Planning and Drawing of Prosthetic Treatment for Partial Edentulism Based on the Fábián and Fejérdy Classification

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Fábián and Fejérdy Classification of Partial Edentulism

- Depends on the number and distribution of the remaining teeth
- Depends on the order of the teeth
- Distinguishes between the maxillary and mandibular dental arches
- The classification provides therapeutic recommendations

- 3 main classes: 1, 2, 3

Class 1A, 1B

- The number and position of the remaining teeth allow purely dental support of the partial denture.
- To compensate for the torque occurring in Class 1B, one or more auxiliary abutments are included in addition to the main abutments.

Class 2A, 2B, 2A/1

- The number of remaining teeth does not allow purely dental support of the prosthesis: dentomucosal (or mucodental) support.
- The prosthesis may sink in one direction.

Class 3

- The remaining teeth are positioned diagonally in the dental arch; therefore, the prosthesis may sink in two directions, i.e. it may rock/tilt.
- The prosthesis is generally mucodentally supported.

Basis of the drawing

- **Metal – blue**
- **Ceramic – green**
- **Acrylic – red**
- **Matrix part of the hidden attachment – yellow**
- **Zirconia – orange**

Treatment plan recommendations based on the Fábián and Fejérdy classification of partial edentulism

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Class 1A

- The partial denture is completely dentally supported. No torque is generated, and the prosthesis does not sink in any direction. Whenever possible, a fixed prosthesis is always fabricated.
- **Treatment plan: fixed prosthesis (tooth-supported bridge)**
- **Type of support: dental**

- In certain cases, a removable partial denture is fabricated in this class: when the patient's general health does not allow the fabrication of a fixed prosthesis (e.g. during chemotherapy, active hepatitis, severe heart disease, etc.) or when there is excessive bone resorption in the jaw that cannot be reconstructed.

Class 1A

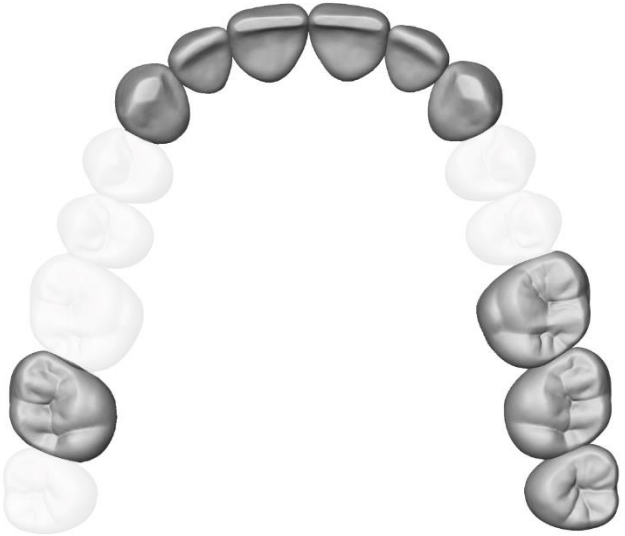
UPPER ARCH: FIXED PROSTHESIS

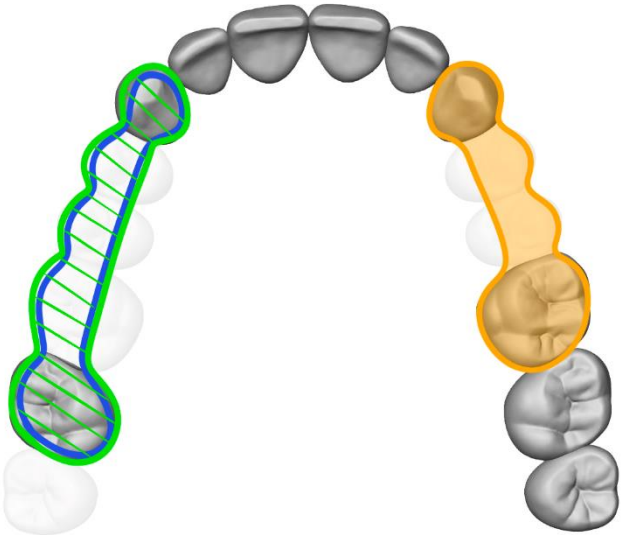
5-unit metal-ceramic bridge (CoCr) fabricated using laser-sintering technology

- Veneered retainer crowns: 13, 17
- Veneered pontics: 14, 15, 16

4-unit monolithic zirconia bridge fabricated using CAD/CAM technology

- Retainer crowns: 23, 26
- Pontics: 24, 25





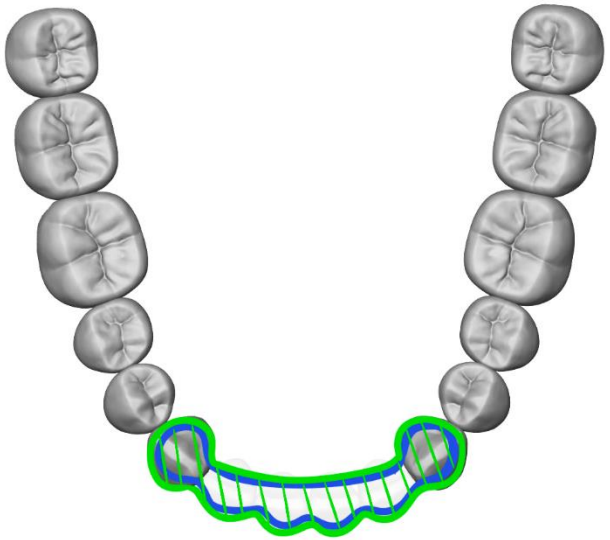
Class 1A

LOWER ARCH: FIXED PROSTHESIS



6-unit metal-ceramic bridge (CoCr) fabricated using laser-sintering technology

- Veneered retainer crowns: 33, 43
- Veneered pontics: 32, 31, 41, 42

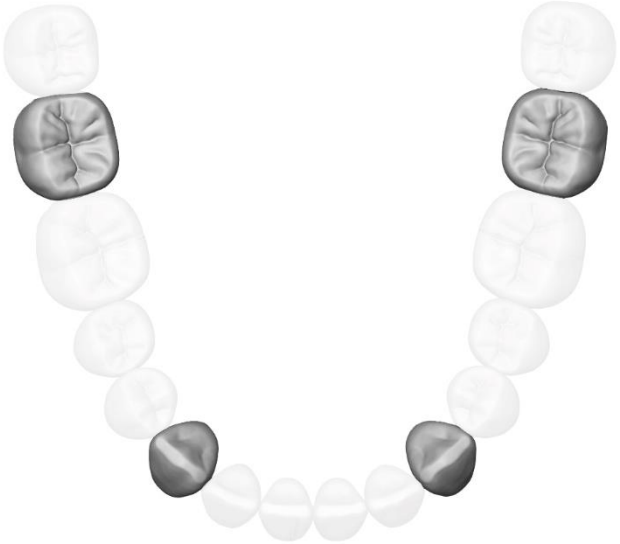


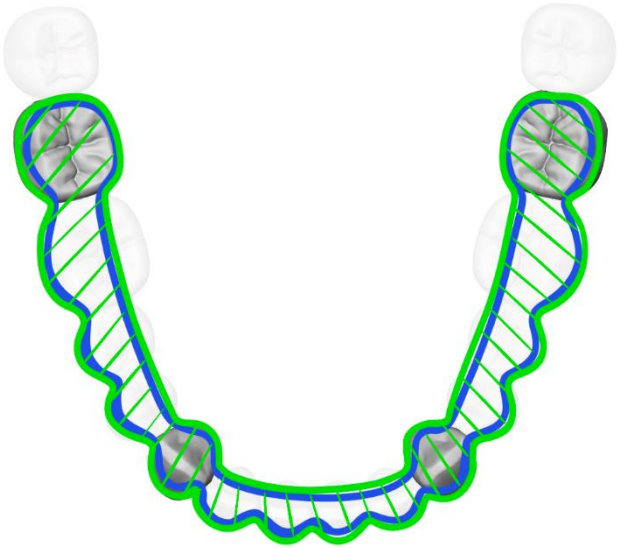
Class 1A

LOWER ARCH: FIXED PROSTHESIS

14-unit metal-ceramic bridge (CoCr)
fabricated using laser-sintering technology

- Veneered retainer crowns: 37, 33, 43, 47
- Veneered pontics: 36, 35, 34, 32, 31, 41, 42, 44, 45, 46





Class 1B

- Torque is generated but can be compensated. We compensate for the overload caused by unfavourably directed forces by including one or more auxiliary abutments in addition to the main abutments. A fixed prosthesis is fabricated whenever possible.
- **Treatment plan: fixed prosthesis (extended bridge)**
- **Type of support: dental**

- If a removable partial denture is fabricated:
  - Dental support, a removable partial denture retained with rigid clasps, with occlusal rests on the clasp-bearing teeth
  - The denture base is reduced as much as possible

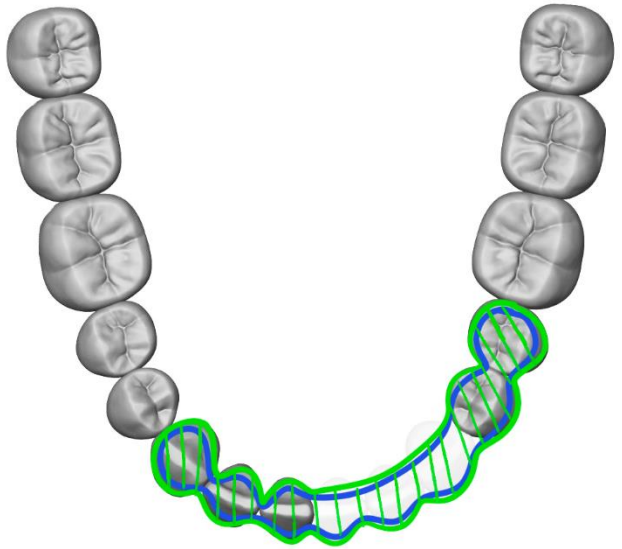
Class 1B

LOWER ARCH: FIXED PROSTHESIS

8-unit metal-ceramic bridge (CoCr) fabricated using laser-sintering technology

- Veneered retainer crowns: 34, 35, 41, 42, 43
- Veneered pontics: 31, 32, 33



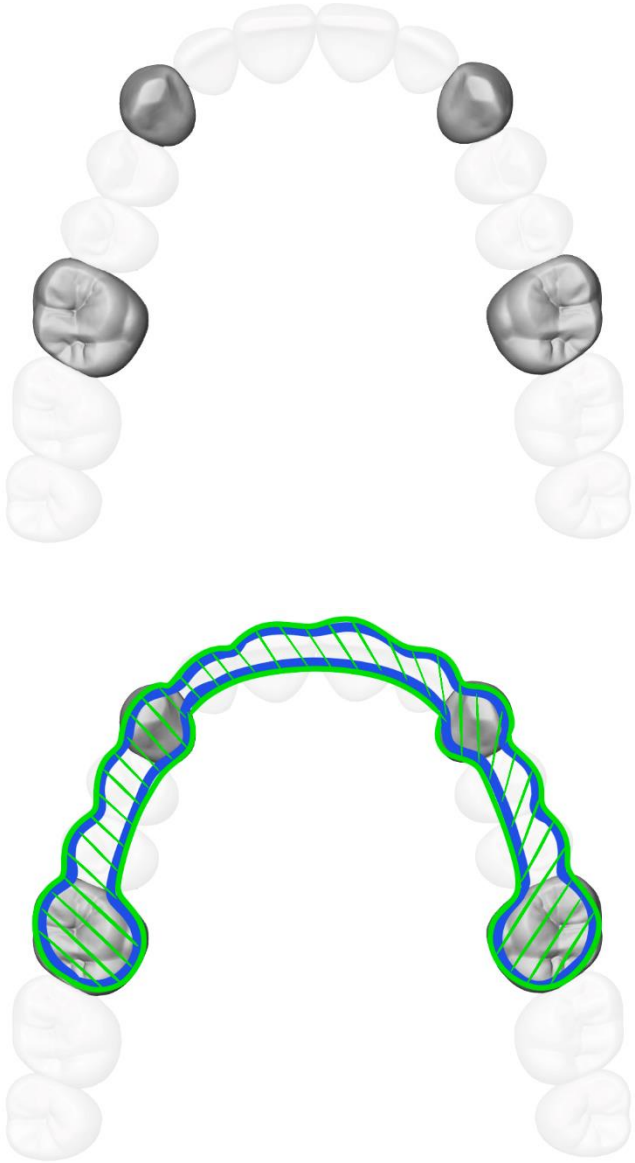


Class 1B

UPPER ARCH: FIXED PROSTHESIS

12-unit metal-ceramic bridge (CoCr) fabricated using laser-sintering technology

- Veneered retainer crowns: 13, 16, 23, 26
- Veneered pontics: 11, 12, 14, 15, 21, 22, 24, 25

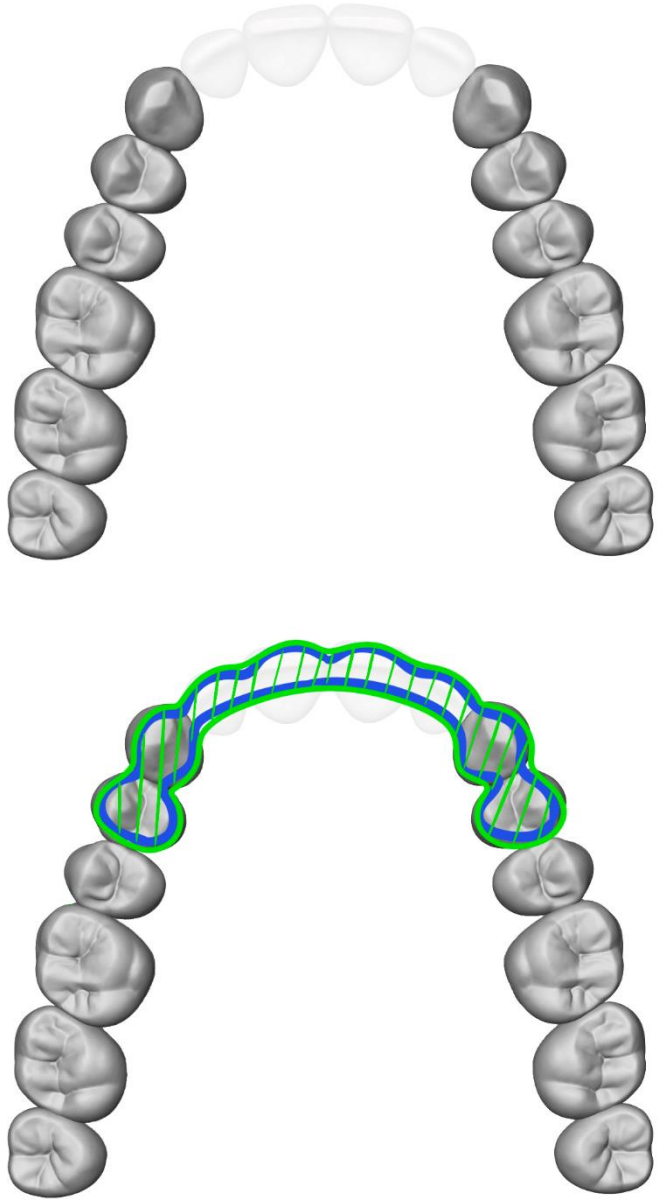


Class 1B

UPPER ARCH: FIXED PROSTHESIS

8-unit metal-ceramic bridge (CoCr) fabricated using laser-sintering technology

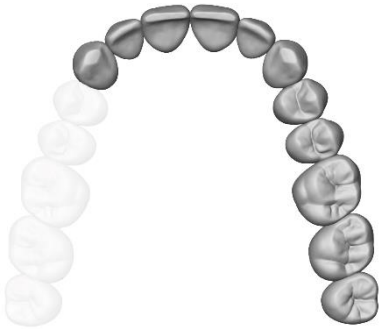
- Veneered retainer crowns: 13, 14, 23, 24
- Veneered pontics: 11, 12, 21, 22

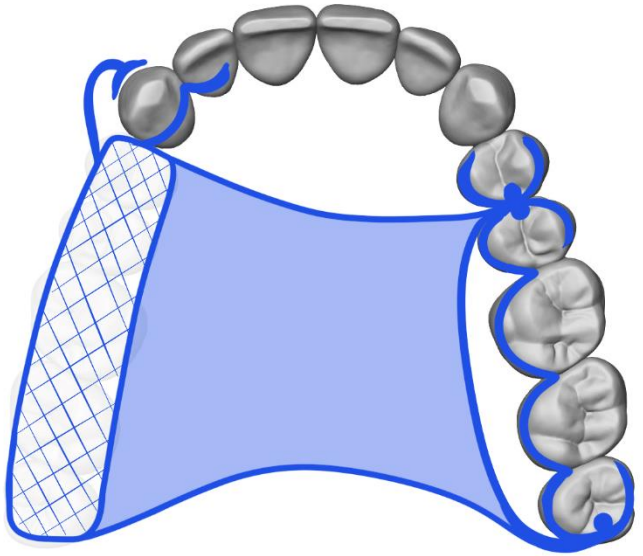


Class 2A

- The remaining teeth are positioned in one block. Unfavourably directed tipping forces occur (the prosthesis may sink in one direction), therefore the removable partial denture must be supported and carried by the remaining teeth.
- **Treatment plan:**
  - **A: Clasp-retained removable partial denture**
  - **B: Combined fixed-removable prosthesis with rigid clasp retention, with the fabrication of surveyed/retainer crowns**
  - **C: Combined fixed-removable prosthesis with hidden attachments**
  - **D: Telescopic overdenture**
- **Support: dentomucosal or mucodental**
- **Denture baseplate if reduced:**
  - **Upper arch: reduced in a butterfly or horseshoe shape, casted or laser-sintered**
  - **Lower arch: reduced in a lingual bar**
- **Retention: rigid clasps, hidden attachments, telescopes**

Class 2A





UPPER ARCH: Clasp-retained removable partial denture

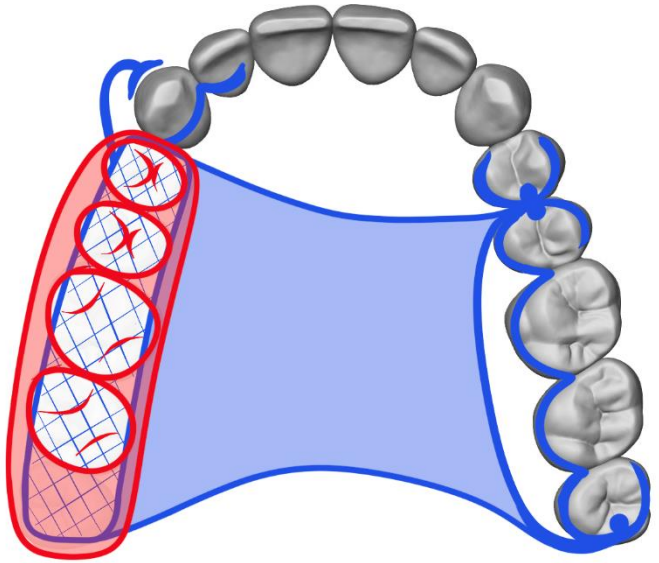
Support: dentomucosal

- Casted/Laser-sintered metal (CoCr) baseplate, reduced in a butterfly shape
- occlusal rests: 24, 25, 28

Retention:

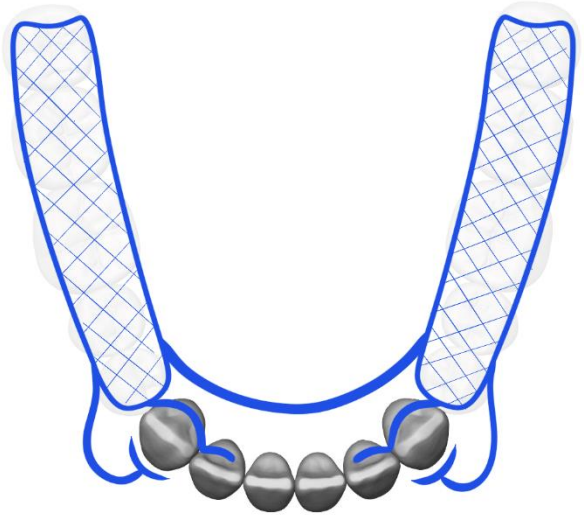
- Rigid clasp retention on teeth 13, 24, 25, 28
  - Roach C clasp: 13
  - Bonwill clasp: 24-25
  - Ney-1 clasp: 28
- Indirect retainer extension: 12
- Continuous clasp: 26, 27

4 acrylic denture teeth (14, 15, 16, 17)

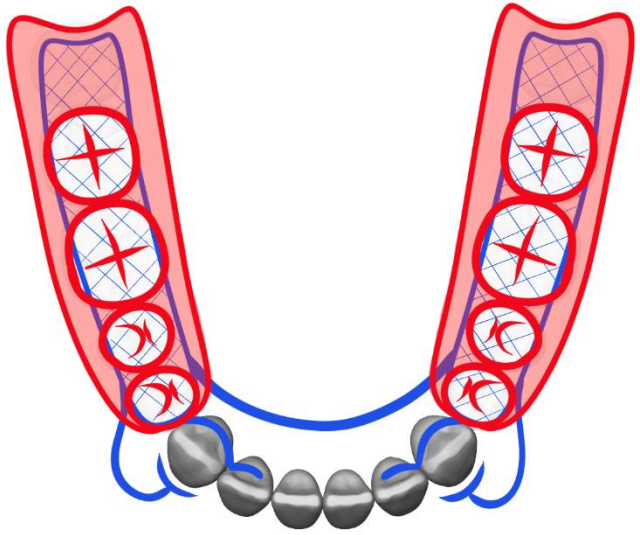


Class 2A





LOWER ARCH: Clasp-retained removable partial denture



Support: dentomucosal

- Casted/Laser-sintered, reduced metal (CoCr) baseplate with a lingual bar

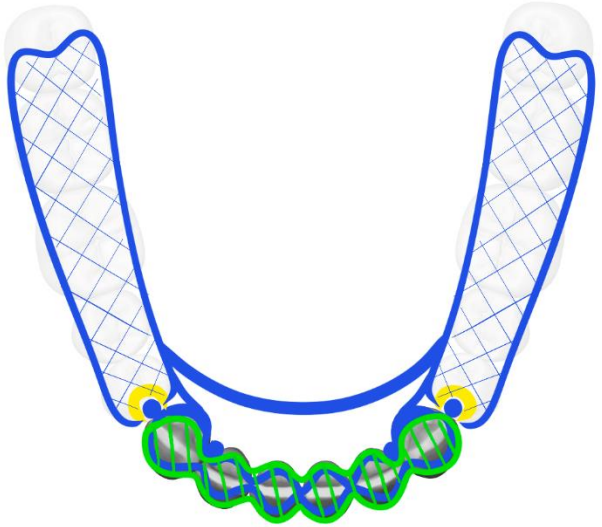
Retention:

- Rigid clasp retention: on teeth 33, 43
  - Roach C clasp
- Indirect retainer extension: 32, 42

8 acrylic denture teeth (47, 46, 45, 44, 34, 35, 36, 37)

Class 2A

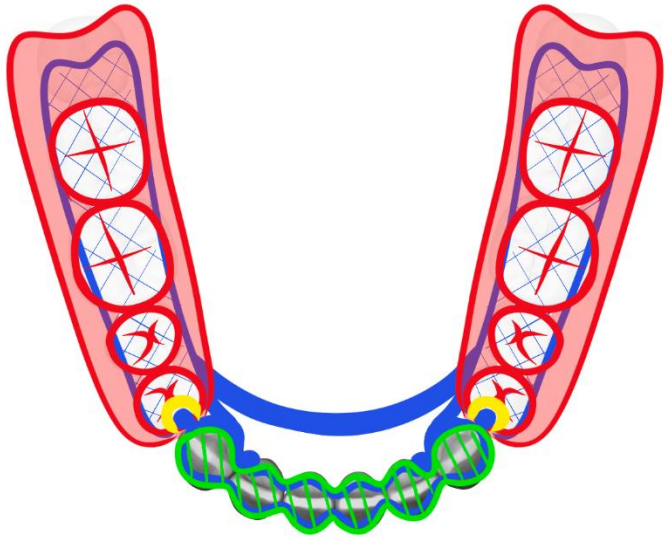




LOWER ARCH: Combined fixed-removable prosthesis with hidden attachments

Fixed part: 6-unit metal-ceramic splint (CoCr) fabricated using laser-sintering technology

- Veneered retainer crowns: 31, 32, 33, 41, 42, 43
- Milled shoulders and semi-precision attachment components (Preci-Vertix patrix): 33, 43
- Interlock between teeth 32-33 and 42-43



Removable part: removable partial denture with hidden attachments

Support: dentomucosal

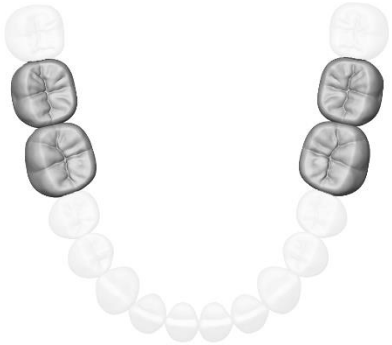
- Casted/Laser-sintered, reduced metal (CoCr) baseplate with a lingual bar

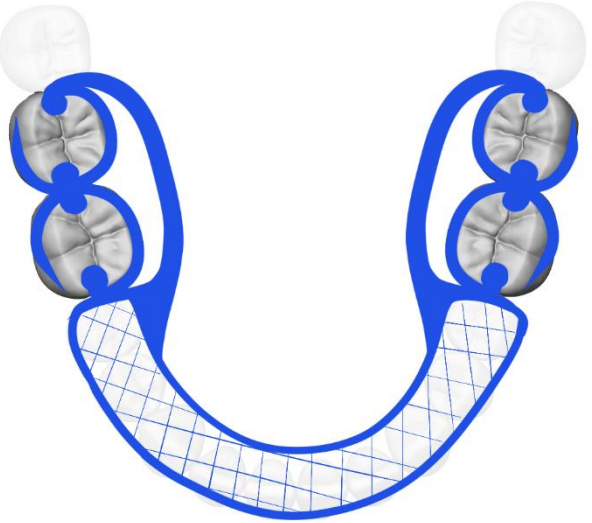
Retention: rigid with hidden attachments

- Preci-Vertix matrix components
- Indirect retainer extension in the milled shoulders of 33, 43

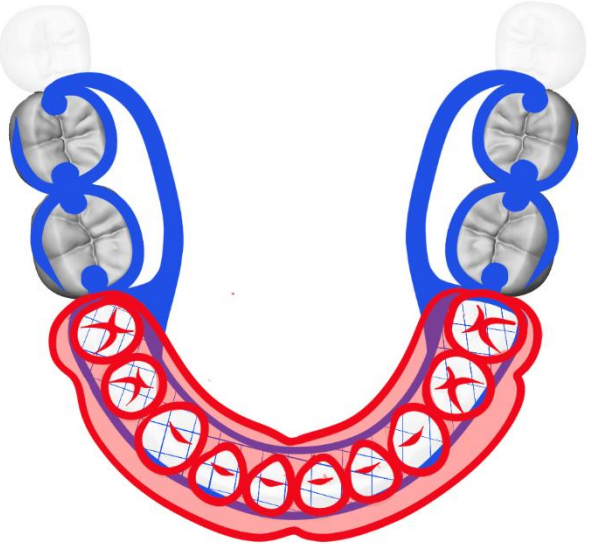
8 acrylic denture teeth (47, 46, 45, 44, 34, 35, 36, 37)

Class 2A





LOWER ARCH: Clasp-retained removable partial denture



Support: dentomucosal

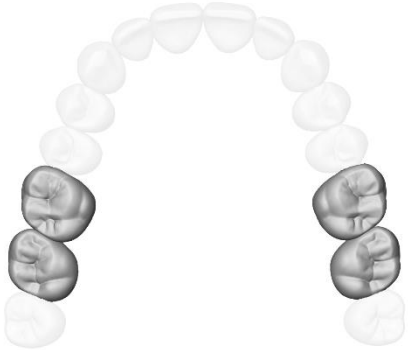
- Casted/Laser-sintered, reduced metal (CoCr) baseplate
- occlusal rests: 36, 37, 46, 47

Retention:

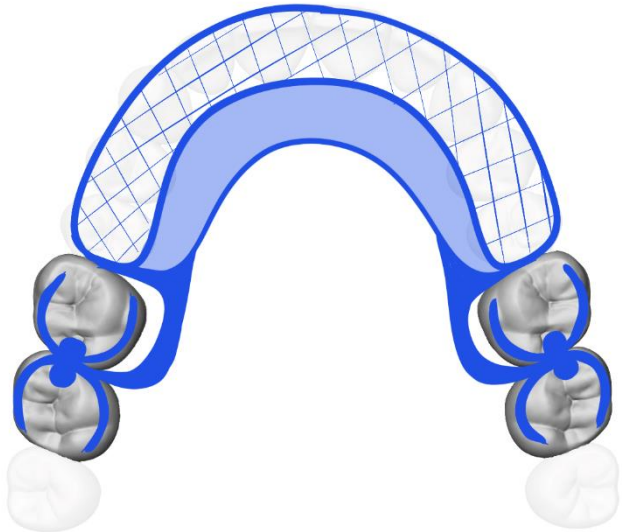
- Rigid clasp retention on teeth 36, 37, 46, 47
  - Ney-5 clasps

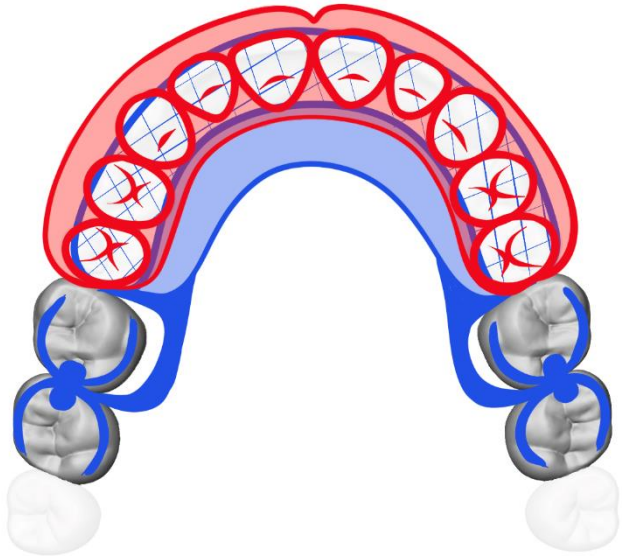
10 acrylic denture teeth (45-35)

Class 2A



LOWER ARCH: Clasp-retained removable partial denture





Support: dentomucosal

- Casted/Laser-sintered, metal (CoCr) baseplate, reduced in a horseshoe shape
- occlusal rests: 16, 17, 26, 27

Retention:

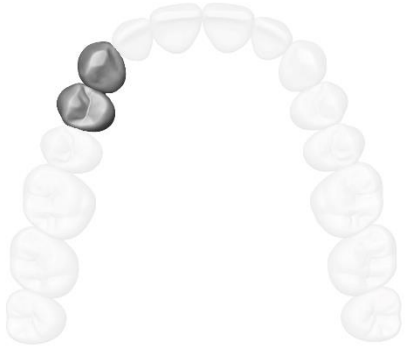
- Rigid clasp retention on teeth 36, 37, 46, 47
  - Bonwill clasps

10 acrylic denture teeth (45-35)

Class 2A/1

- There are 1 or 2 remaining teeth (subtotal edentulism), which are positioned “in one block”. Unfavourably directed tipping forces may occur (the prosthesis may sink in one direction).
- **Treatment plans:**
  - **A: Telescopic overdenture with a functionally extended baseplate**
  - **B: Clasp-retained removable partial denture**
  - **C: Combined fixed-removable prosthesis with rigid clasp retention, with the fabrication of surveyed/retainer crowns**
  - **D: Combined fixed-removable prosthesis with hidden attachments**
- **Support: dentomucosal/mucodental**
- **Retention: telescopes, rigid clasp, hidden attachments**

Class 2A/1





UPPER ARCH: Telescopic overdenture

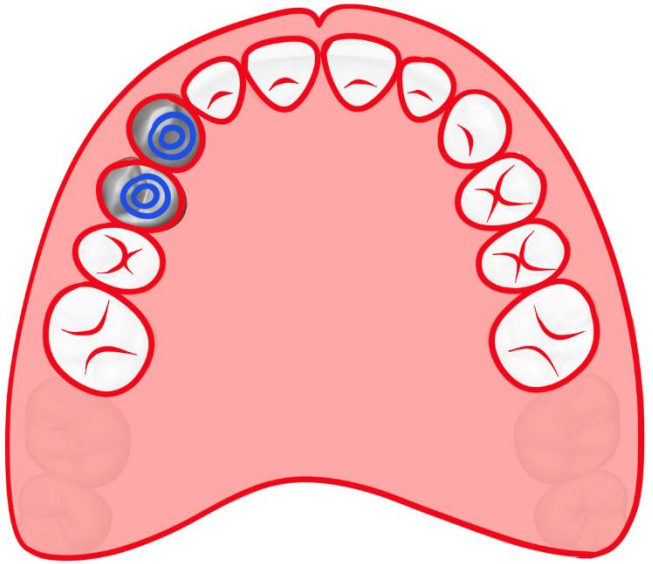
Support: mucodental

- Non-reduced acrylic baseplate

Retention: with a telescopic system

- Laser-sintered cylindroconical primary telescopes (CoCr): 13, 14
- Laser-sintered secondary telescope copings (CoCr): 13, 14

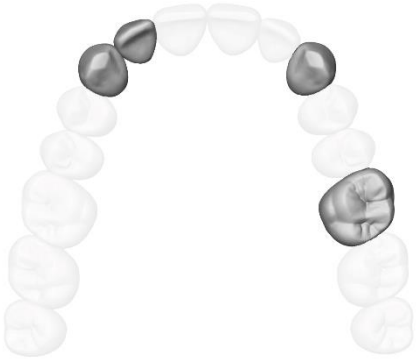
12 acrylic denture teeth (16-26)

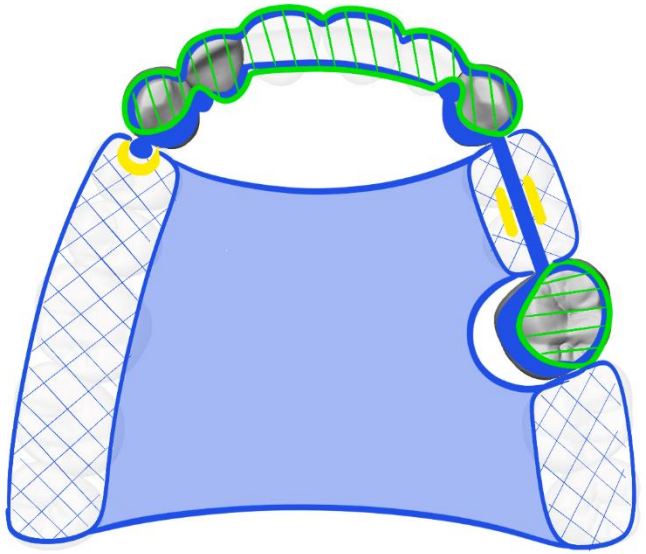


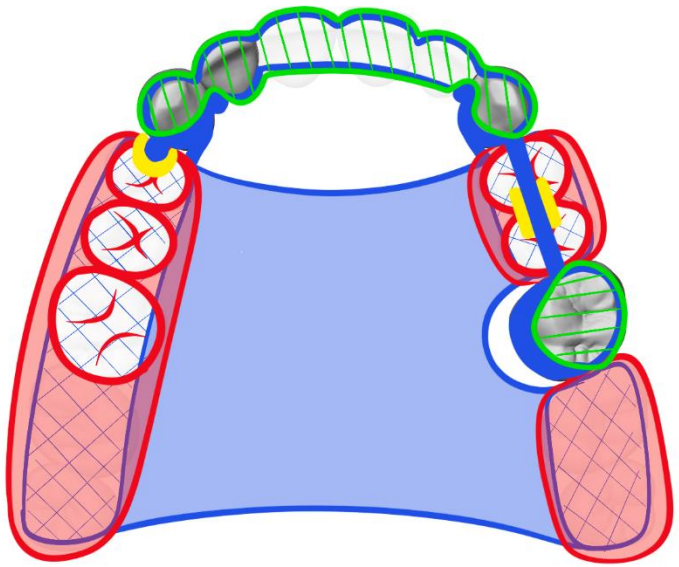
Class 2B

- Both distal-extension and bounded edentulous spaces are present. The sinking cannot be compensated for by the teeth alone; a removable partial denture must be fabricated.
- **Treatment plans:**
  - **A: Clasp-retained removable partial denture**
  - **B: Combined fixed-removable prosthesis with rigid clasp retention, with the fabrication of clasp-bearing crowns**
  - **C: Combined fixed-removable prosthesis with hidden attachments**
  - **D: Telescopic overdenture**
- **Support: dentomucosal (or mucodental)**
- **Retention: rigid clasp system, telescopes, hidden attachments**

Class 2B







UPPER ARCH: Combined fixed-removable prosthesis with hidden attachments

Fixed part: 7-unit metal-ceramic bridge (CoCr) fabricated using laser-sintering technology

- Veneered retainer crowns: 12, 13, 23, 26
- Veneered pontics: 11, 21, 22
- Semi-Precision attachment components: 13 (Preci-Vertix patrix), between 23-26 (Preci-Horix patrix)
- Interlock: between teeth 13-12
- Milled shoulders: 13, 23, 26

Removable part: removable partial denture with hidden attachments

Support: dentomucosal

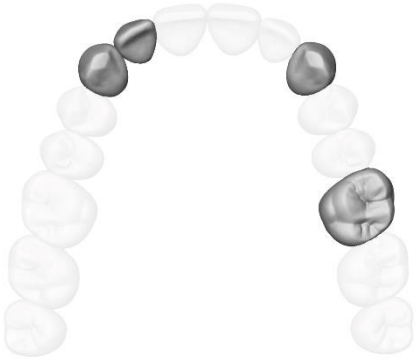
- Casted/Laser-sintered, metal (CoCr) baseplate, reduced in a butterfly shape

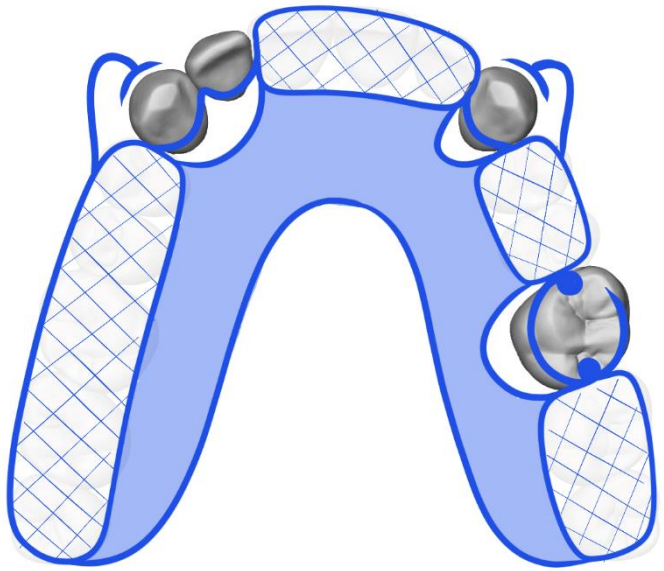
Retention: rigid with hidden attachments

- Preci-Vertix and Preci-Horix matrix components
- Indirect retainer extension in the milled shoulders of 13, 23, 26

5 acrylic denture teeth (16, 15, 14, 24, 25)

Class 2A





UPPER ARCH: Clasp-retained removable partial denture

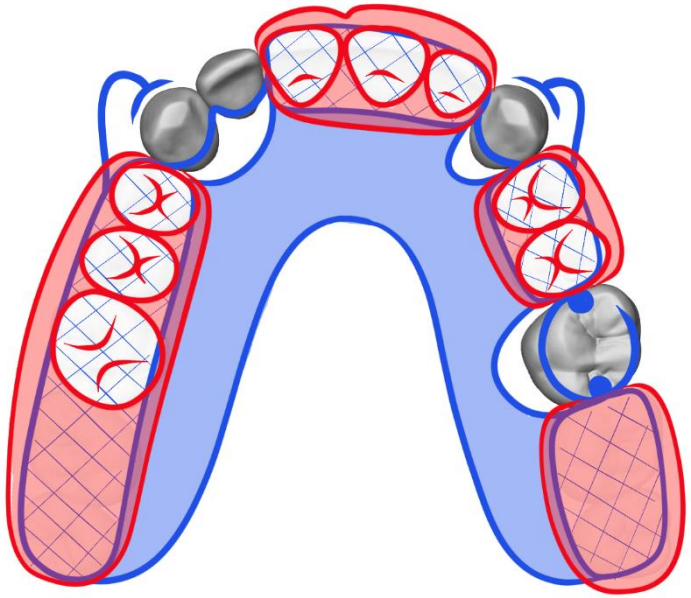
Support: dentomucosal

- Casted/Laser-sintered, metal (CoCr) baseplate, reduced in a horseshoe shape
- Occlusal rest on tooth 26

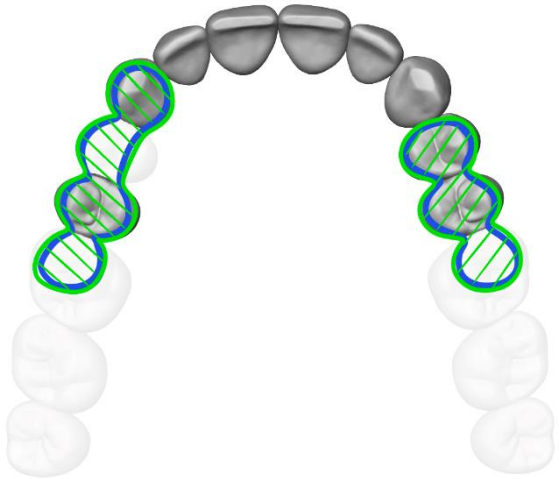
Retention:

- Rigid clasp retention: 13, 23, 26
  - Roach C clasp: 13, 23
  - Ney-5 clasp: 26
- Continuous clasp: 12

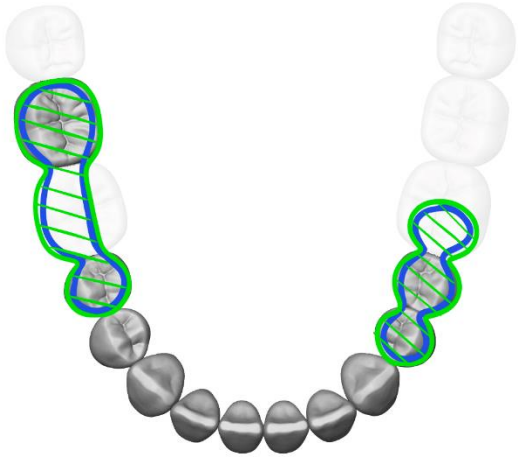
8 acrylic denture teeth (16, 15, 14, 11, 21, 22, 24, 25)











To provide a more functional prosthesis, we also aim to fabricate fixed prostheses in Class 2A and 2B cases. Whenever possible, the edentulous space is treated “according to Class 1B”.

Class 3

- There are two, maximum three remaining teeth (subtotal edentulism), which are positioned “not in one block”. The prosthesis may sink in two directions, i.e. it may rock/tilt.
- **Treatment plans:**
  - **A: Telescopic overdenture**
  - **B: Overdenture with hidden attachments (ball attachment on a metal post-and-core abutment)**
  - **C: Clasp-retained removable partial denture**
- **Support: mucodental, with a non-reduced baseplate**
- **Retention: telescopes, rigid clasp, ball retention**

Class 3





LOWER ARCH: Telescopic overdenture

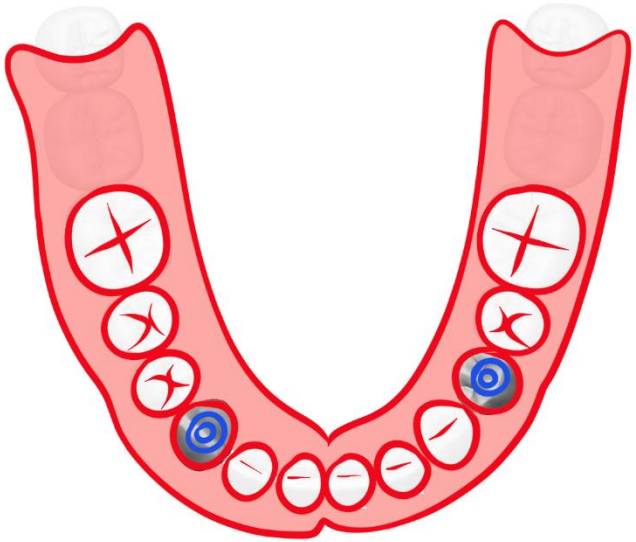
Support: mucodental

- Non-reduced acrylic baseplate

Retention: with a telescopic system

- Laser-sintered cylindroconical primary telescopes (CoCr): 34, 43
- Laser-sintered secondary telescope copings (CoCr): 34, 43

12 acrylic denture teeth (46-36)



Thank you for your attention!

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