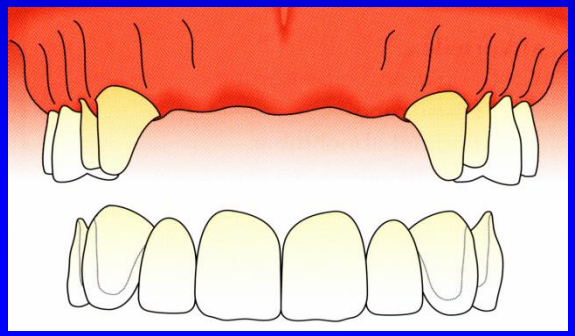
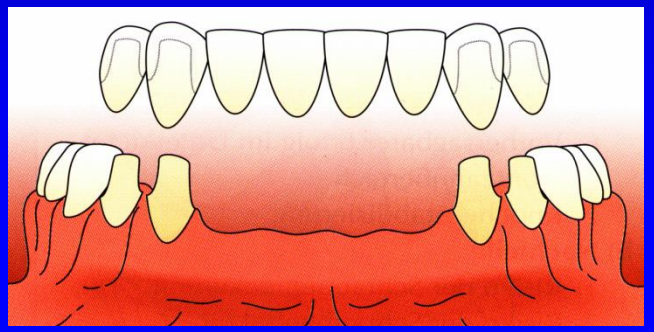
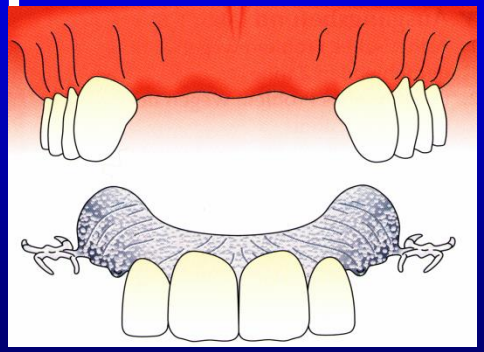




Bone loss in long term?

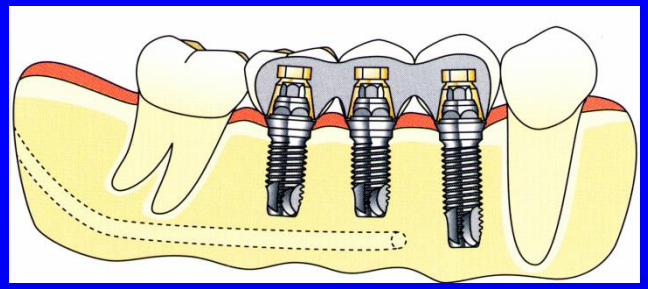
Removable prosthesis

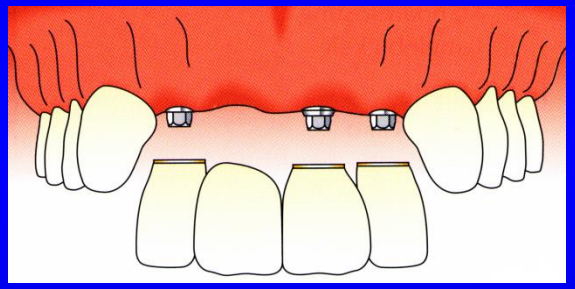


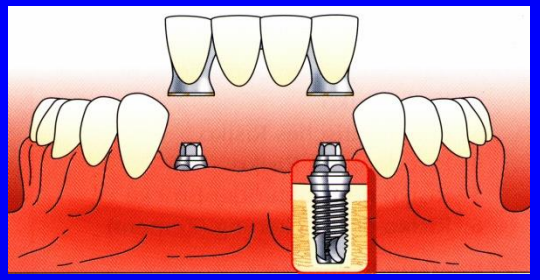
Partial tooth loss

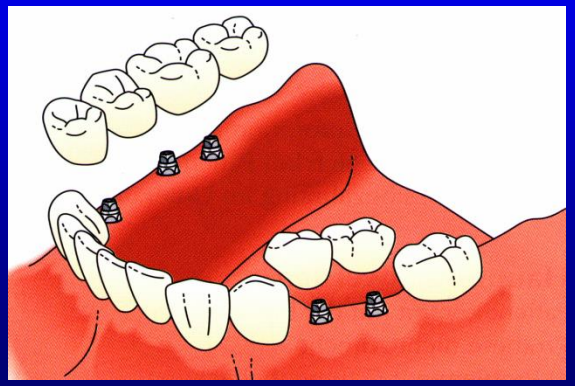
IMPLANT THERAPY:

- Single, implant supported crowns
- Implant supported and retained FPD









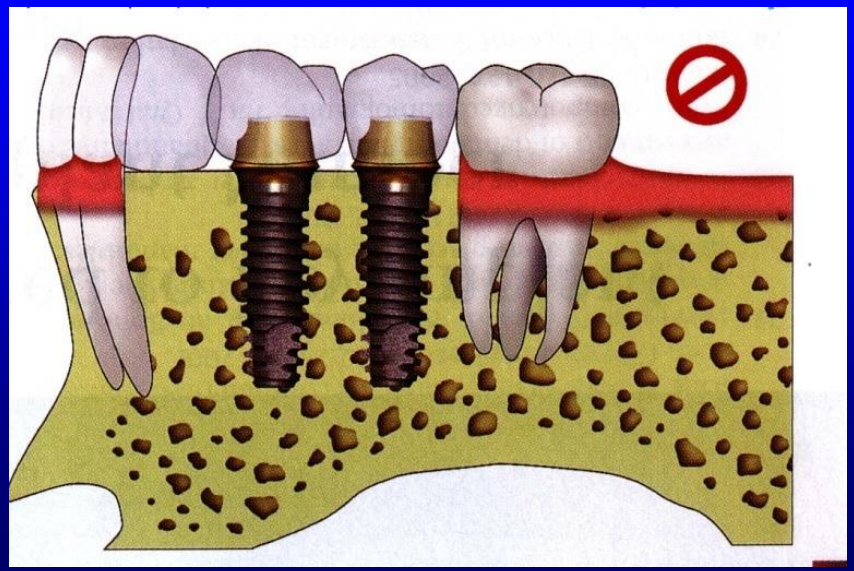
Partial tooth loss

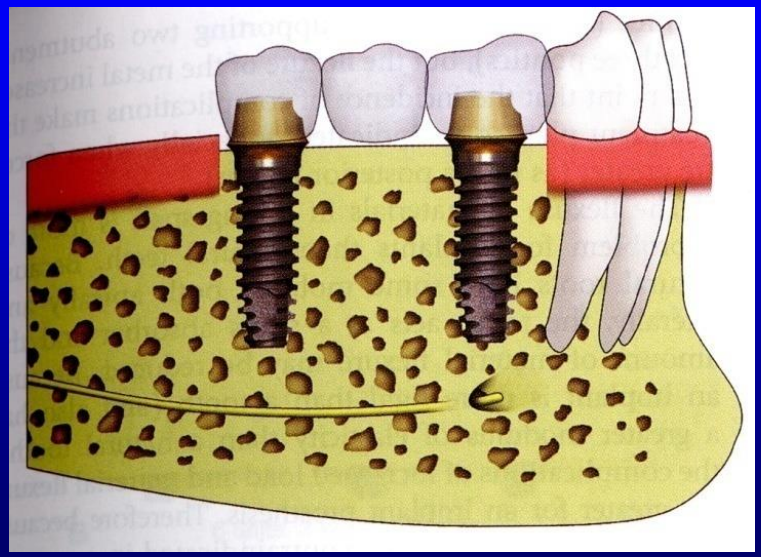
IMPLANT THERAPY:

- Single, implant supported crowns
- Implant supported and retained FPD

Basic rules:

- No cantilevers /exeptions/





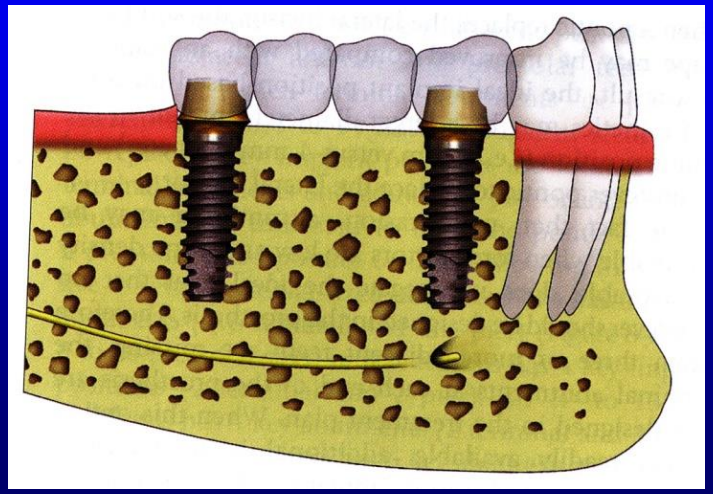
Partial tooth loss

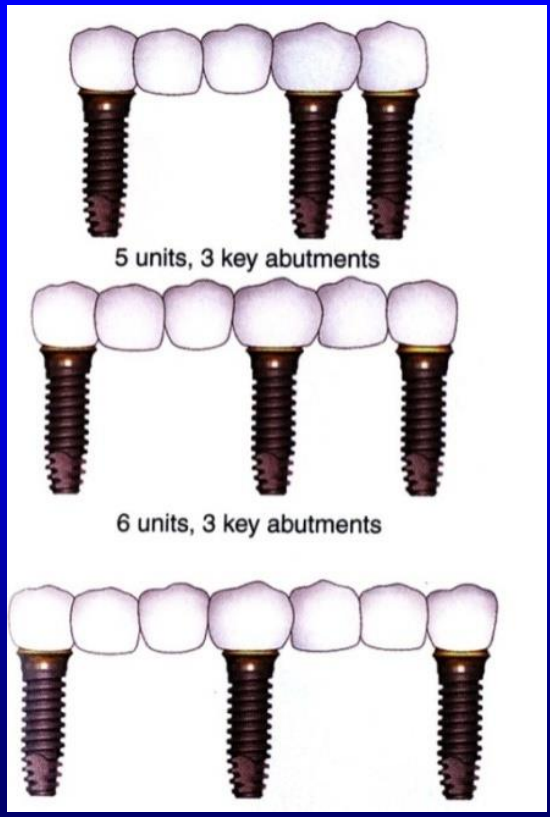
IMPLANT THERAPY:

- Single, implant supported crowns
- Implant supported and retained FPD

Basic rules:

- No cantilevers /exeptions/
- No three adjecent pontics





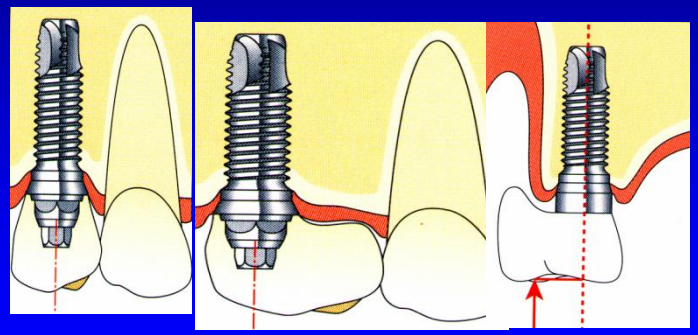
The span of the pontics in the ideal treatment plan should be limited to the size of two premolars /13.5-16.0 mm/.

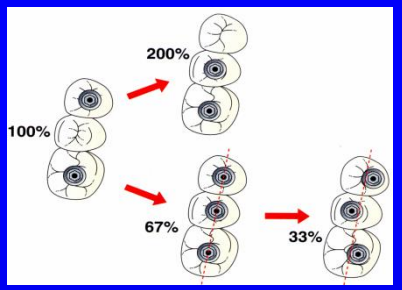
/ Misch 2006/

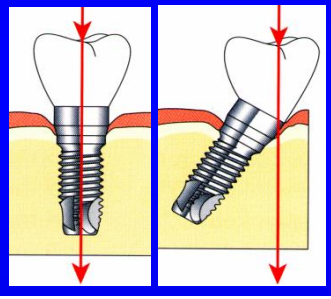
Partial tooth loss

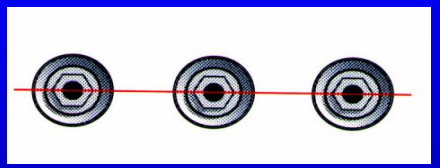
Implant prosthodontics differ from the conventional therapy:

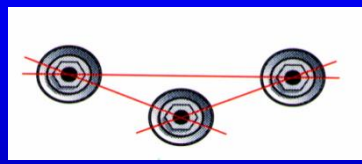
- **Splinting of implants, if possible**
- **Precise mesio-distal, oro-vestibular positioning,**
- **„Tripodial" placement?**
- **Axial loading?**

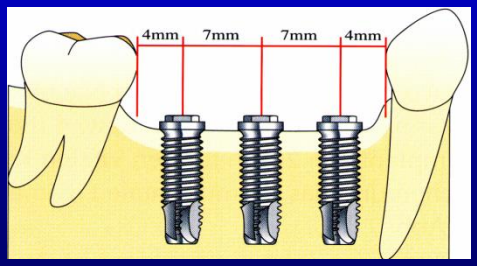












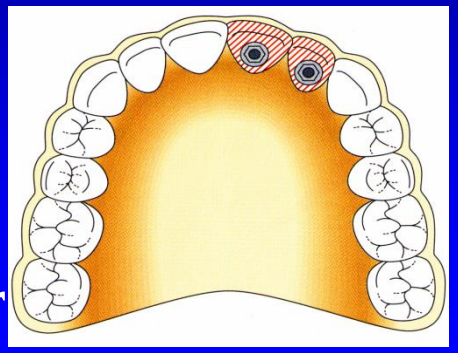
What about the different clinical situations?

How does a FPD look like?

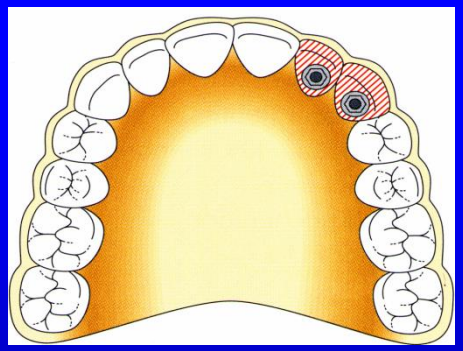
Partial tooth loss

Clinical situations:

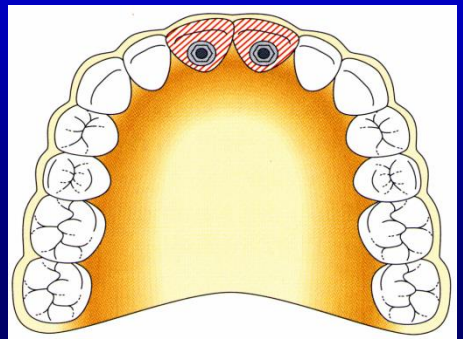
Replacement of maxillary central and lateral incisor



Replacement of maxillary lateral incisor and canine



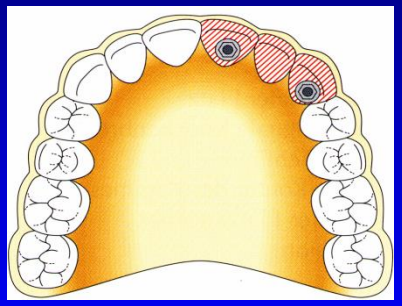
Replacement of maxillary central incisors

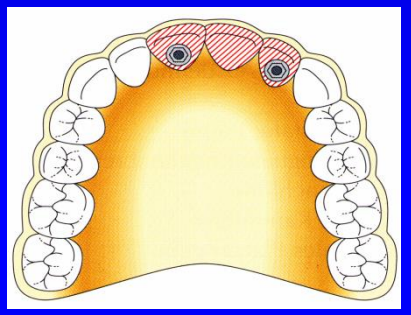


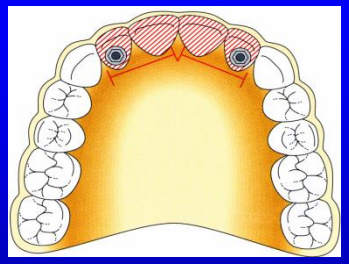
Partial tooth loss

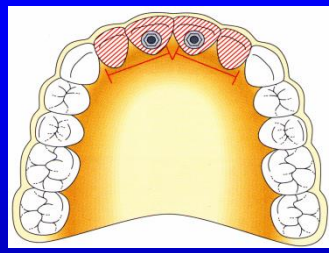
Clinical situations:

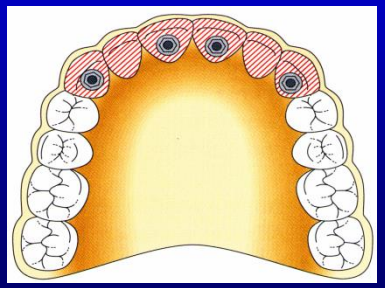
- **Missing central, lateral incisors and canine**
- **Missing central incisors and lateral one**
- **Missing 4 incisors**
- **Missing 4 incisors ,2 canines**







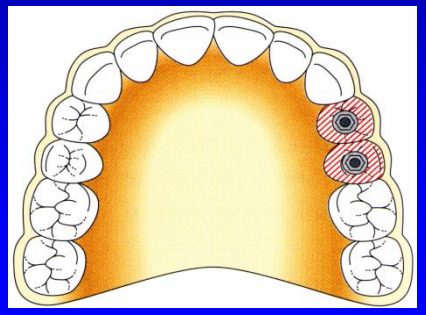


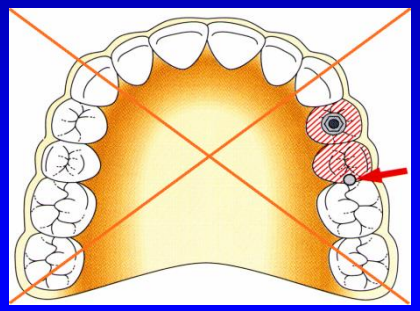


Partial tooth loss

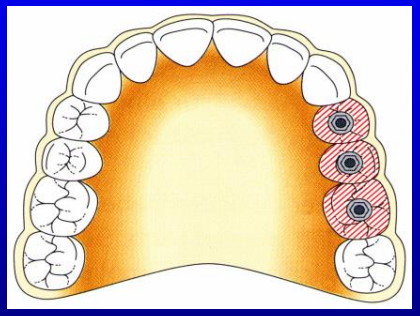
Clinical situations:

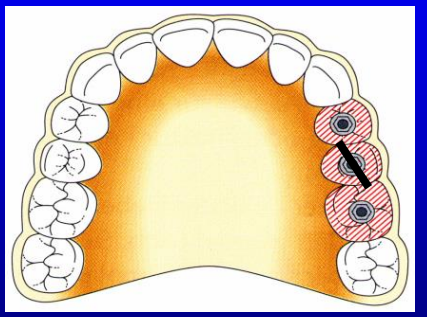
- **Missing premolars**





- **Missing premolars and molar**





Basic questions
in implant prosthodontics:

- support
- retention

?

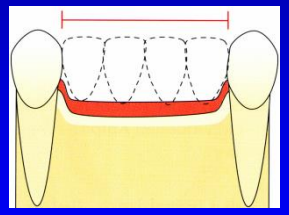
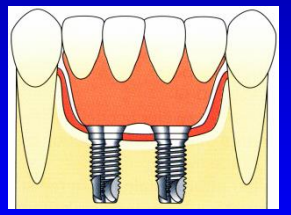
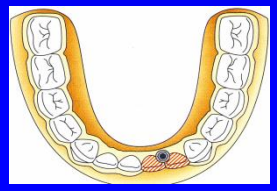
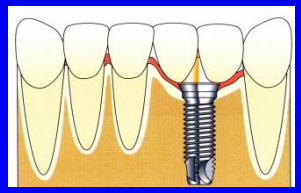
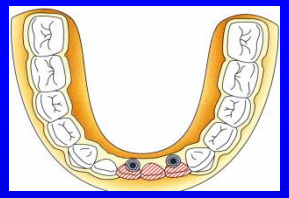
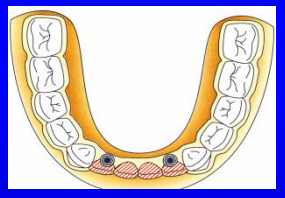
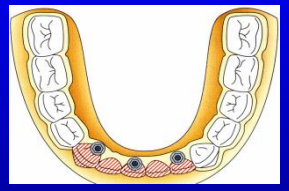
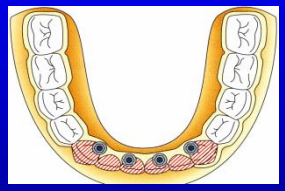
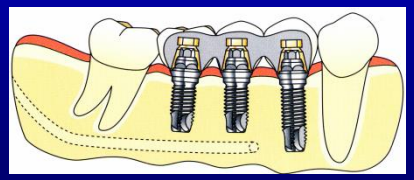
Partial tooth loss

Clinical situations:

Mandibular incisors

and

canines


Mandibular premolars, molars

Support and retention?

Types of implant restorations

Fixed partial denture/FPD/

(mode of retention)

cementation

screw

(support)

tooth+implant

Removable /overdenture/

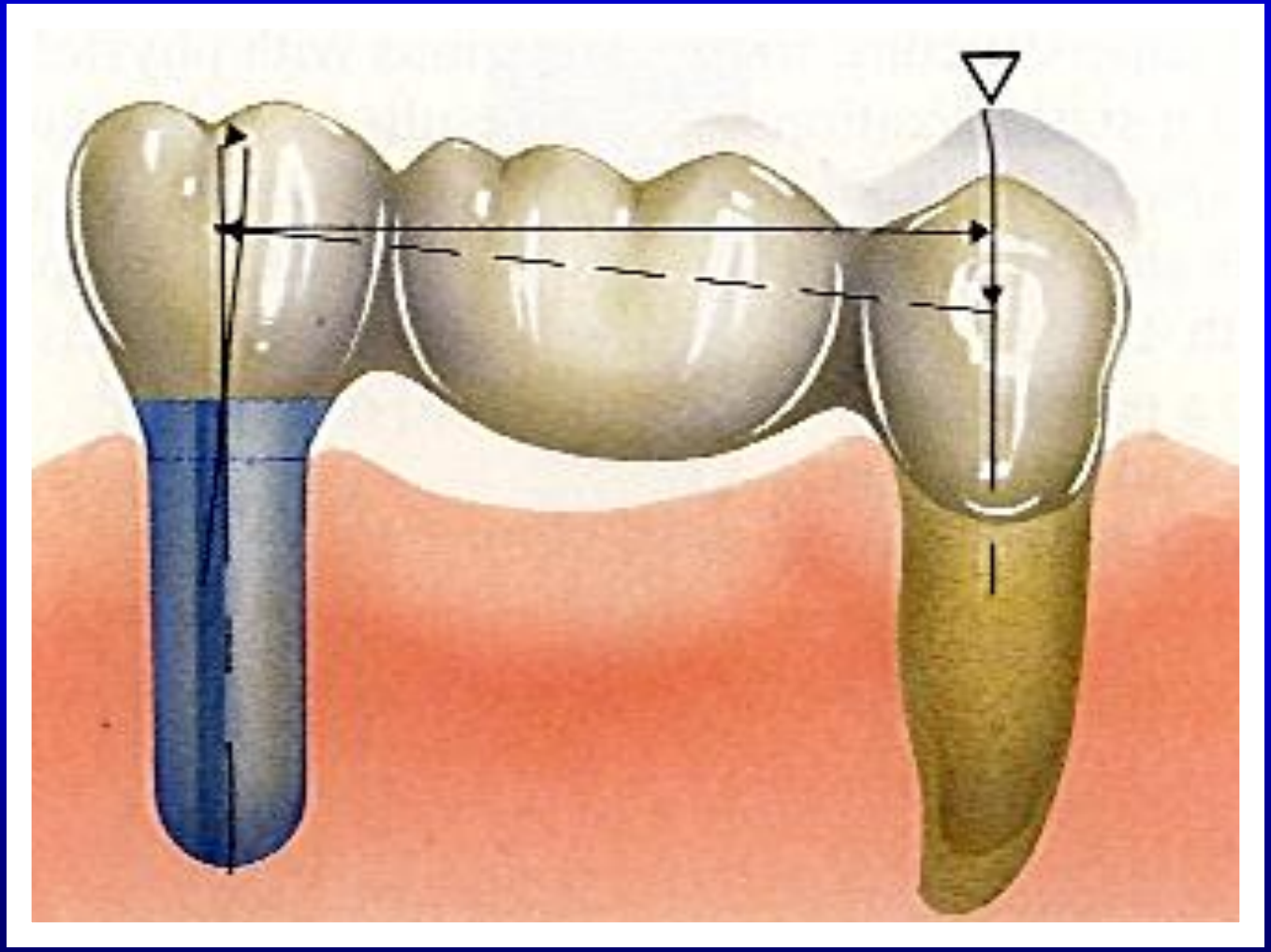
(support, retention)

implant

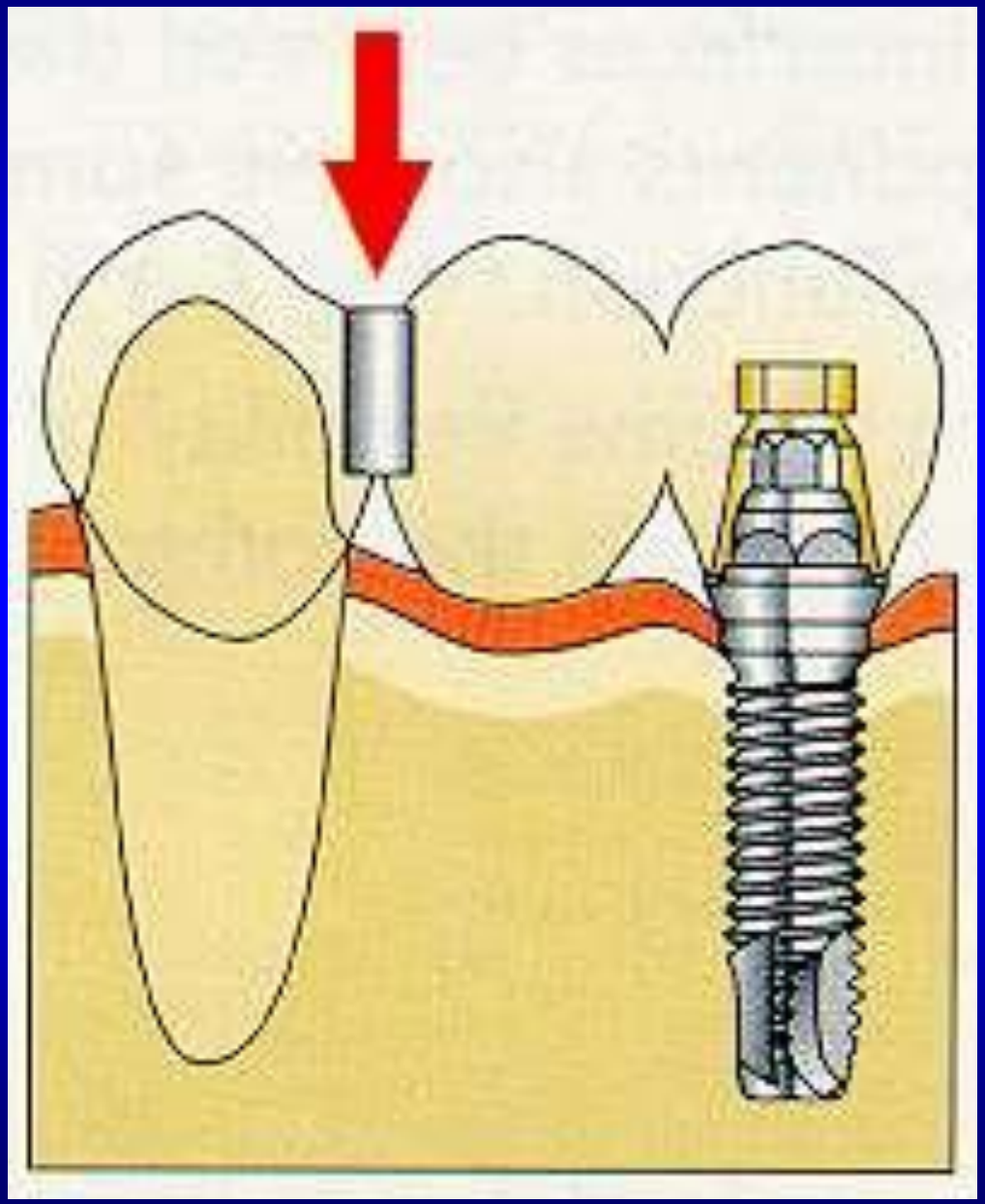
mucosa

implant + mucosa

IMPLANT-TOOTH SUPPORTED FIXED PARTIAL DENTURE



Precision attachement in implant-tooth supported FPD



Implant-tooth supported fixed partial denture

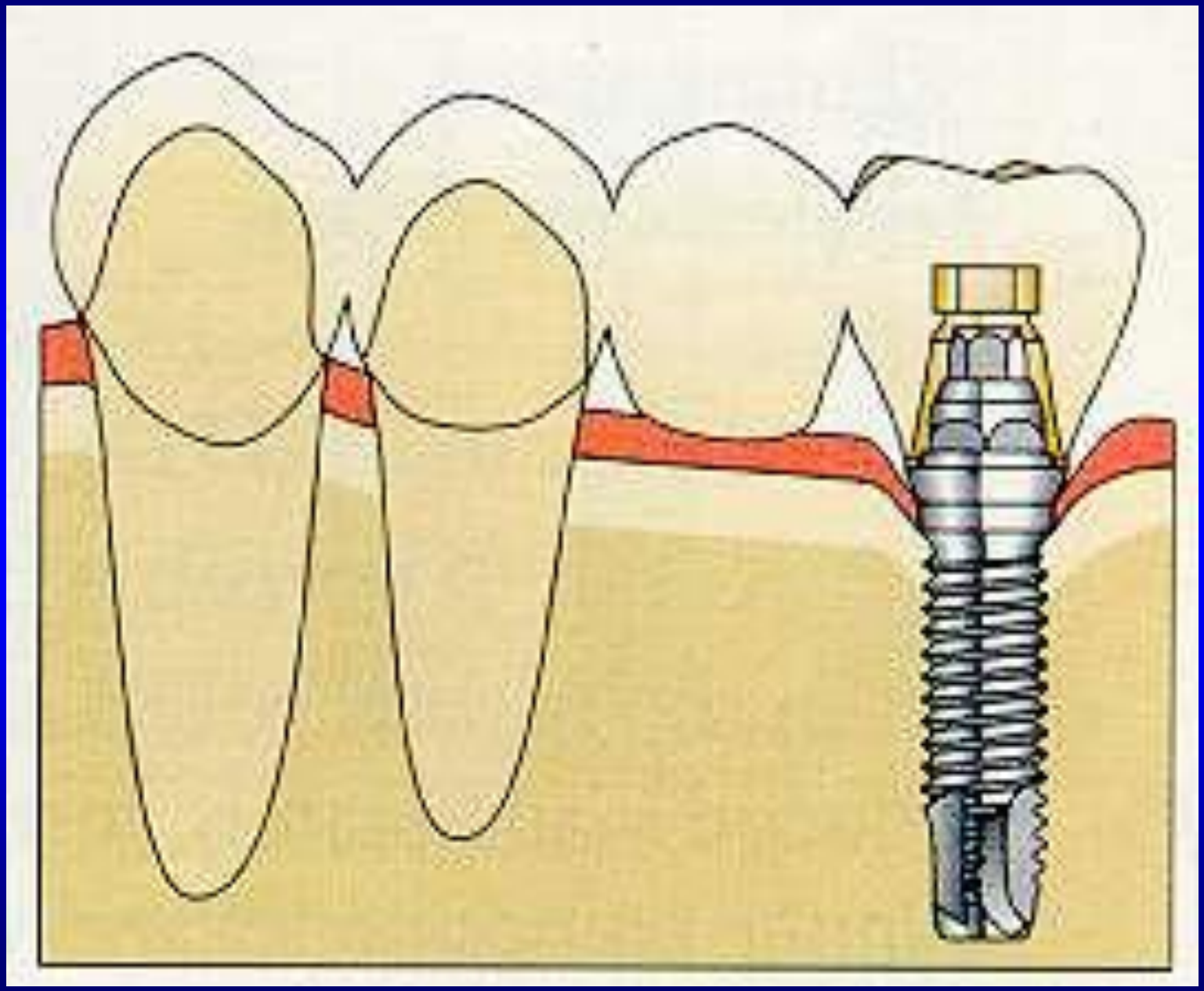
Advantages:

- less implants necessary
- proprioceptive reflexes through natural teeth
- similar to conventional restorations

Disadvantages:

- sacrificing tooth substance
- different kinematics between abutments
- uncertain predectibility because of decay

Splinting of teeth in implant-tooth supported FPD



Types of implant restorations

Fixed partial denture/FPD/

(mode of retention)

cementation

screw

(support)

implant

Removable /overdenture/

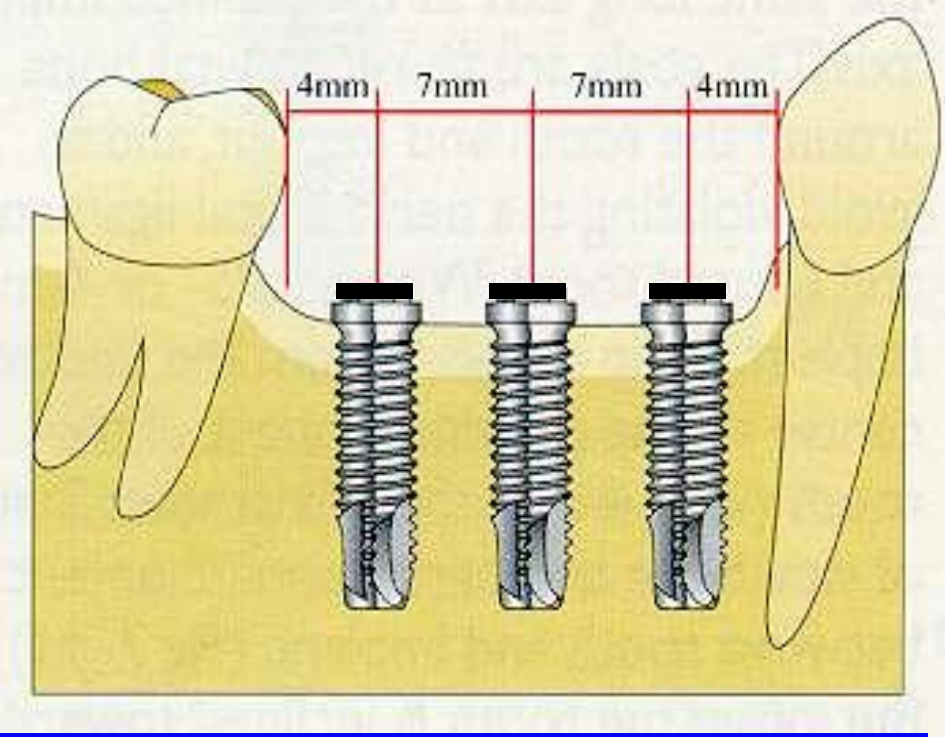
(support, retention)

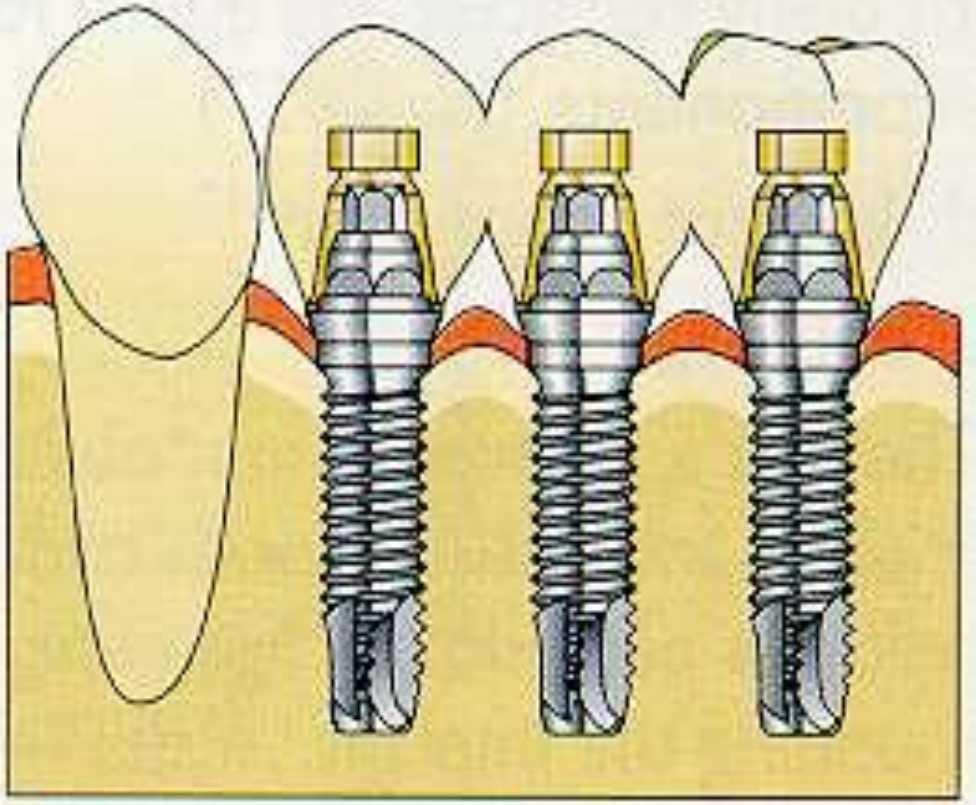
implant

mucosa

implant + mucosa

Precise placement of implants for implant supported FPD





Implant supported fixed partial denture

Advantages:

- saving tooth structure
- similar kinematics between abutments
- implants preserve bone volume
- predectibility

Disadvantages:

- impaired sensory innervation
- higher costs

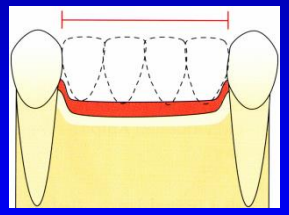
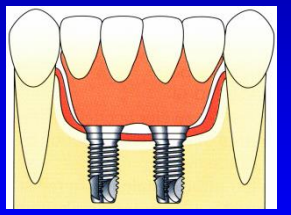
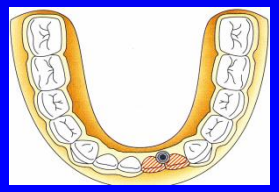
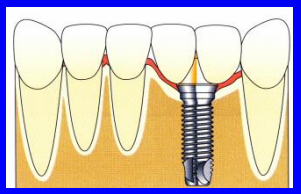
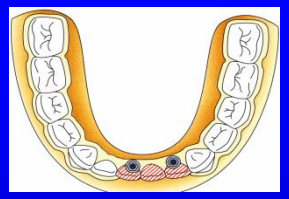
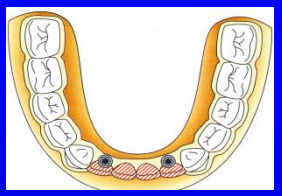
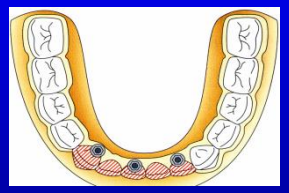
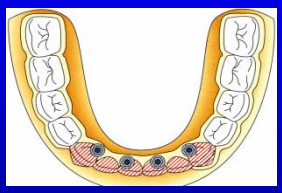
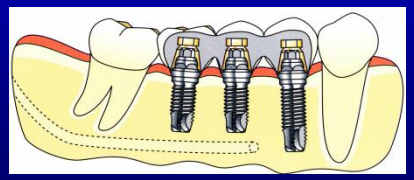
Partial tooth loss

Clinical situations:

Mandibular incisors

and

canines


Mandibular premolars, molars

Support and retention?

Types of implant restorations

Fixed partial denture/FPD/

(mode of retention)

cementation

screw

tooth+implant

implant

Removable /overdenture/

(support, retention)

implant

mucosa

implant + mucosa

Cemented fixed partial denture /FPD/

Advantages

- passive suprastructure
- conventional laboratory work
- easy completing procedure
- good esthetics

Disadvantages

- no retrievibility, correction is difficult
- larger abutment, extended intermaxillary space is needed
- possible excess of cement

Preparing cemented fixed partial denture

Types of implant restorations

Fixed partial denture/FPD/

(mode of retention)

screw

implant

Removable /overdenture/

(support, retention)

implant

mucosa

implant + mucosa

Screw retained prosthesis

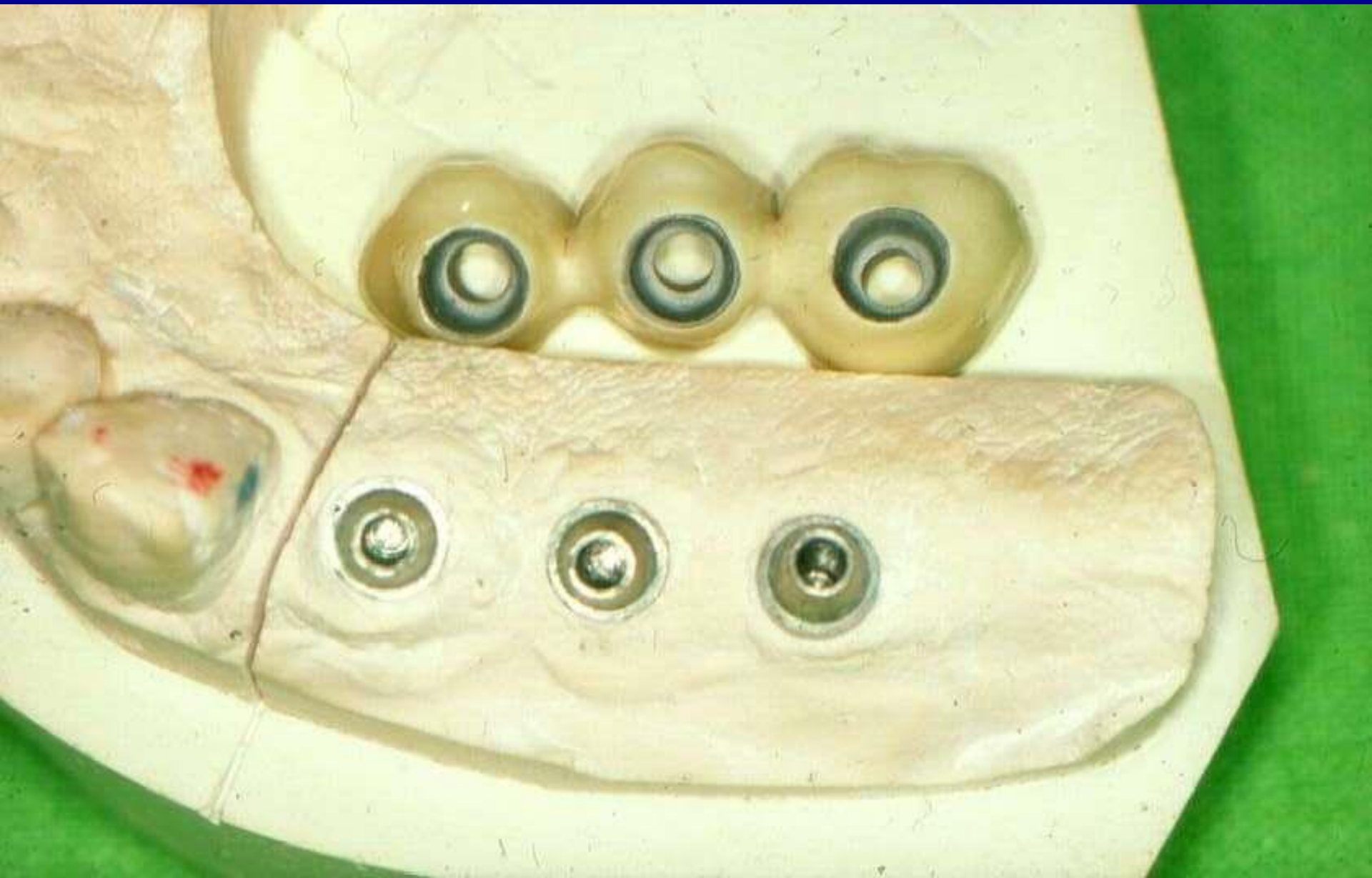
Advantages

- shorter superstructure - less intermaxillary space is needed
- divergencies can be easily corrected
- easy retrievibility – correction of failures

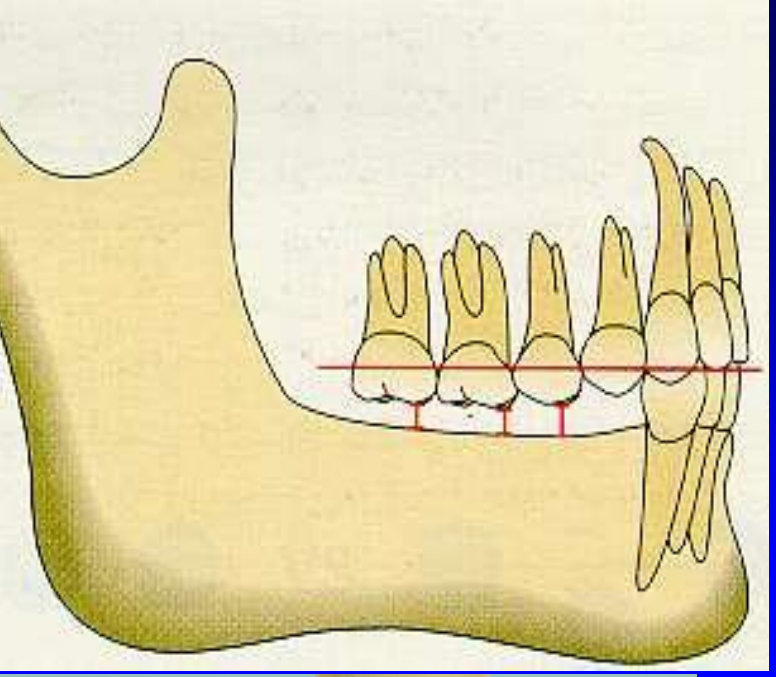
Disadvantages

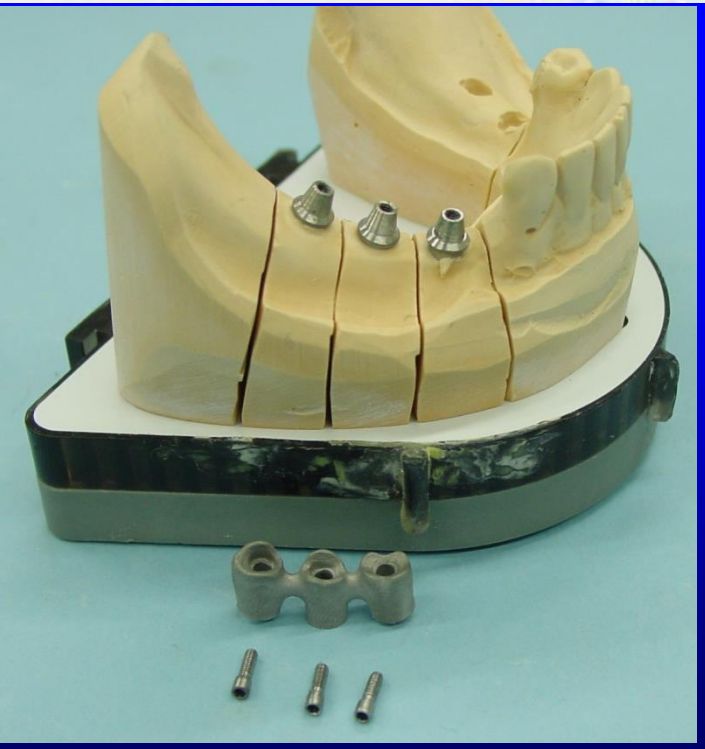
- more difficult completion
- very precise laboratory work is needed
- screw openings may cause esthetic problems

Screw retained FPD



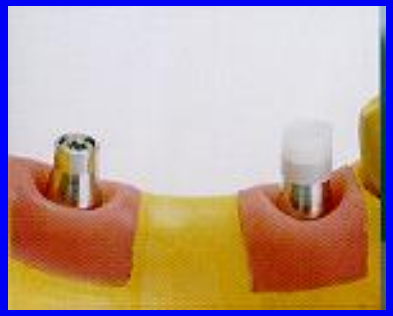
Screw-retained FPD, in the case of limited intermaxillary distance

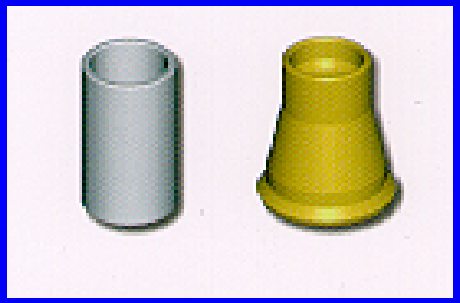




Preparation of screw-retained FPD:

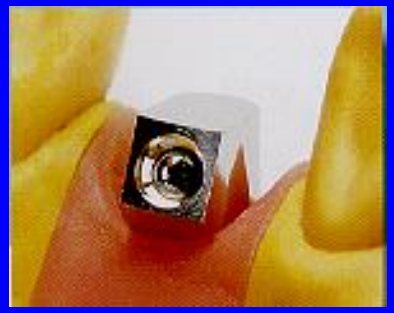
Direction of screw: VERTICAL

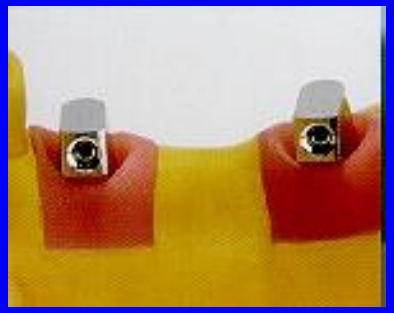




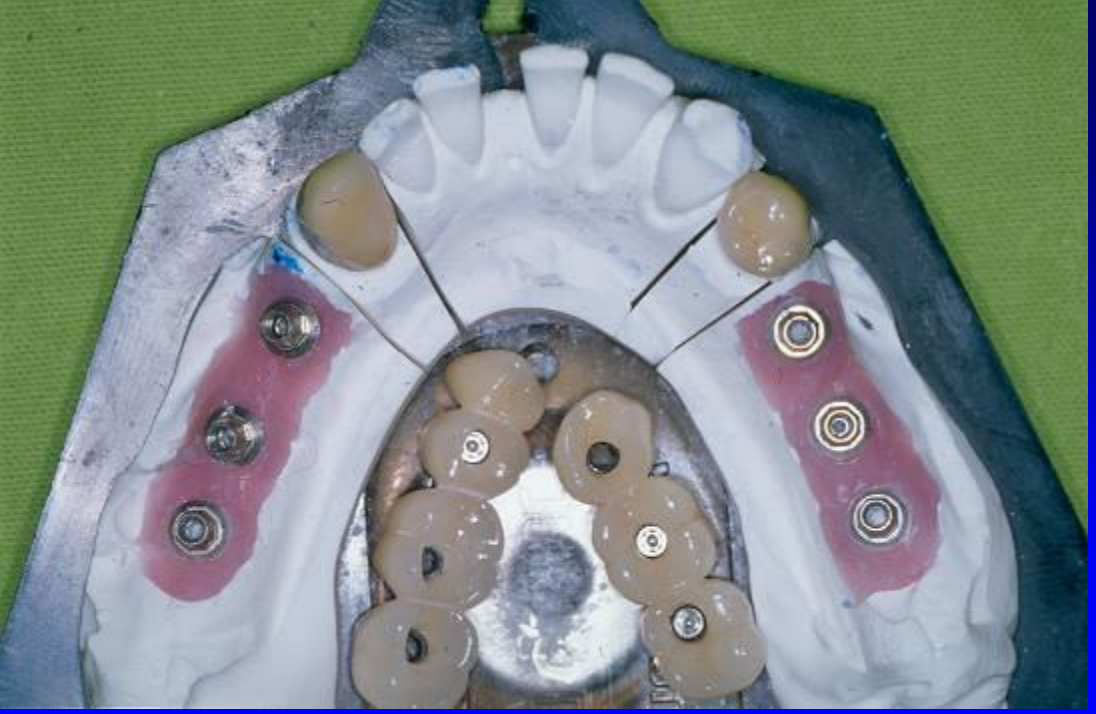
Preparation of screw-retained FPD:

Direction of screw: HORIZONTAL





Screw retained FPDs



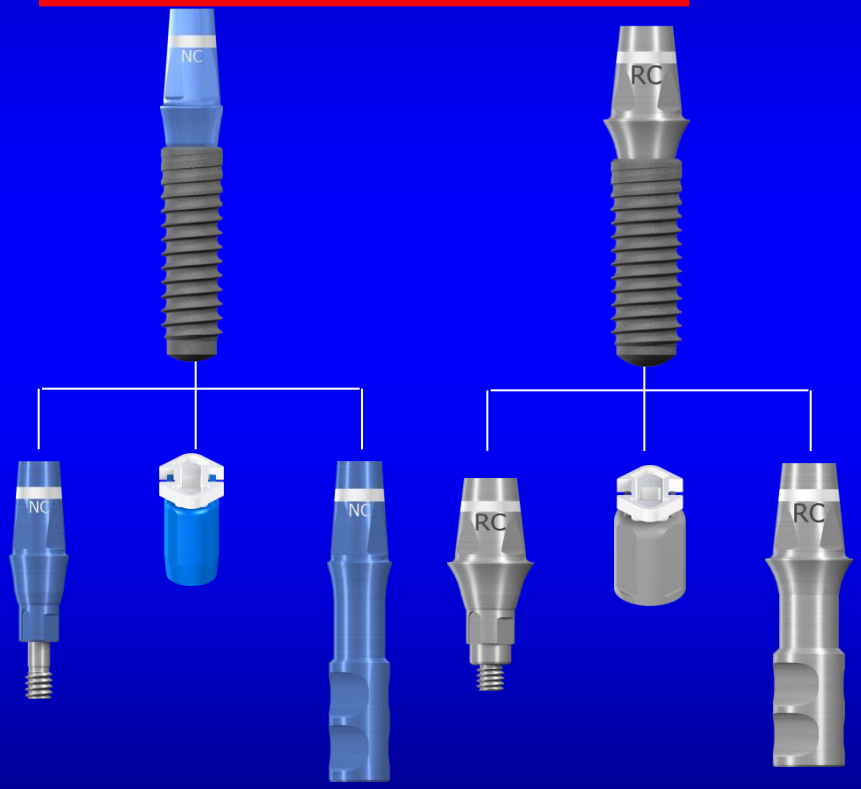
Implant supported and screw-retained fixed partial dentures

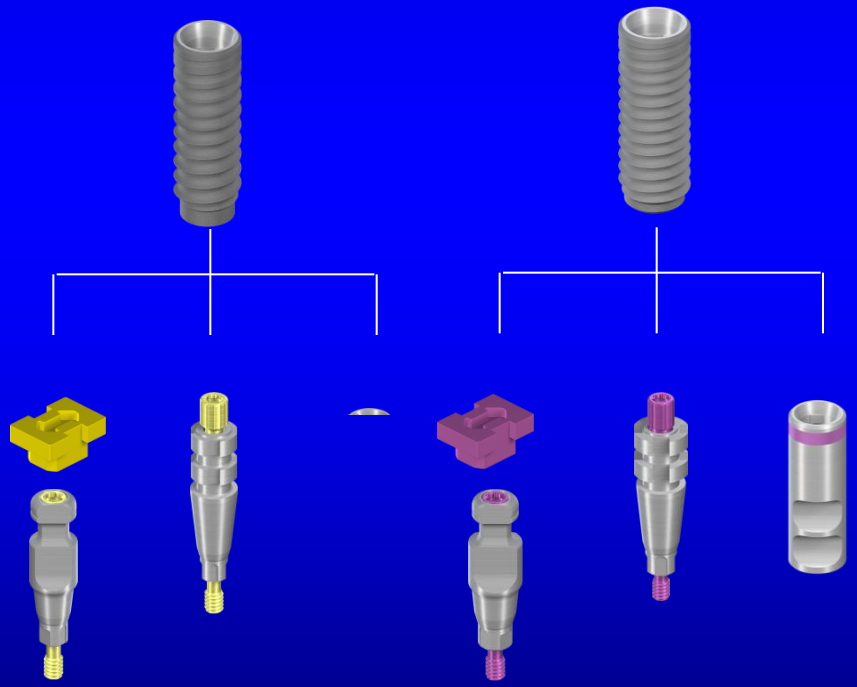
Screw openings covered by composit resin

Possibilities for impression

- Possibility A
  About the abutment

Possibility B
About the implant





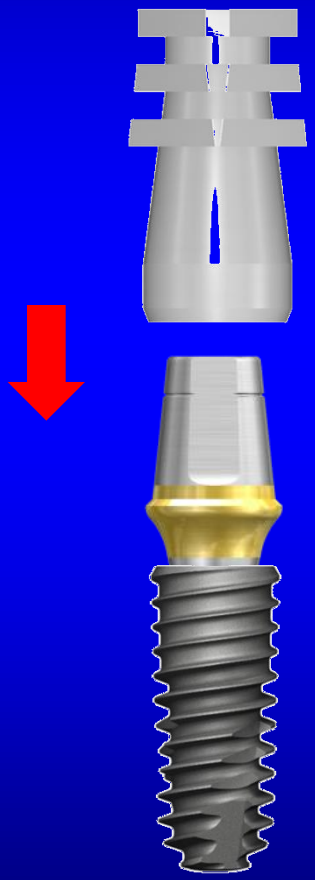
Impression methods on implant level

Closed impression-tray

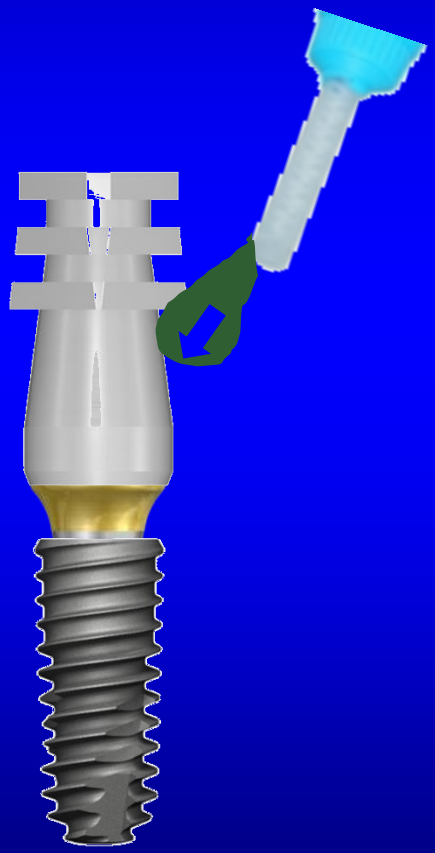
Open impression-tray

How to use Impression Coping

1. Connect Imp. Cap

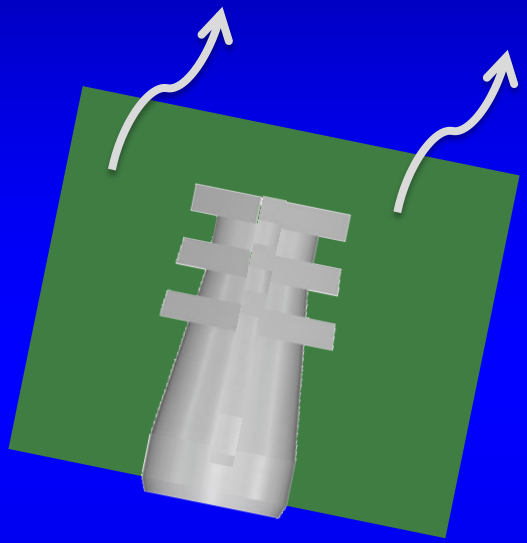


2. Apply impression material

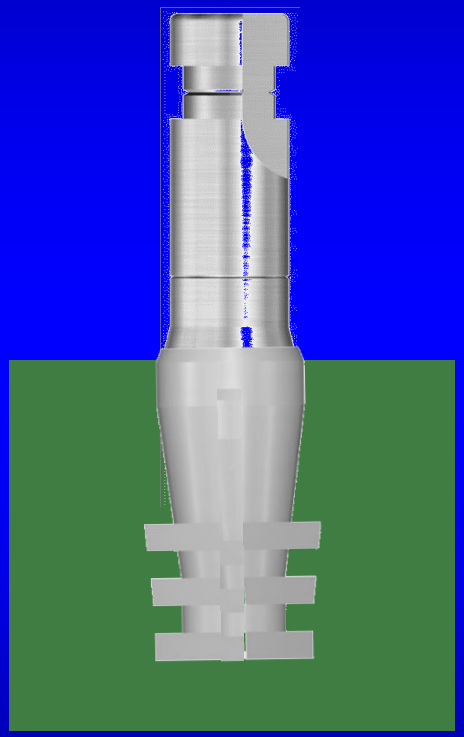


How to use abutment level implant cap

3. Remove impression body



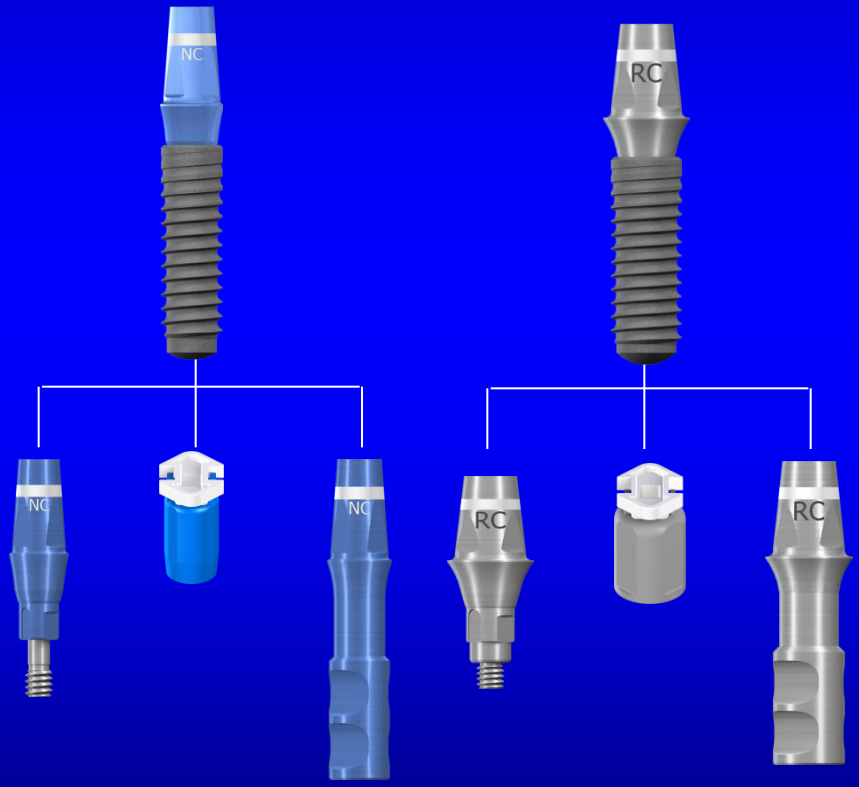
4.Connect Lab analog

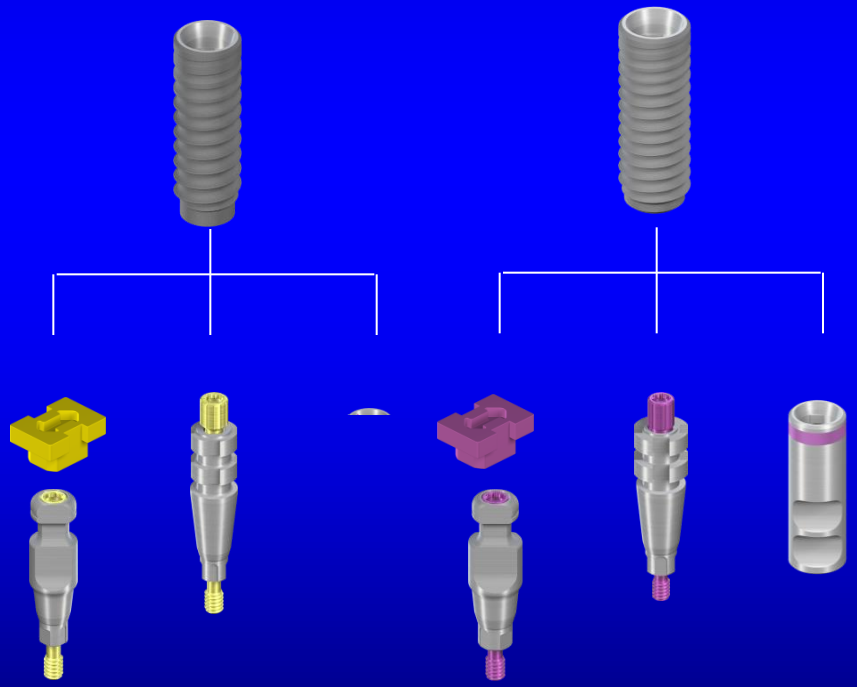


Possibilities for impression

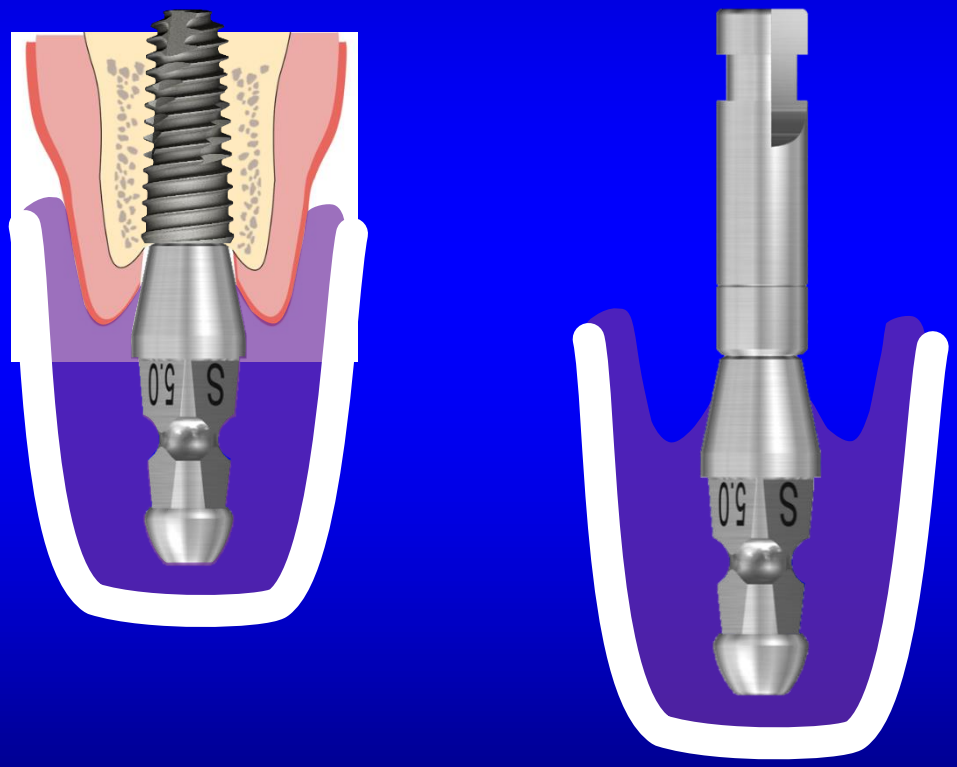
- Possibility A
  About the abutment

Possibility B
About the implant



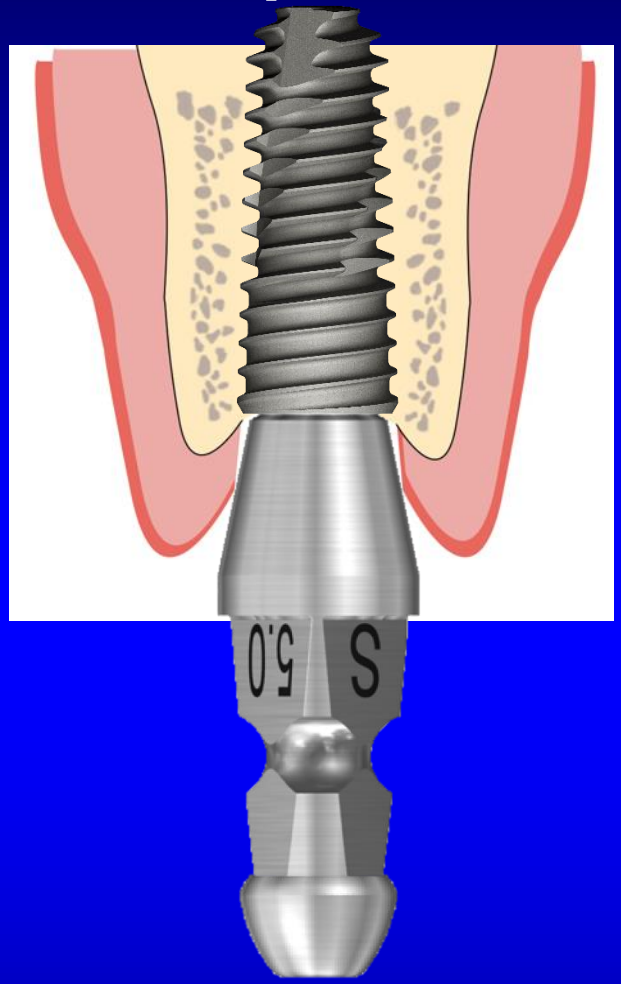


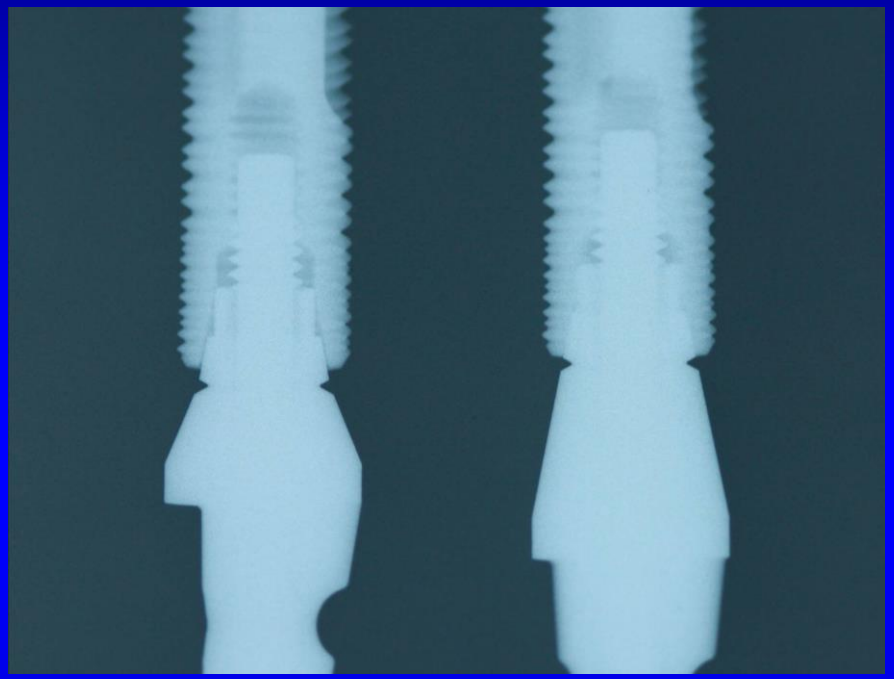
How to use implant level - transfer imp. coping



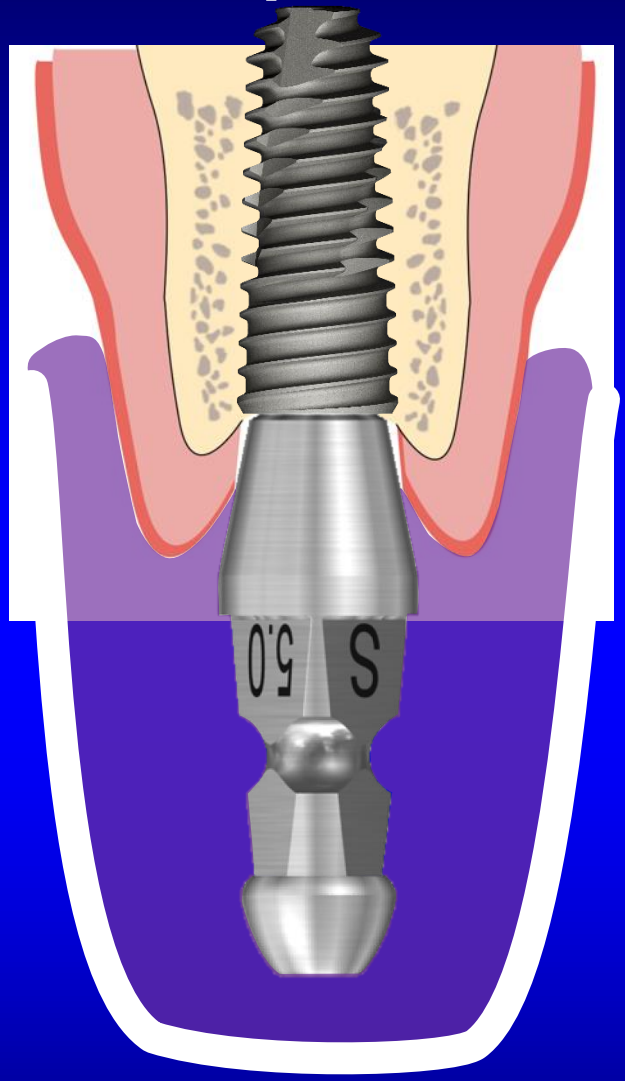
Closed tray technique

How to use implant level - transfer imp. coping

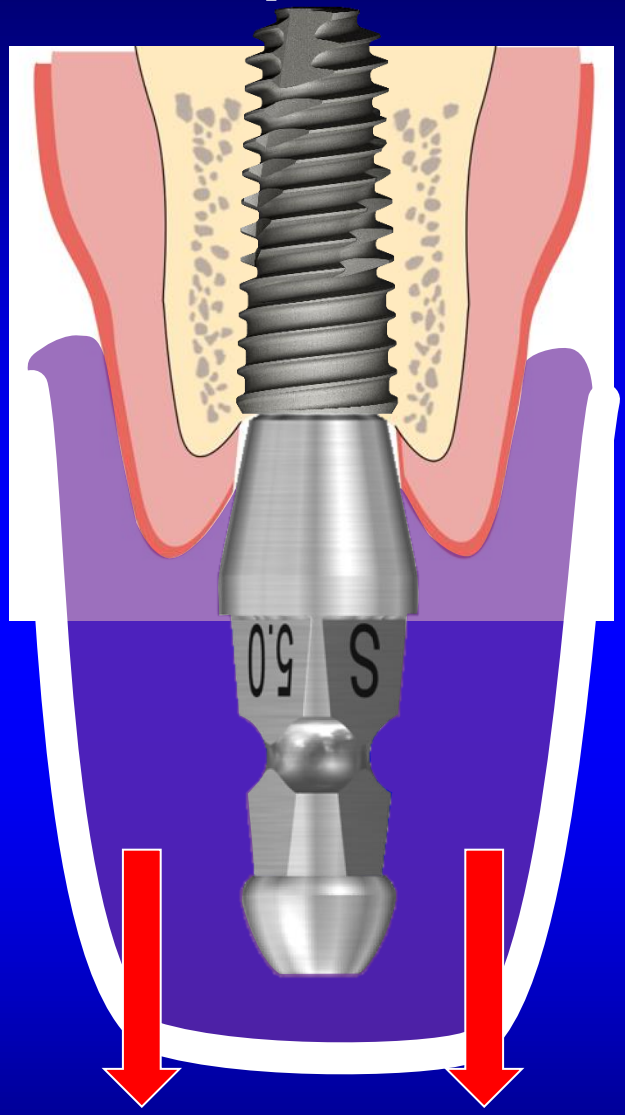




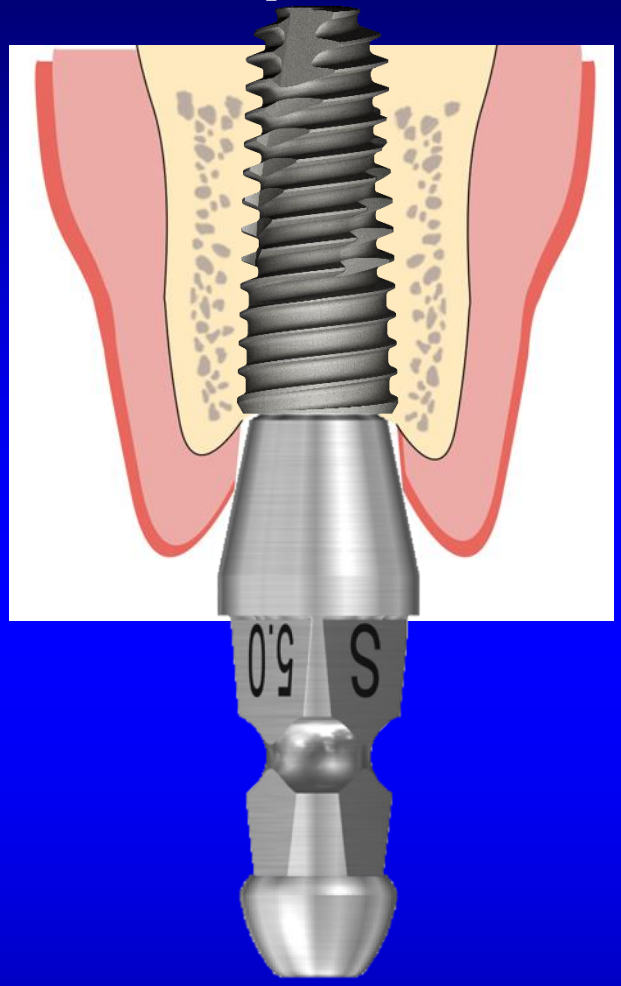
How to use implant level - transfer imp. coping

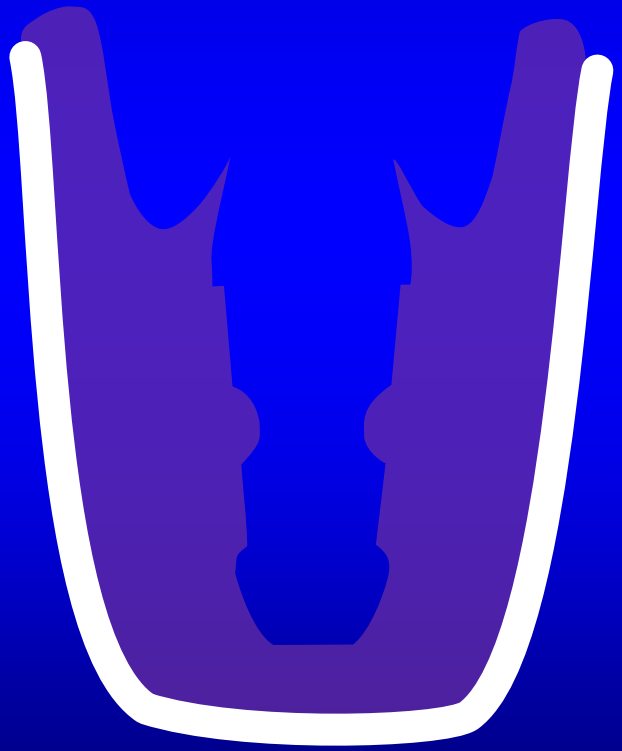


How to use implant level - transfer imp. coping

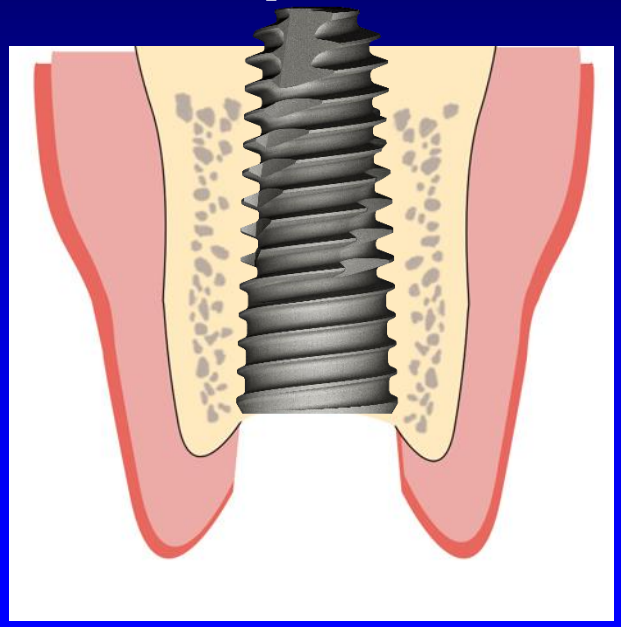


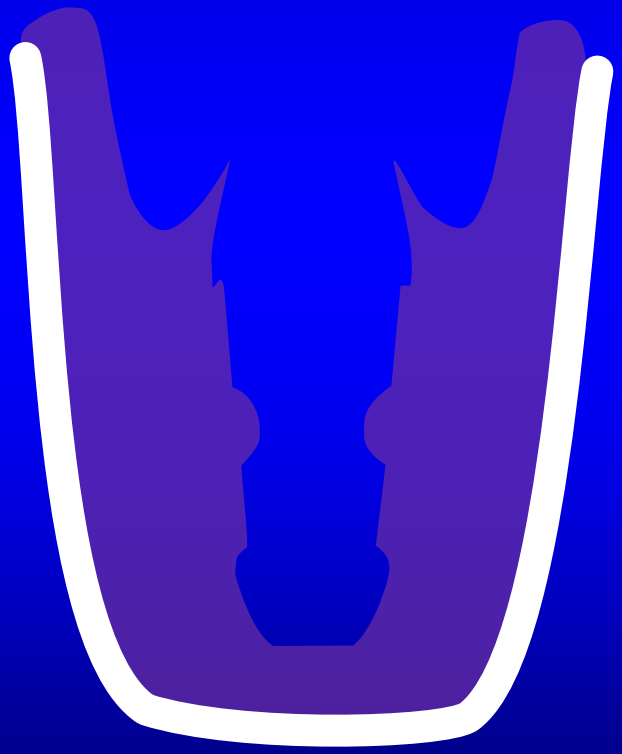
How to use implant level - transfer imp. coping



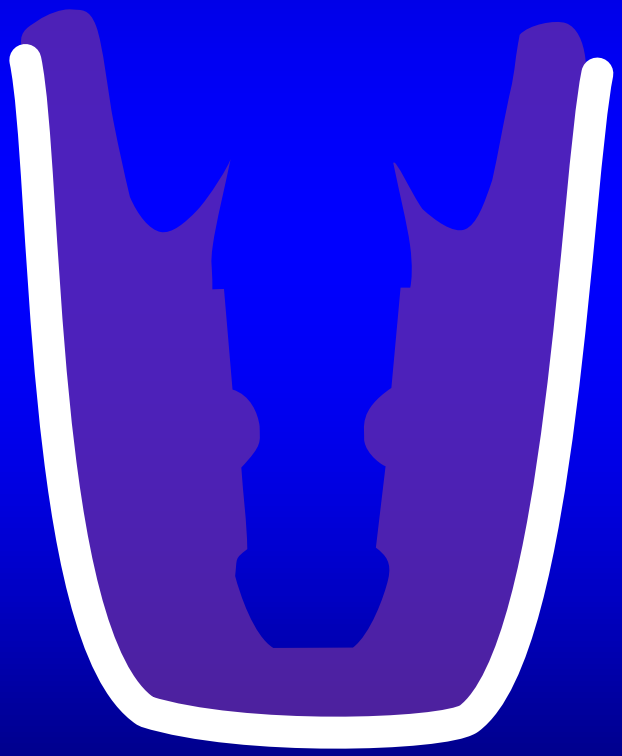


How to use implant level - transfer imp. coping

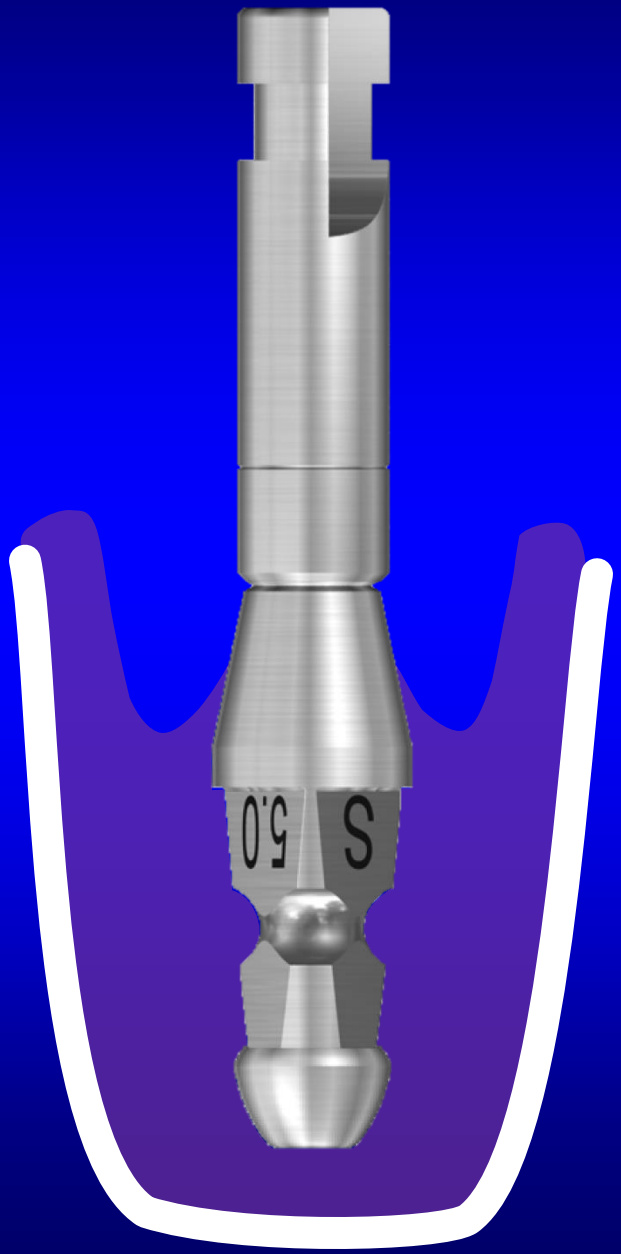




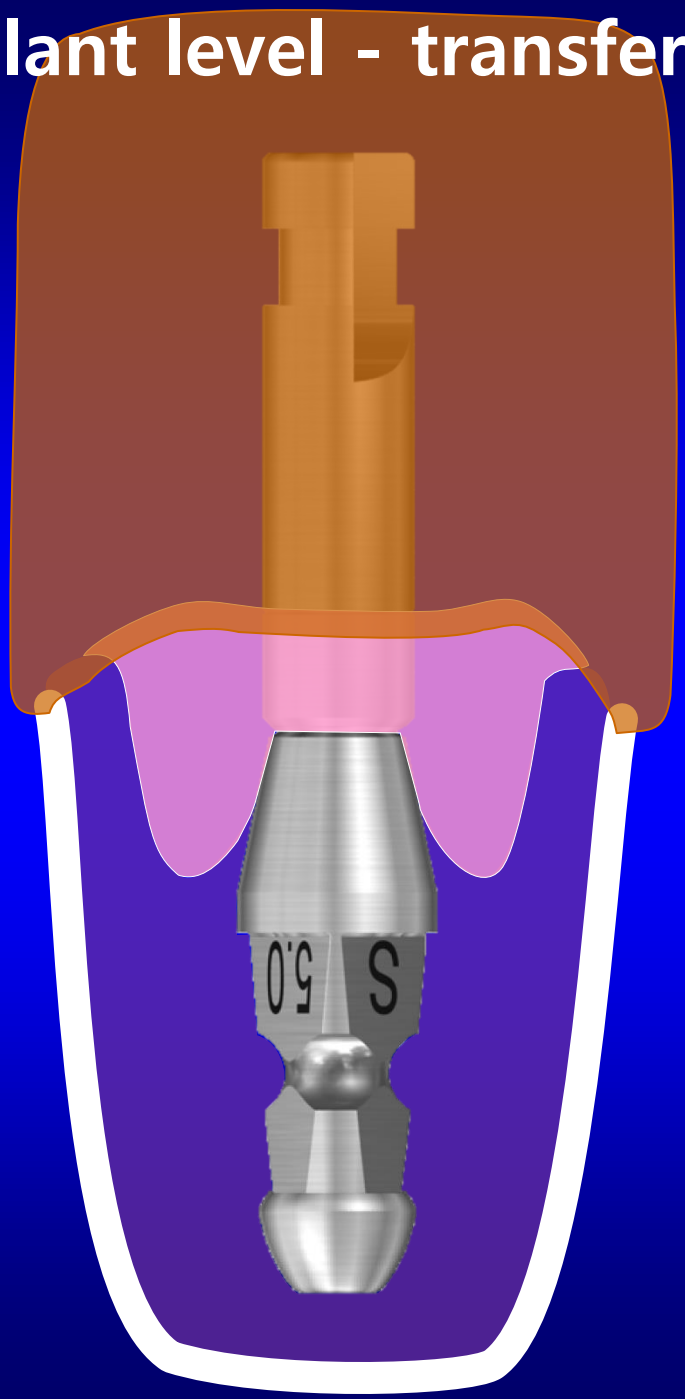
How to use implant level - transfer imp. coping



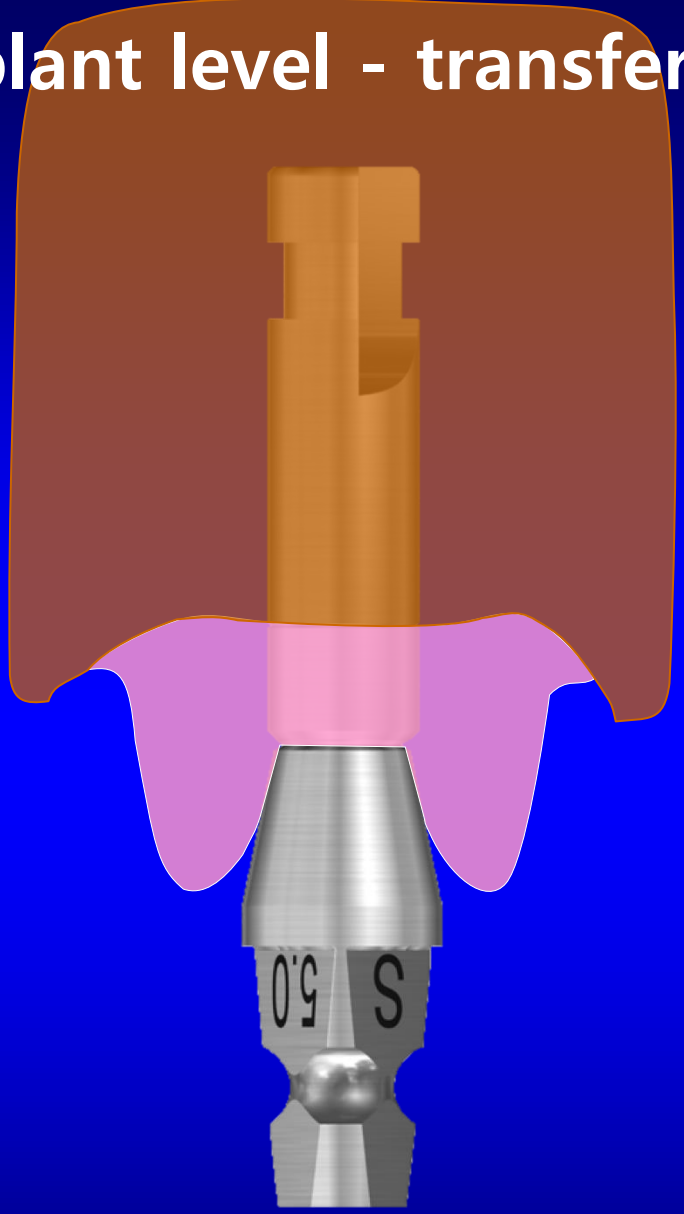
How to use implant level - transfer imp. coping



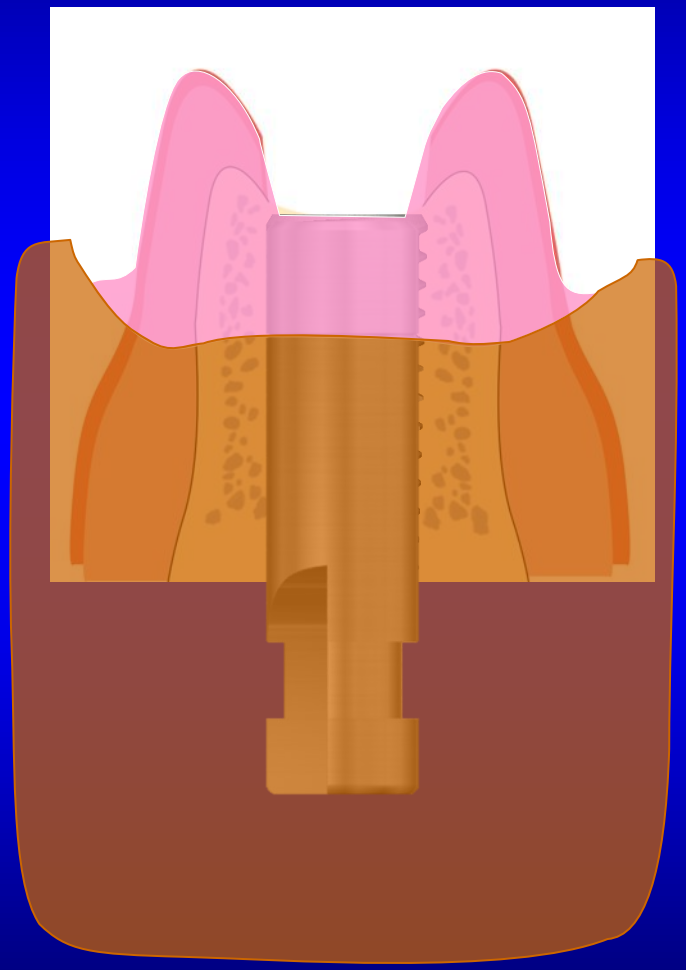
How to use implant level - transfer imp. coping



How to use implant level - transfer imp. coping



How to use implant level - transfer imp. coping



When using closed impression tray method?

- When the implants relatively paralell to each other
- Cement retained restoration on 1-3 implants
- Screw retained restoration on 1-2 implants
- Preliminary impression for open tray
- When fabricating a provisional restoration
- Limited mouth opening

Impression methods on implant level

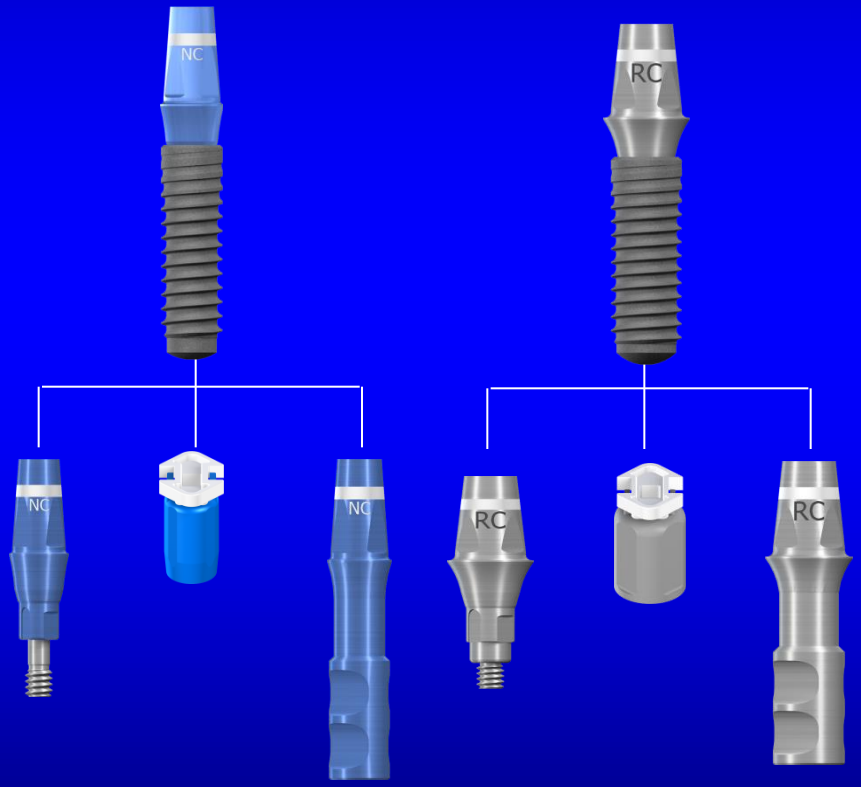
Closed impression-tray

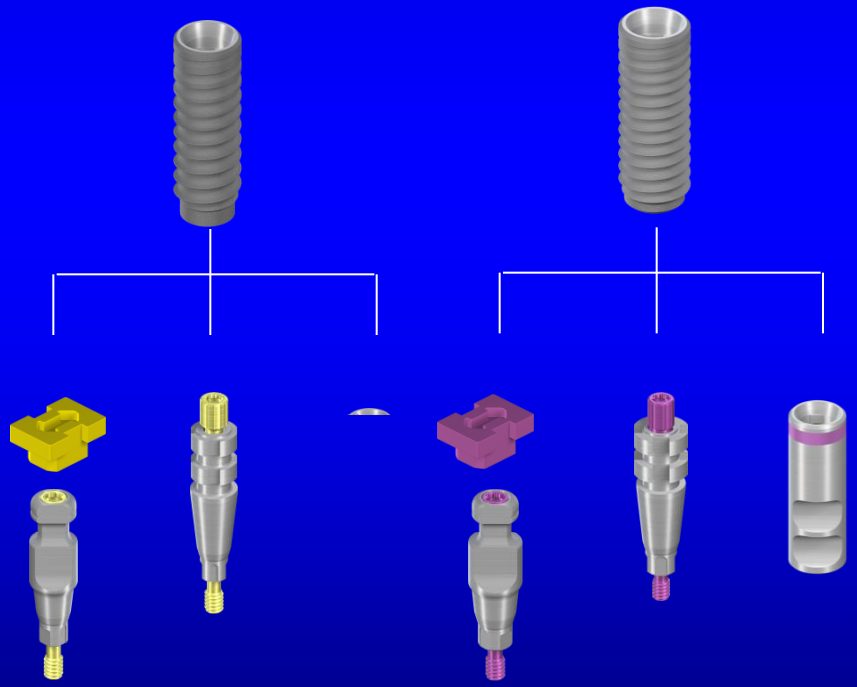
Open impression-tray

Possibilities for impression

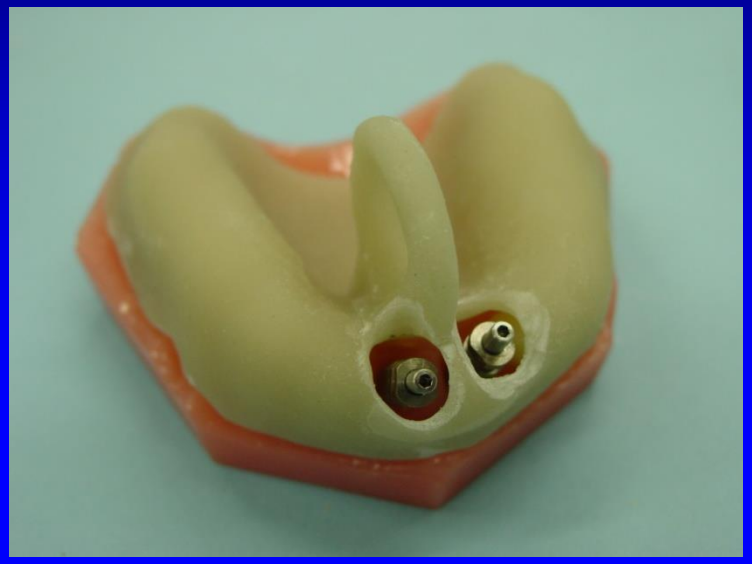
- Possibility A
  About the abutment

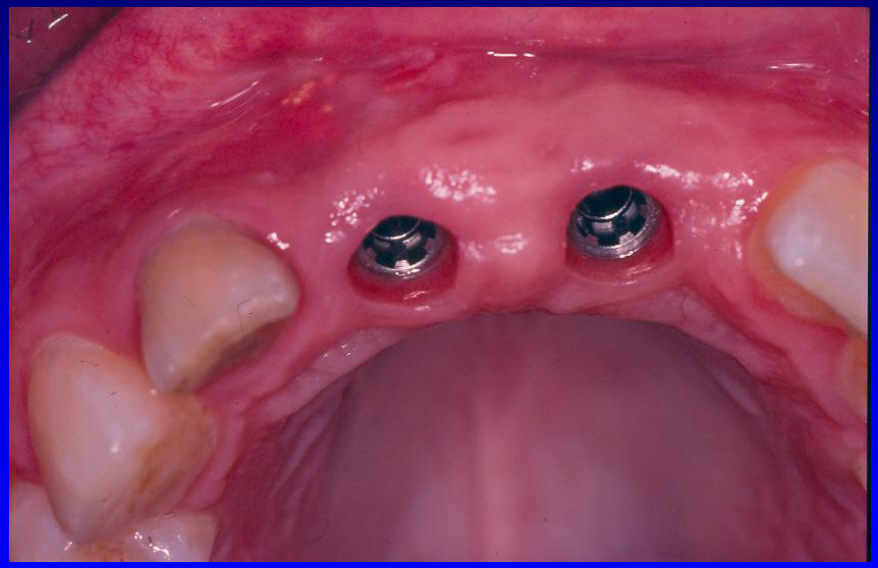
Possibility B
About the implant

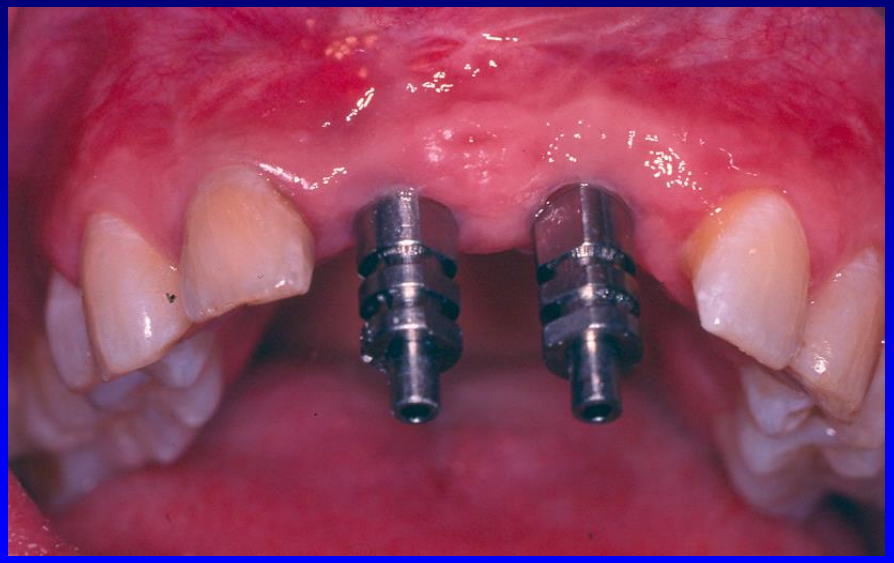


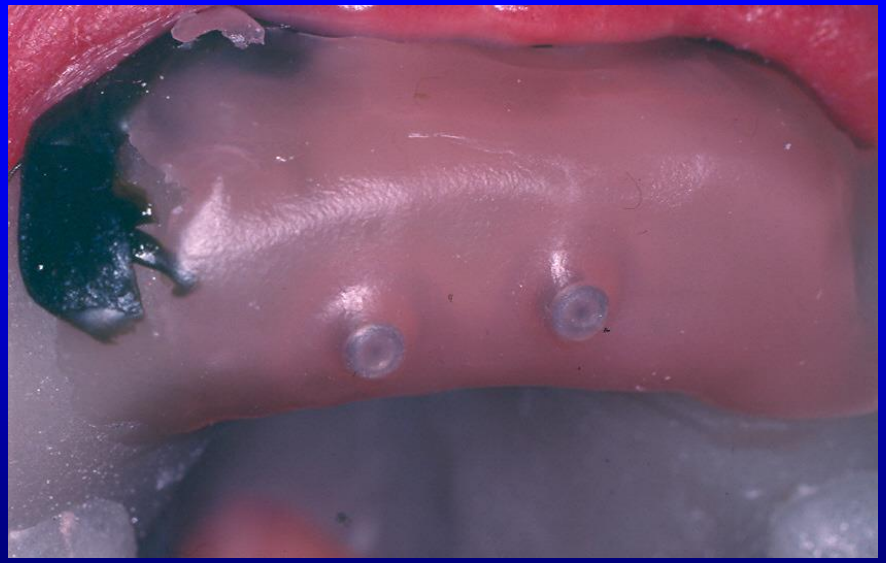


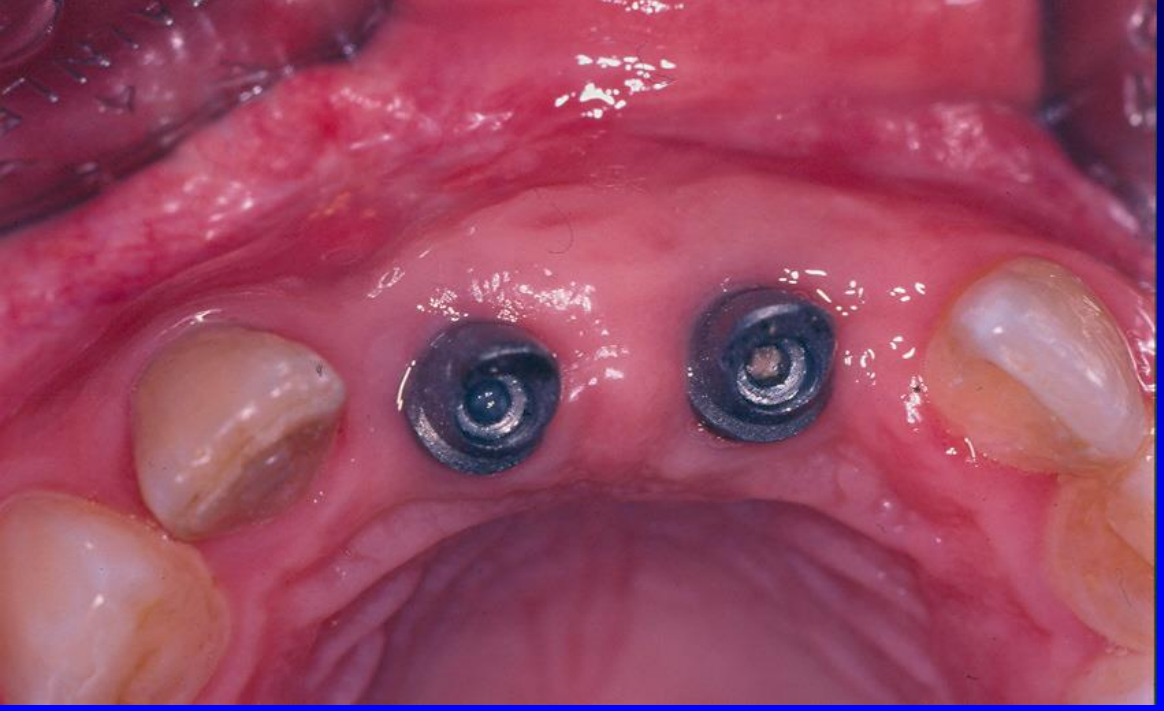
Open tray impression technique











When using an open impression tray method?

- When the implants are not so paralell to each other
- Cement retained restorations on 4 or more implants
- Screw retained restoration on 3 or more implants
- In case of a bar type implant overdenture

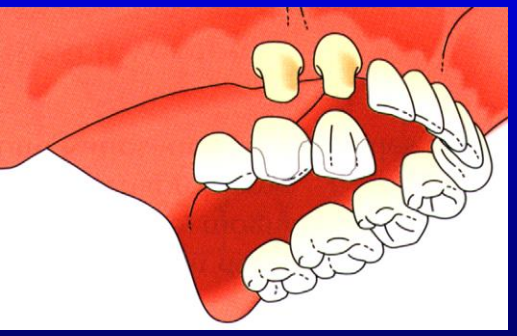
Maxillary „free end” edentulism

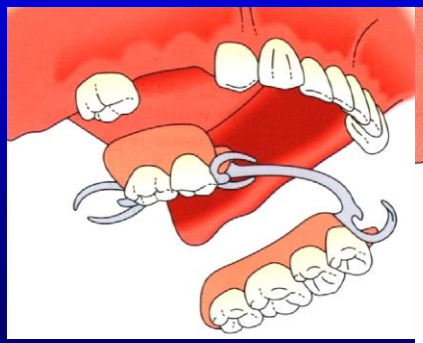
Conventional prosthetic therapy

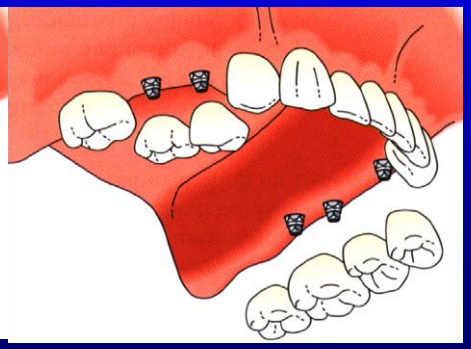
- No treatment
- FPD with cantilever
- Partial removable denture
- Orthodontic treatment: distalization of tooth

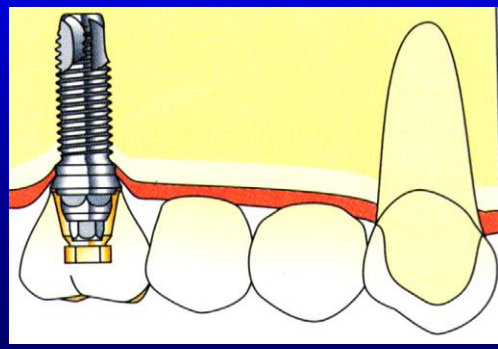
Implant therapy

- Implant supported and retained FPD
- Implant-tooth supported and retained FPD









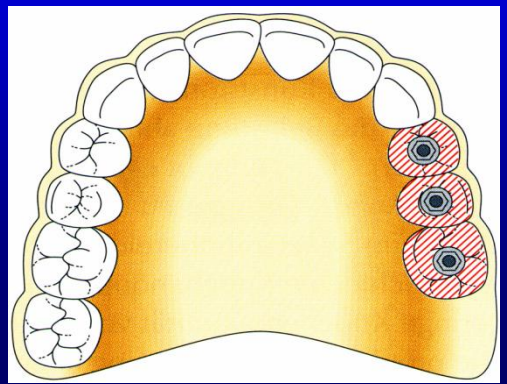
Maxillary „free end” edentulism

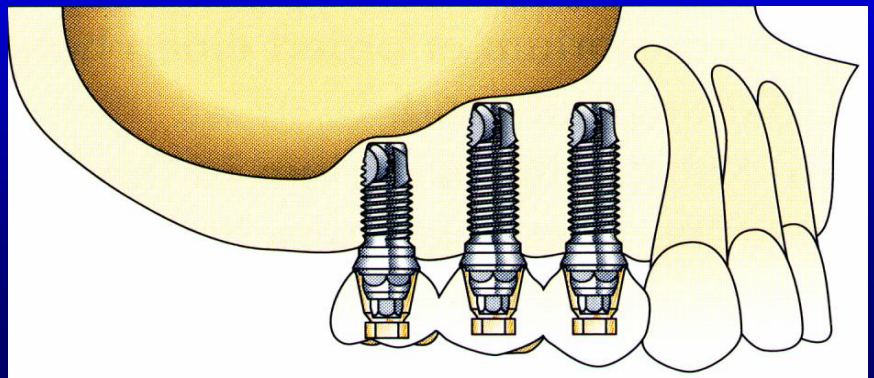
Anatomic limitations:

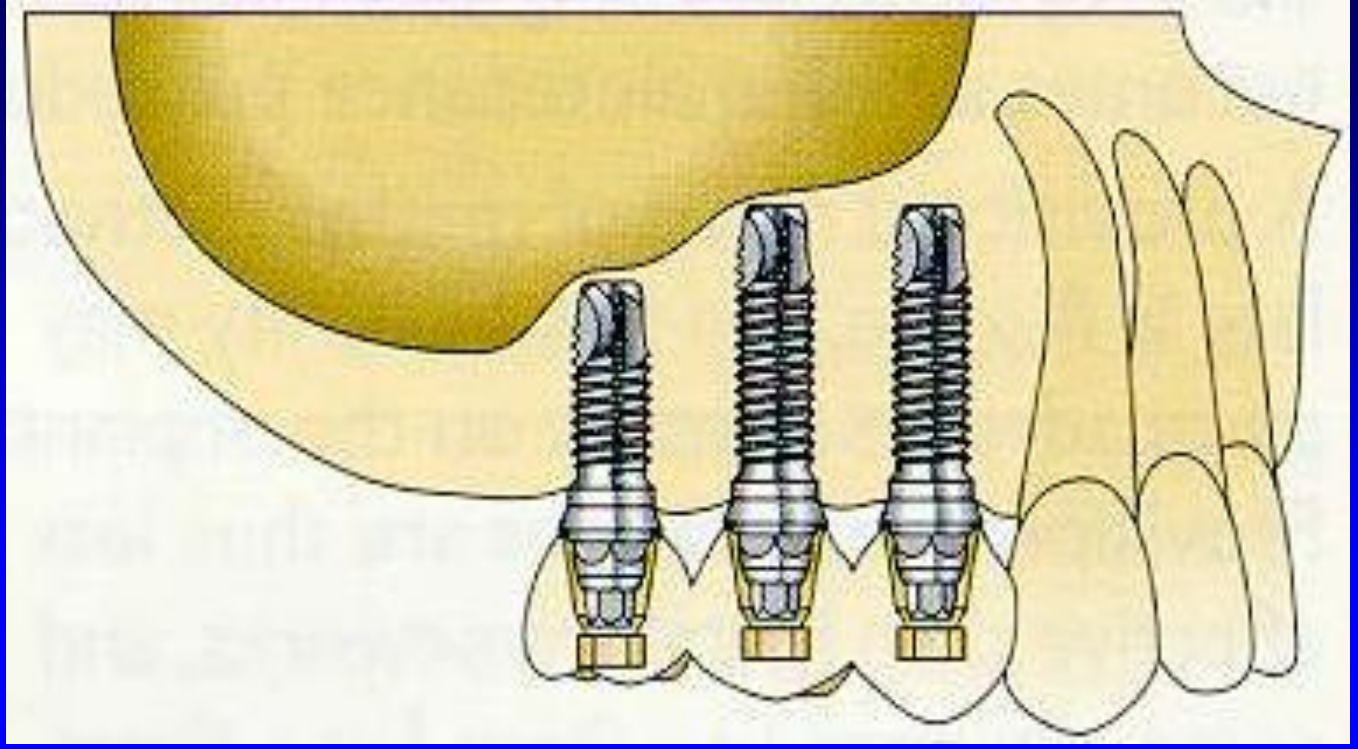
- Maxillary sinus
- Poor bone quality

Concept:

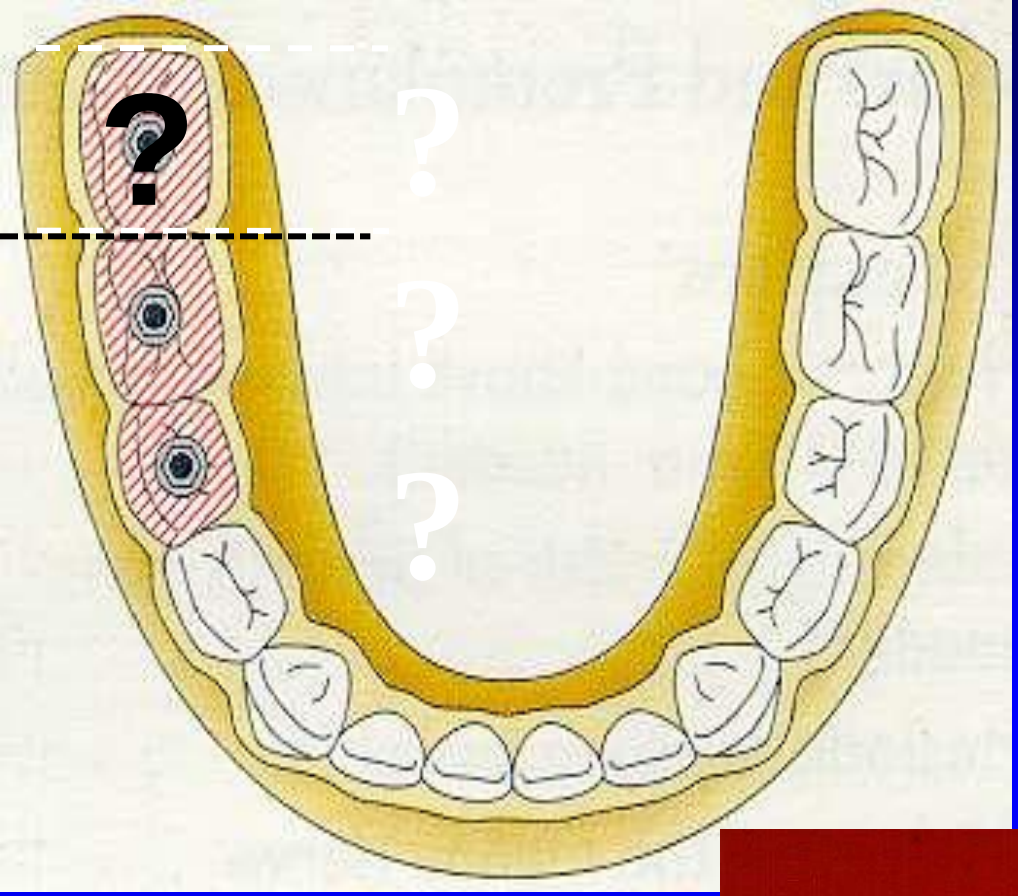
Each missing roots to be replaced by implants







Screw retained FPD



Mandibular „ free end” edentulism:

replacement until first molar

Totally edentulous jaws

Conventional therapy:
Removable denture

Implant therapy:

- **Implant retained ,/supported/ overdenture**
- **Fixed hybrid prosthesis**
- **Implant supported prosthesis**

Totally edentulous jaws

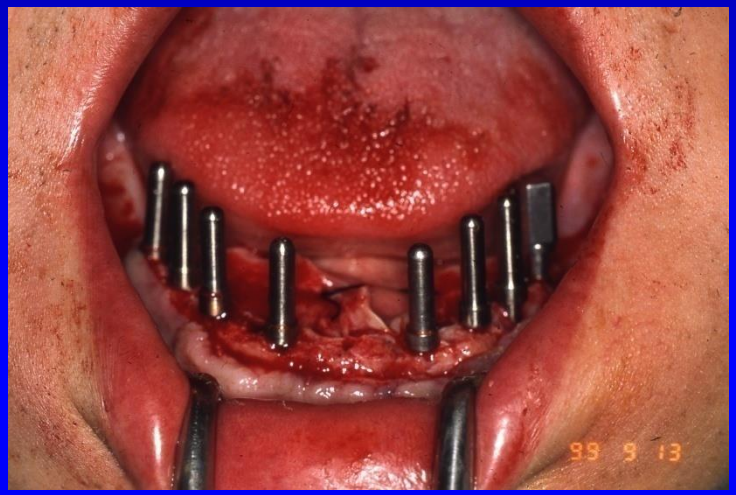
Conventional therapy:
Removable denture

Implant therapy:

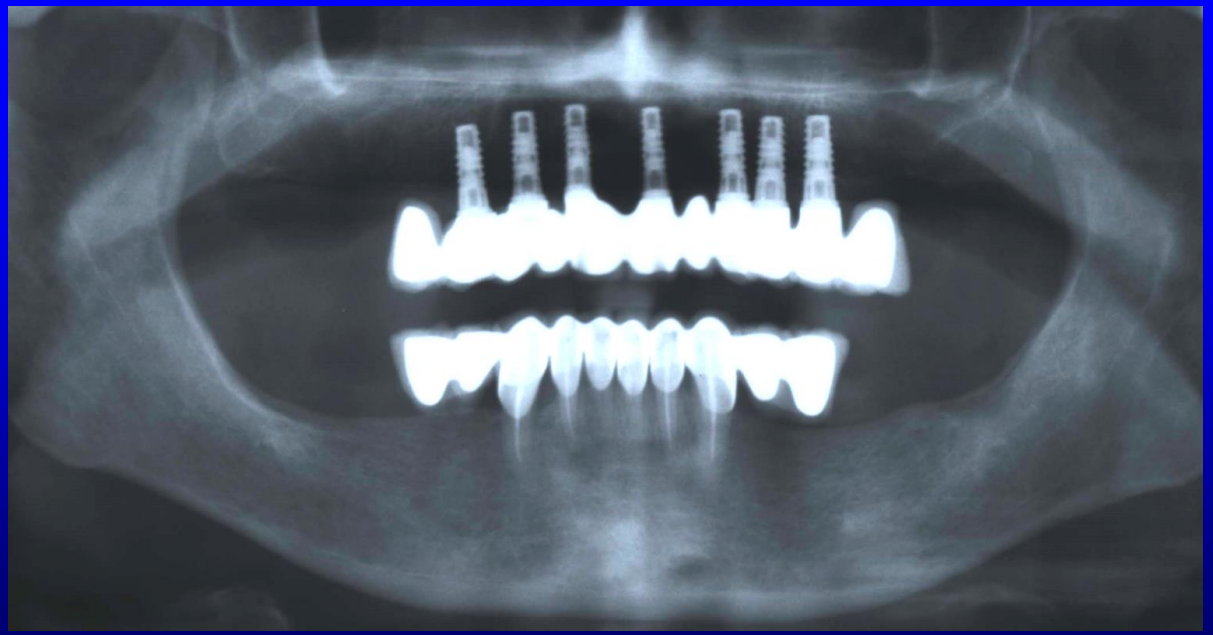
- **Implant retained ,/supported/ overdenture**
- **Fixed hybrid prosthesis**
- **<u>Implant supported prosthesis</u>**

Edentulous mandible

Implant supported prosthesis



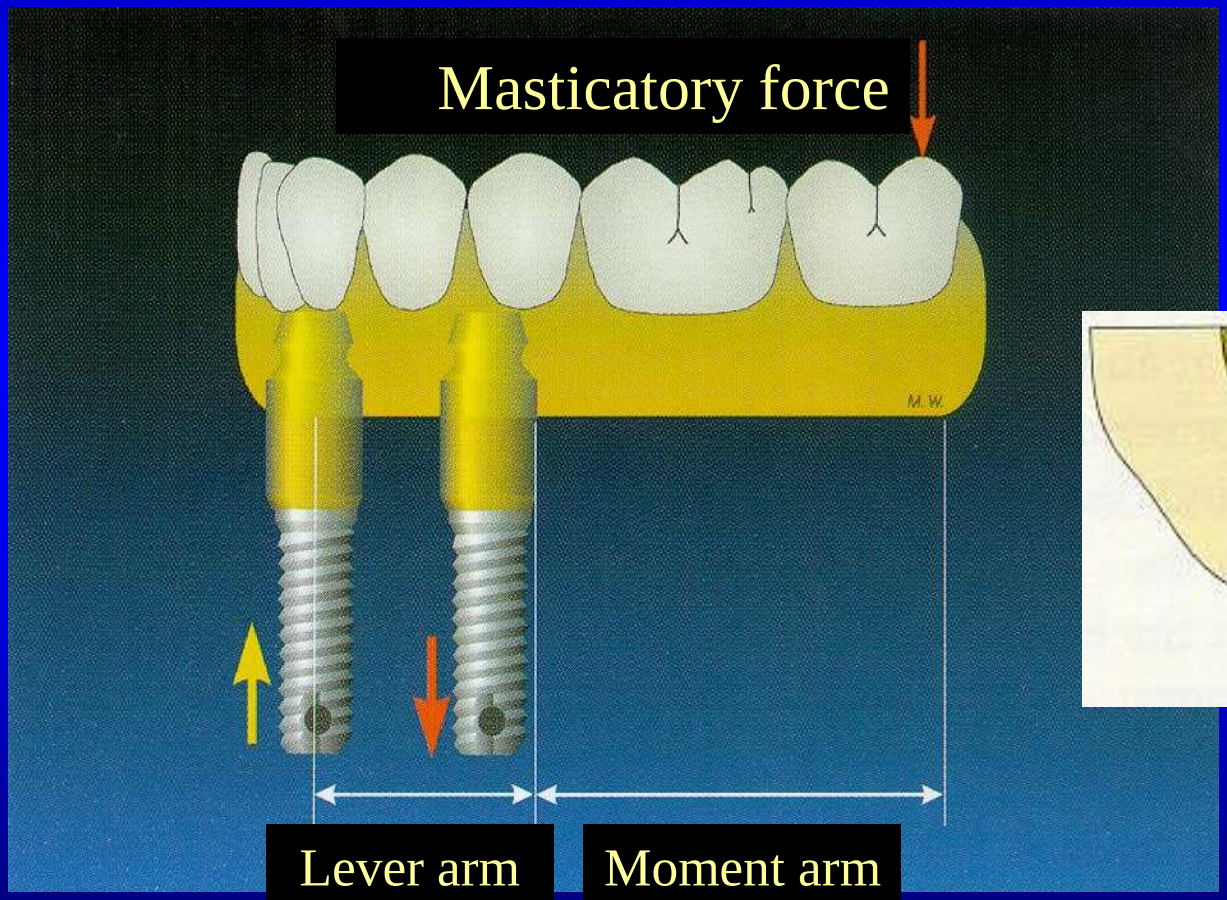
Edentulous maxilla

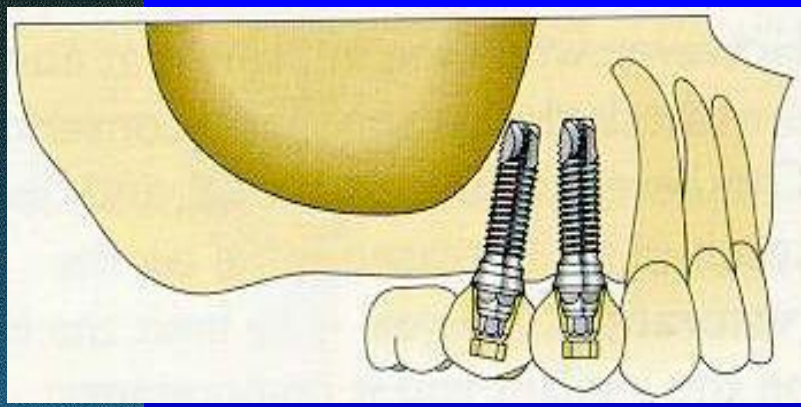


Edentulous maxilla

Implant supported prosthesis with cantilevers

Biomechanics of a cantilever fixed bridge





Cantilever may be acceptable in following clinical situations:

- **edentulous jaws** /distal/
- **pontic replacing lower first premolar** /mesial/
- **pontic replacing lateral upper incisor** /mesial, distal/

Totally edentulous jaws

Implant supported prosthesis

Support:

Implant

Retention:

Implant

Advantages:

- **Stability**
- **Psychological aspects**

Disadvantages:

- **High costs**
- **Optimal bone conditions**
- **Esthetic problems**
- **Phonetic problems**/Maxilla/
- **Hygenic problems**

Totally edentulous jaws

Conventional therapy:
Removable denture

Implant therapy:

- **Implant retained ,/supported/ overdenture**
- **<u>Fixed hybrid prosthesis</u>**
- **Implant supported prosthesis**

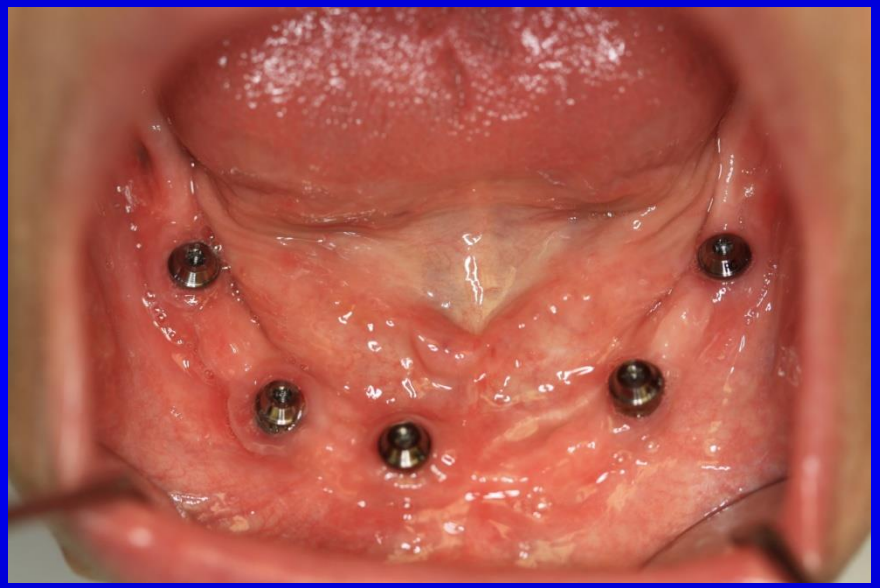
Hybrid prosthesis: Fixed,removable or maxillofacial prosthesis designed and fabricated with an atypical combination of materials or structural components.

/Laney W.R.: Glossary of oral and maxillofacial implants/

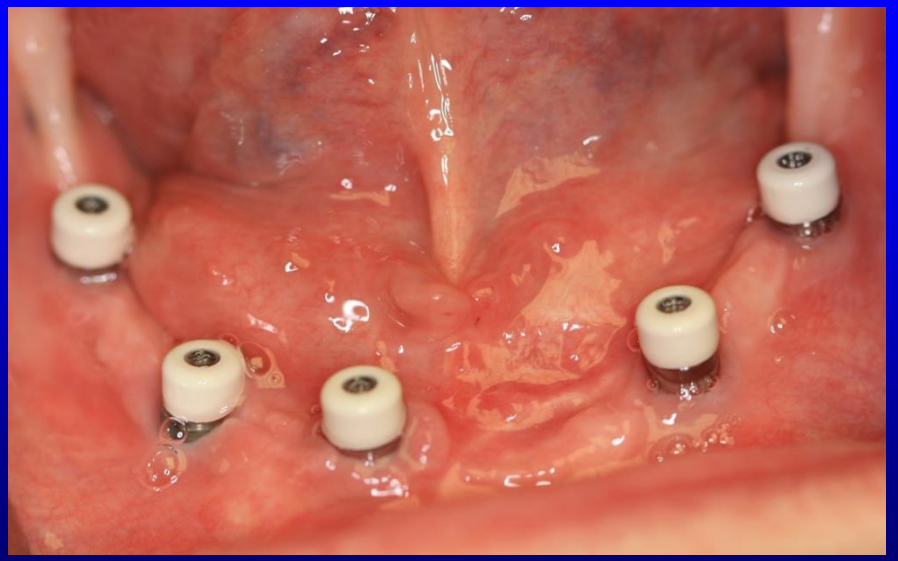
Edentulous mandible

Edentulous mandible

Implants with abutments
for screw retention



Abutments with
hygenic caps



Screw retained, implant supported **hybrid prosthesis**

Totally edentulous jaws

Fixed hybrid prosthesis:

Support:

Implant

Retention:

Implant

Advantages:

- Stability
- Less precise implant positioning is necessary

Disadvantages:

- High costs
- Difficult hygenic access

Totally edentulous jaws

Conventional therapy:
Removable denture

Implant therapy:

- **Implant retained ,/supported/ overdenture**