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16 Surgical Methods and Sub Methods for Corticobasal® Implants

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IF® The Foundation of Knowledge

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Slide 1

Slide 2

The Foundation of Knowledge

16 Surgical Methods and Sub Methods for Implants in Cortical and Basal anchorage

Illustrated and commented
Version of IF Standard Lecture
No. 23-3

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The Foundation of Knowledge

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While the advice and information in this lecture are believed to be true and accurate at the time of preparation for publication, neither the authors nor the lecturer can accept any legal responsibility for any errors or omissions made in any part of this lecture - neither for the pictures, nor for the words and sentences used to explain. The material presented in this lecture is not intended to represent the only possible method or application appropriate for the medical situations discussed but rather is intended to present an approach, viewpoint, statement or opinion of the authors, which may be helpful to others who encounter similar clinical situations. The opinions expressed, suggestions made and advices given are those of the respective treatment provider or author of the lecture, and not necessarily those of the IF®. The IF® and the authors make no warranty, expressed or implied, with respect or any material contained therein.

The picture which is given to you by this lecture should not prevent you from making your own conclusion about the clinical situation and to act by using all your knowledge. We recommend that you take rather small steps to develop your own technique and that you observe them for some time before you decide to use them in general.

Not all cases shown in this lecture have been treated by the lecturer.

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Foreword

The following descriptions and illustrations represent an expanded and condensed version of the manufacturer's information and instructions for use for the following implant systems:
BCS®, Mythbreaker®, Corticobasal®, Strategic Implant®, GBC®, BECES®, BECES® N.
The manufacturers Dr. Ihde Dental AG, Simpladent GmbH, and Onewaybiomed GmbH, each based in Switzerland, commissioned the International Implant Foundation through a scientific cooperation agreement in 2012 to develop and update these and other illustrations and other technical information.

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The Foundation of Knowledge

In 2019, two comprehensive studies[1,2] were published on one-piece implants and, specifically, on polished screw implants for basal and cortical anchorage. Both studies show excellent results that far exceed those that can and have been achieved with conventional, osseointegrating implants.
In 2020, the International Implant Foundation (Munich) published a compilation of the most beneficial methods for using these implants[3]. Since 2019, these methods have become established worldwide among users of the aforementioned cortical and basal-anchored implants. These methods are demonstrated to practitioners by medical device consultants from the three aforementioned companies; they are also an integral part of training and on-site application support. They are the results of clinical research and practical application.
In 2024, a new, very comprehensive study[4] on cortical and basal-anchored implants was presented for the first time at an international congress. In terms of scope and significance, this study far exceeds any previous scientific contributions on dental implants, even by universities. This study was conducted at two centers in Europe and included 1,680 complete jaw implantations with more than 17,000 Strategic Implant® implants. The study was first published in 2025 with the release of a PPT presentation.

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The Foundation of Knowledge

All of the aforementioned studies demonstrate that the consistent application of the "16 methods and sub-methods" as presented in the following publication leads to excellent clinical results and lasting success.

The application of these methods has represented the state of the art in oral implantology since 2019.

Munich, June 29, 2025

Ihde

International Implant Foundation IF®
Prof. Dr. Antonina Ihde
Head of Dental Implants Faculty (since 2019)

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The Foundation of Knowledge

Literature for the Foreword

[1] Lazarov A. Immediate functional loading: Results for the concept of the Strategic Implant®. Ann Maxillofac Surg 2019;9:78-88.

[2] Dobrinin Oleg, Lazarov Alexander, Konstantinovic Vitomir S., Sipic Olga, Siljanovski Damir, Milicic Biljana Iommediate Functional Loading Concept with one-piece implants (BECES/BECES N/ BOI) in the mandible and in the maxilla. A multicenter retrospective study. J. Evolution Med. Dent. Sci./eISSN- 2278-4802, pISSN- 2278-4748/ Vol. 8/ Issue 05/ Feb. 04, 2019.

[3] Department of Evidence and Research of the International Implant Foundation IF®, Munich, Germany, Consensus Regarding 16 Recognized and Clinically Proven Methods and Sub Methods for Placing Corticobasal® Oral Implants. Ann Maxillofac Surg 2020;10:457-62.

[4] Ihde S., Sipic O., Ihde A. A Prospective Long-Term Study on the Strategic Implant® - This Study Changed the Dental World and the „Gold Standard" in Oral Implantology. Experience-Based and Evidence-Oriented Corticobasal® Implantology (EECI), Vol. 19, No. 1, International Implant Foundation Publishing, 2025.

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General Methods

Method No	Description
1a General	Multi-directional implant placement, with the implants being placed under angle to each other, followed by ▪ either parallelization of the abutment heads through bending of vertical implant shafts, or ▪ parallelization through cemented angulation adapters, or ▪ parallelizing through grinding the abutments in the mouth, or ▪ utilizing screw connection (MU)
1b General	Placement of implants in **Strategic Position** and adding **stabilizing implants** in other parts of the jawbone
1c General	Anchorage of implants in the 2nd or 3rd cortical, independent of the "alveolar bone". Preferred places of anchorage are resorption-stable corticals.

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The Foundation of Knowledge

Method No	Description
1d General	Placement of Strategic Implant® in cases with profound and active periodontal involvement. Under protection of strong topical disinfection agents, the teeth and subsequently the periodontally involved soft tissues are removed. Strategic Implant® are placed instantly and they are then splinted by a rigid prosthetic construction.
1e General	Spongious and alveolar bone areas are avoided for anchorage. Achieving "osseointegration" is not the primary aim of implant placement.
1f General	Fixation of polished implant bodies made from implantable material with the aim of achieving mechanical anchorage in cortical bone areas of the maxillo-facial skeleton. Subsequent splinting by the prosthetic construction in an immediate loading protocol.

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Method No	Description
1g General	Creating anti-rotation features for an implant by bending intra-osseous parts of the shaft of the implant.
1h General	Achieving primary stability by vertical condensation of the spongy bone by wide body BCS®.

Wide body = big volume of implant material in the thread

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The Foundation of Knowledge

Method No	
1k Maxillo-facial application	Engaging screwable Corticobasal® implants into transplanted bone areas & engaging some of the implants in native bone to increase the polygon and create some cross-arch stabilization

Slide 12

The Foundation of Knowledge

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The Foundation of Knowledge

Method No	
1k Maxillo-facial application	

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Regional Methods

Regional methods will be applied in their specific ways in specific regions of the jawbones

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Stable vs. Unstable Corticals

Example of unstable corticals:
- Floor of the maxillary sinus, area 4 – 6
- Lamina cribrosa after tooth extraction

Examples of stable corticals:
- Floor of the nose
- Fusion zone between distal maxilla / pterygoid process

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What Makes a (Basically) Stable Cortical Become an Unstable Cortical?

- Internal resorption (changes in internal morphology)
- Osteoporosis
- Changes in outer morphology (e.g. formation of exostoses)

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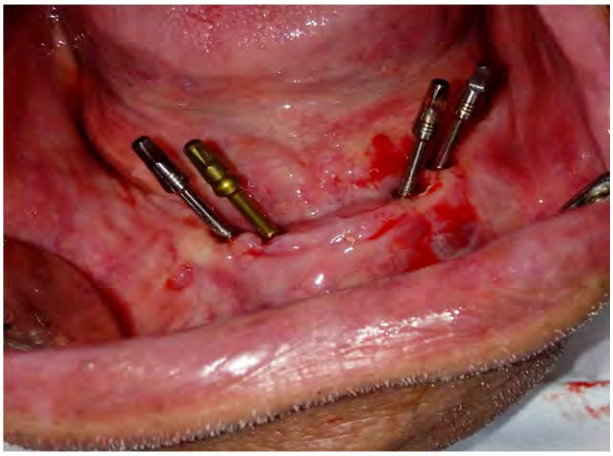
Method 2

The Foundation of Knowledge

Placement of implants between the mental nerves (in edentulous mandibles), with or without necessity for anchorage in the 2nd (basal) cortical of the mandible. This positioning has 3 advantages:

- Threads are in highly mineralized bone
- Mental nerve can be avoided
- Span to the heads of distal implants is reduced



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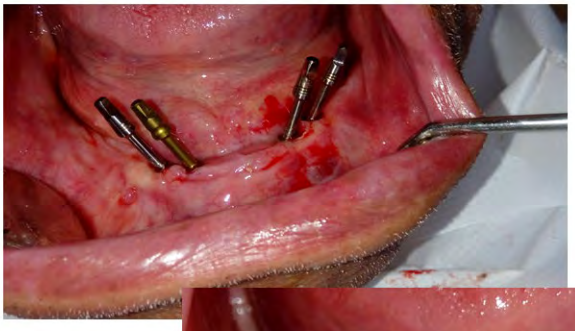
Method 2



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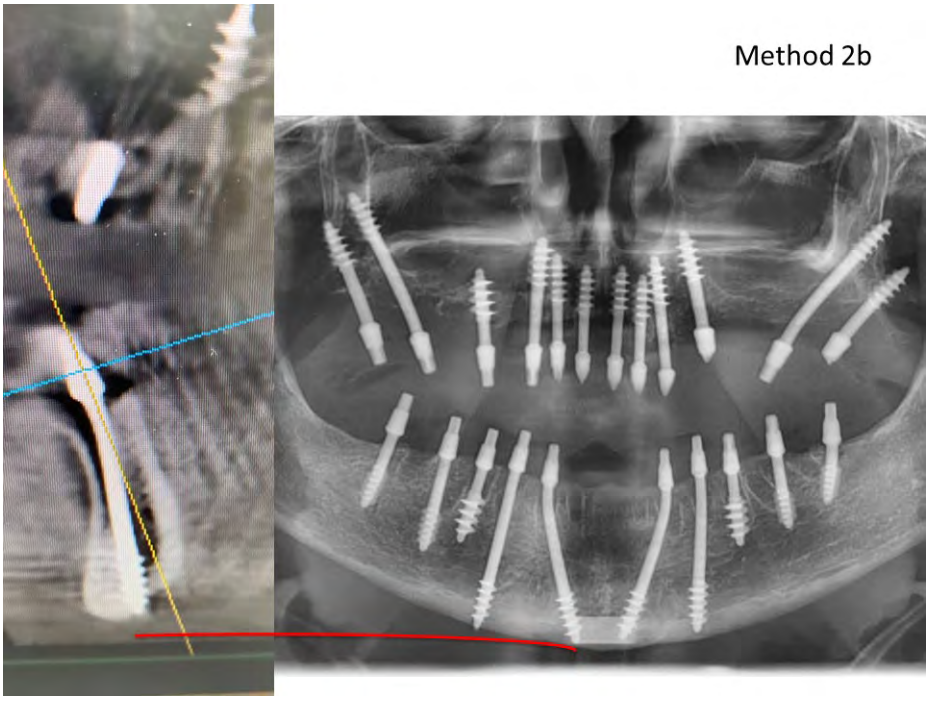

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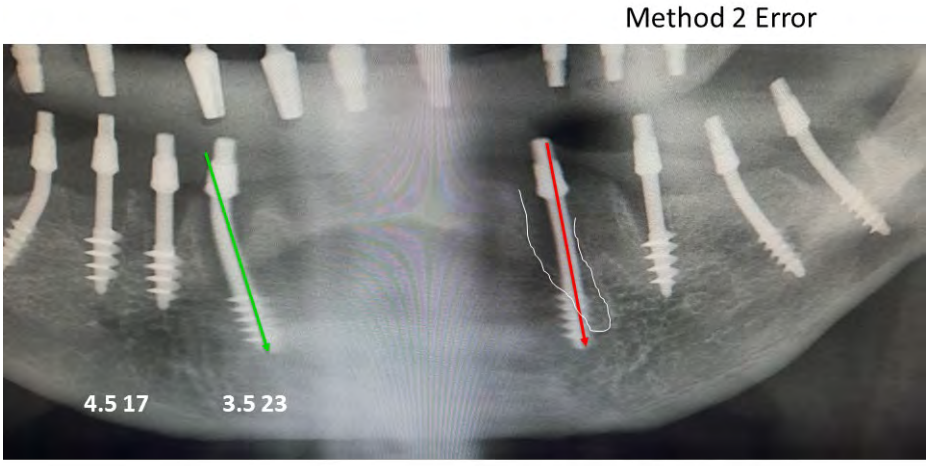

Implant 33 shows distal inclincation **although it was placed correctly mesally out of the extraction socket of the canine**

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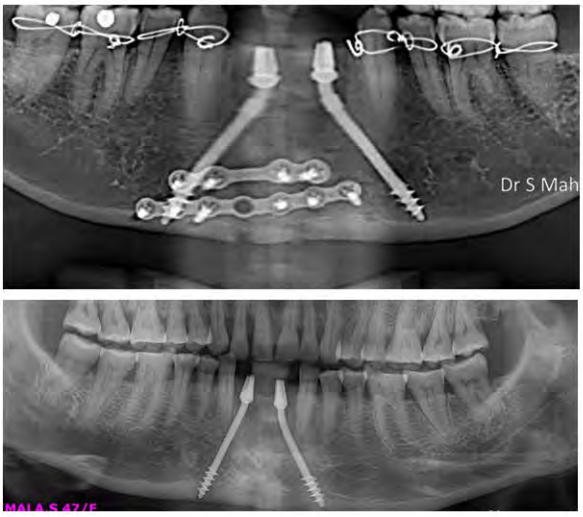
Method 2c



- Implants are placed in distal direction
- Engagement into basal cortical is recommended if the mineralisation of the bone is low
- Indicated for segments 2-2 in lower jaw

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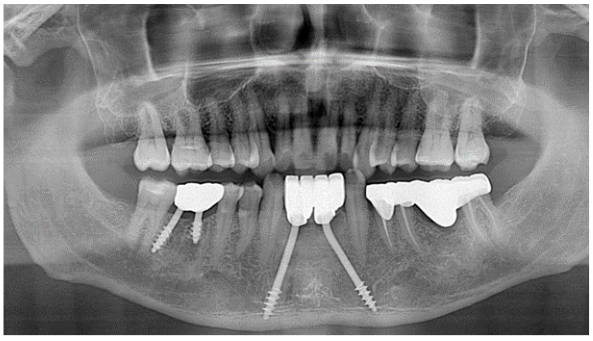
Method 2c



- Implants are placed in distal direction
- Engagement into basal cortical is recommended if the mineralisation of the bone is low
- Indicated for segments 2-2 in lower jaw

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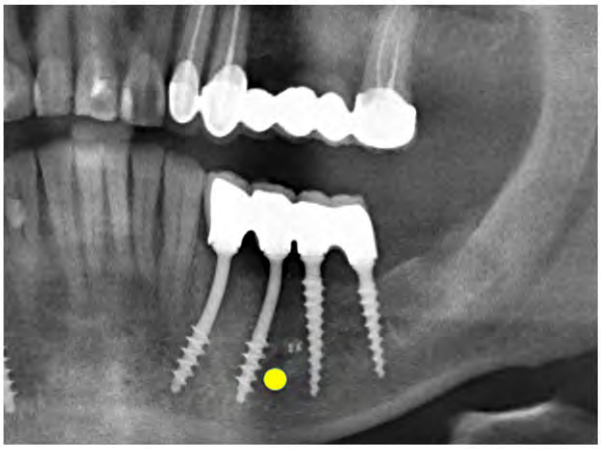
Method 3

Anterior anchorage of a segment bridge with two long Strategic Implant®, placed in the space (slot) between the mental nerve and the root of the lower canine



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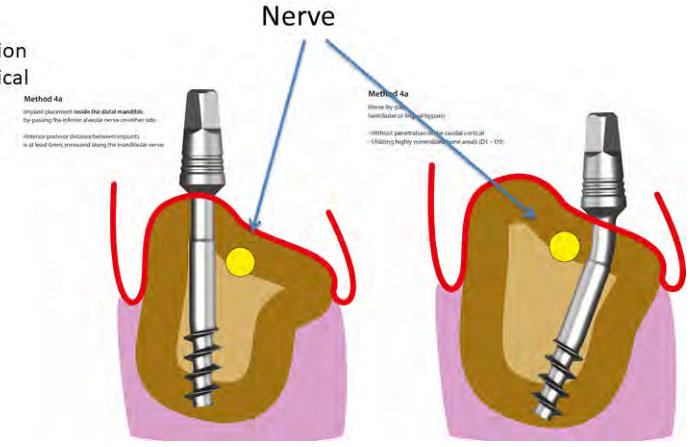
Method 4 a

Nerve-by-pass (vestibular or lingual bypass)

- Without penetration of the caudal cortical
- Utilizing highly mineralized bone areas (D1 – D3)



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Method 4 a

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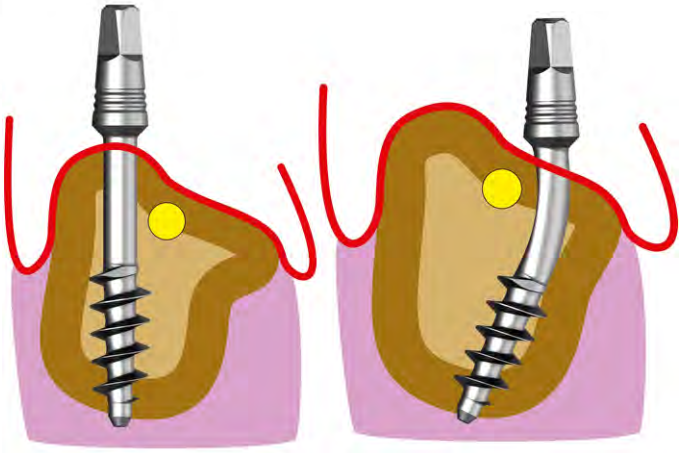
Method 4 b

Nerve-by-pass (vestibular or lingual bypass)

– With penetration of the caudal cortical and anchorage in the caudal cortical



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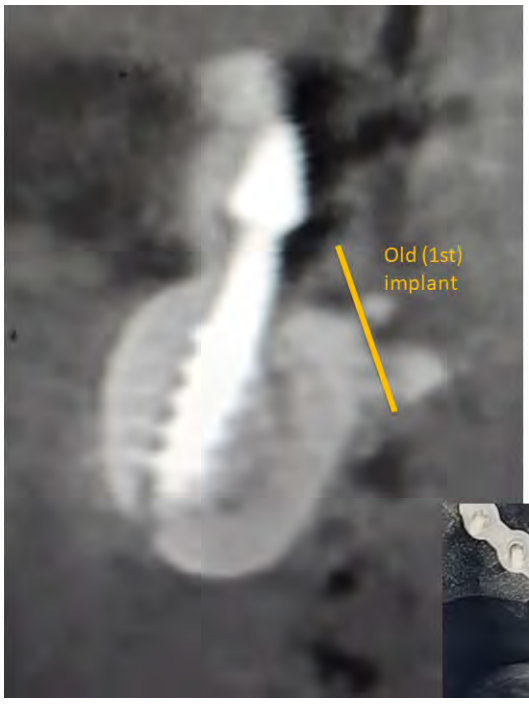

Method 4 b Mistake

After failure of an IFM 5s implant (yellow line) the treatment provider decided to place into the same (1st-cortical) position an IFM 4b implant. In oder to do this the treatment provider had to penetrate the 2nd cortical. Mistakenly the treatment provider did not close this hole by anchouring the imlpant there, but he left this vertical canal open.

Along the open bone wound the infection wqandered south and caused in einfection which led to the fracture of the mandible.

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Control 03.06.2025

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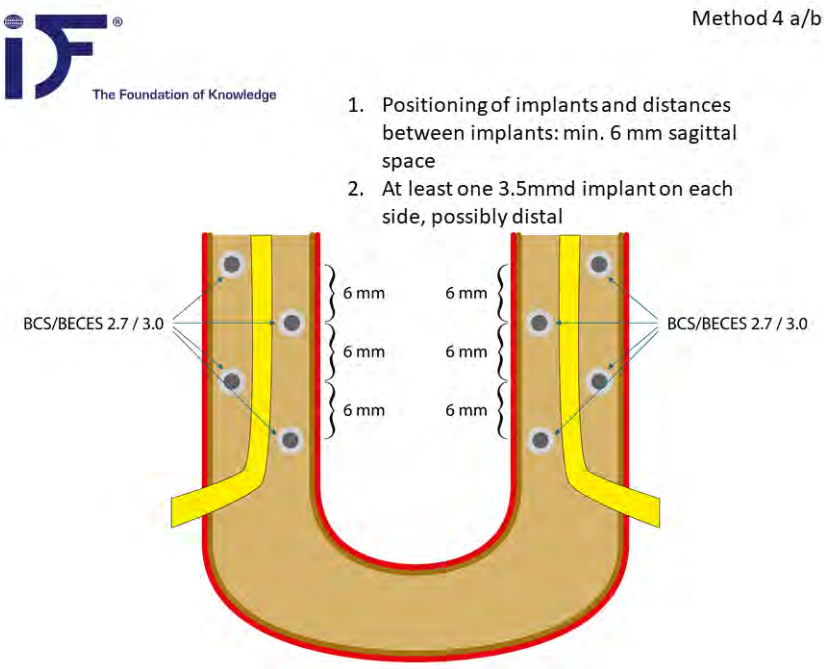

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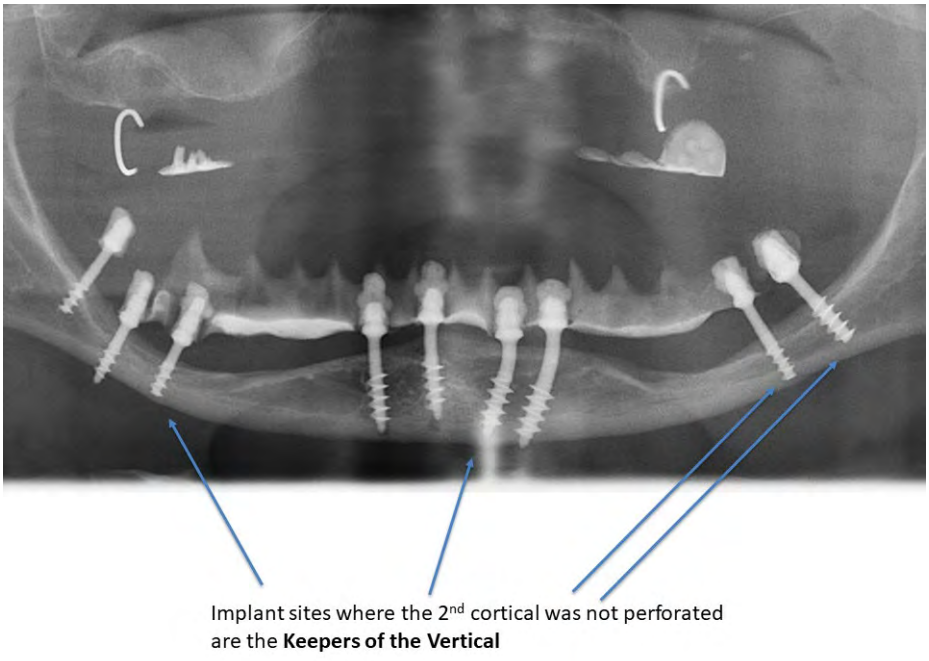

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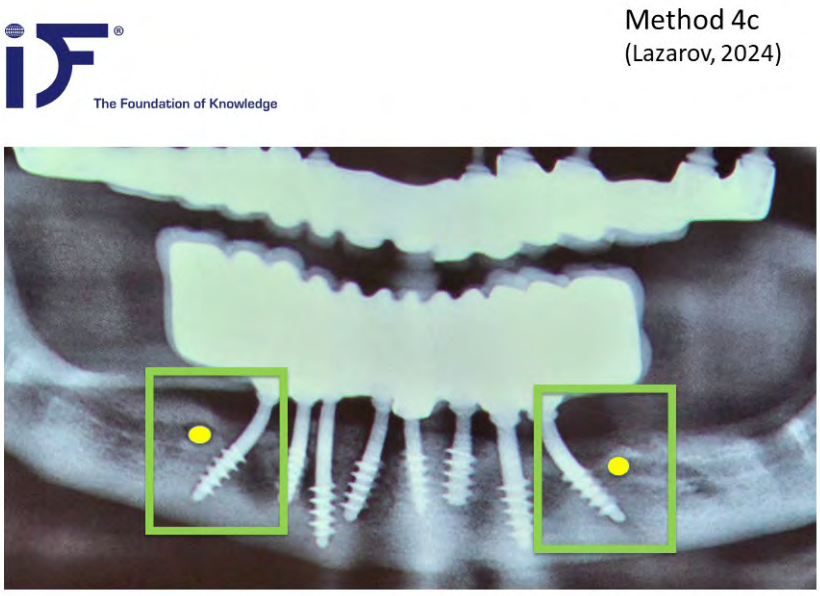

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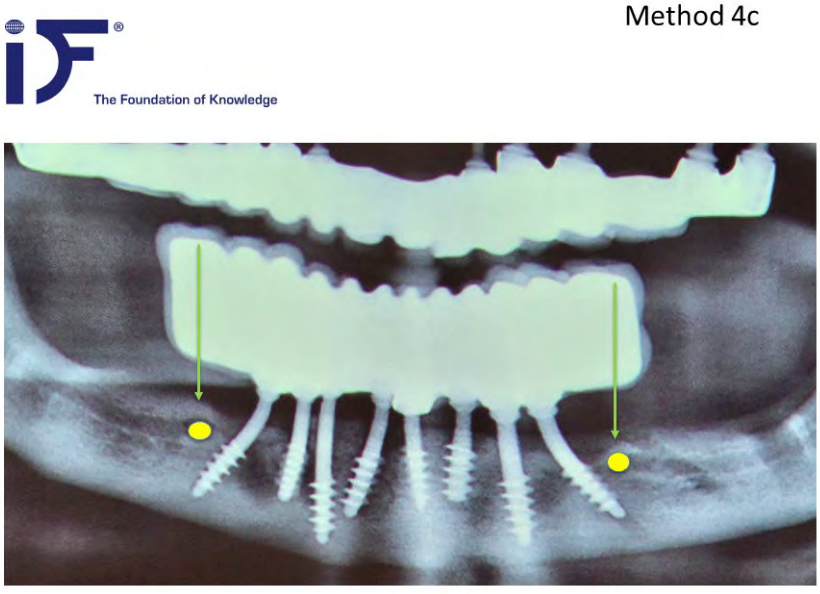

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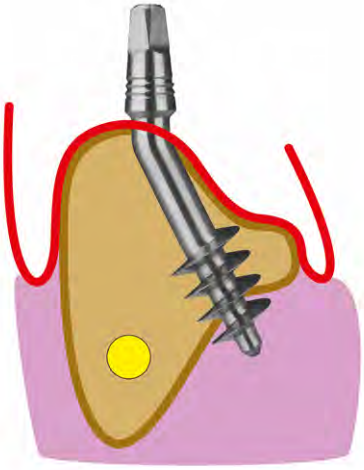
Method 5a

Lingual cortical engagement in the distal mandible



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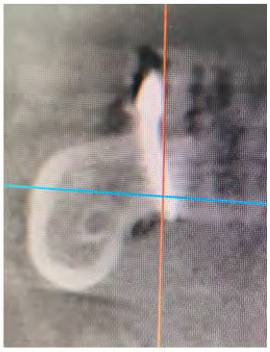
Method 5a



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Method 5a

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Method 5a

Lingual and vestibular cortical engagement are used for segment constructions in combination.

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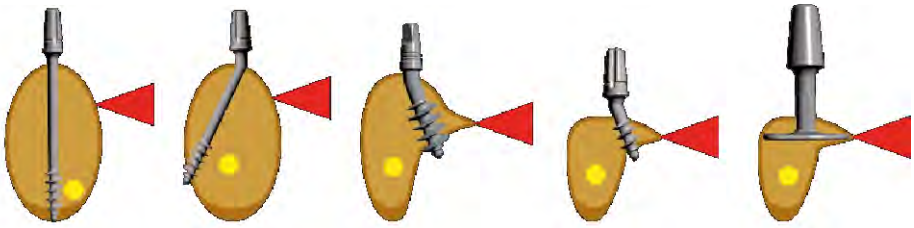
Methods 4 & 5 In Overview



4 5b 5a 5a BOI

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Method 5a Risks, Mistakes and Problems to be Solved

Risks & Complications:

- Inocculation of infected bone material through the drill into the submandibular space
- Morphological change of the area of the lingual undercut with subsequent exposing of the thread of the implant (may be shortened or implant must be removed)

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Method 5a. WRONG/RISKY

Lingual cortical engagement is not allowed in the inter-foraminal region due to the risk of creating a massive bleeding.

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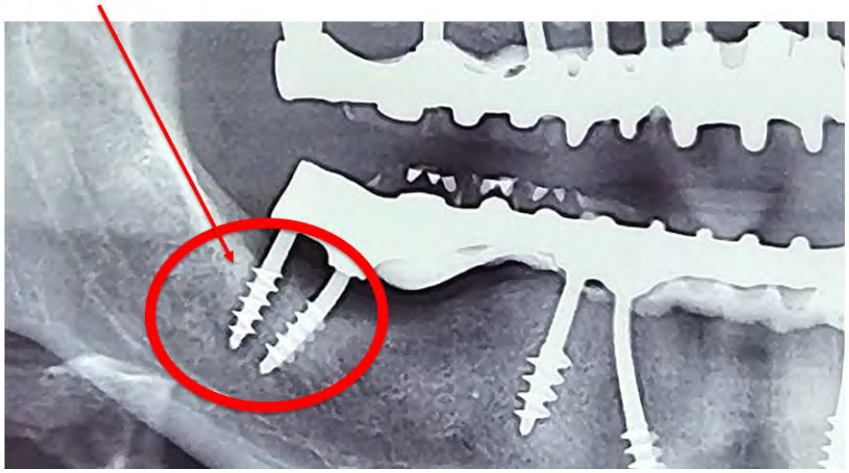
Method 5a. WRONG/RISKY

Distal implant not placed in distal direction



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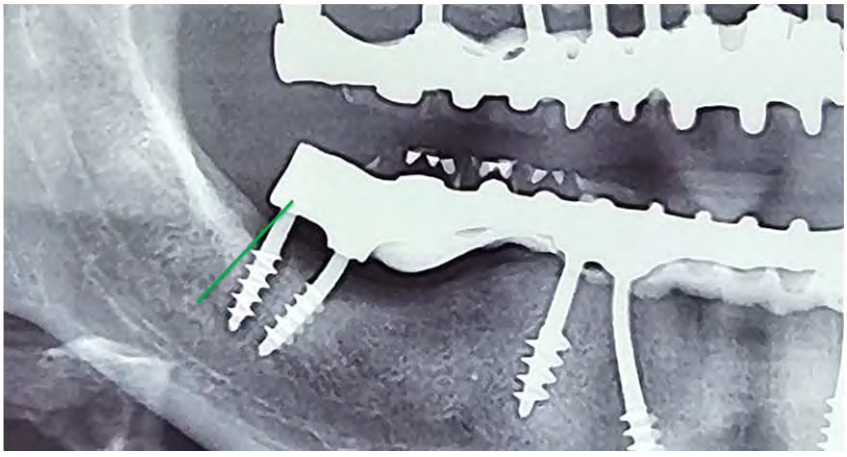
Method 5a. WRONG/RISKY

Distal implant not placed in distal direction



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Method 5b

Vestibular cortical engagement in the distal mandible

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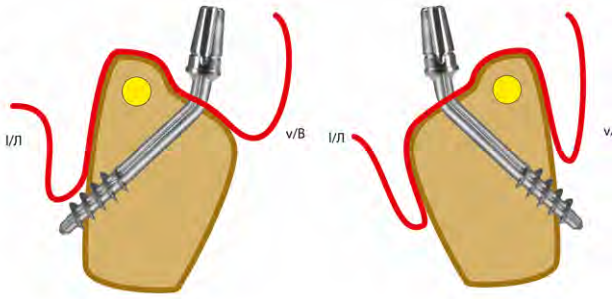
Method 5c

Vestibular or lingual cortical engagement in the distal mandible, with the implant running below the mandibular nerve



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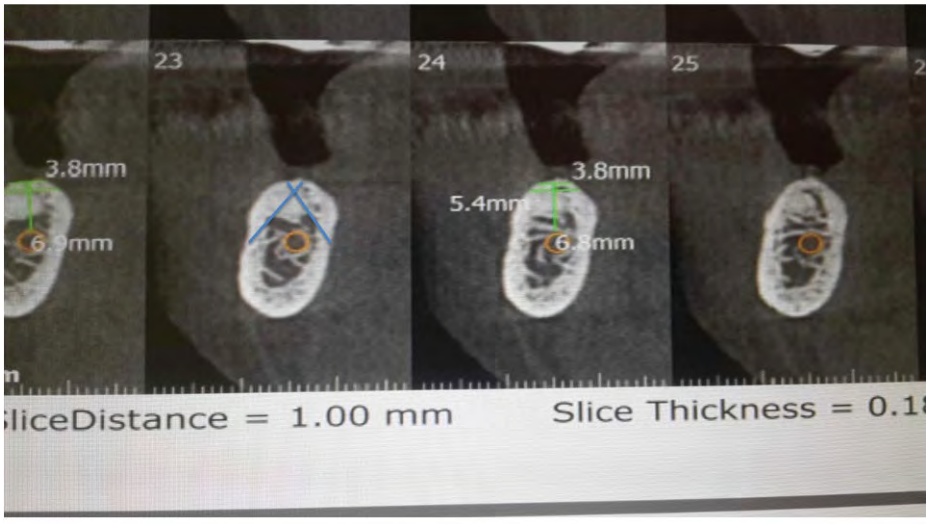

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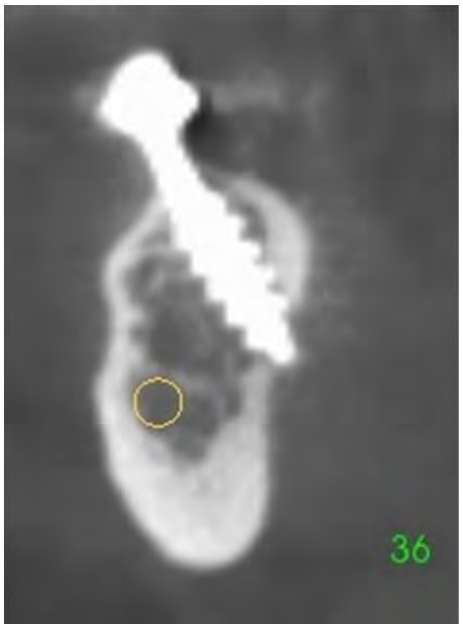
Method 5a



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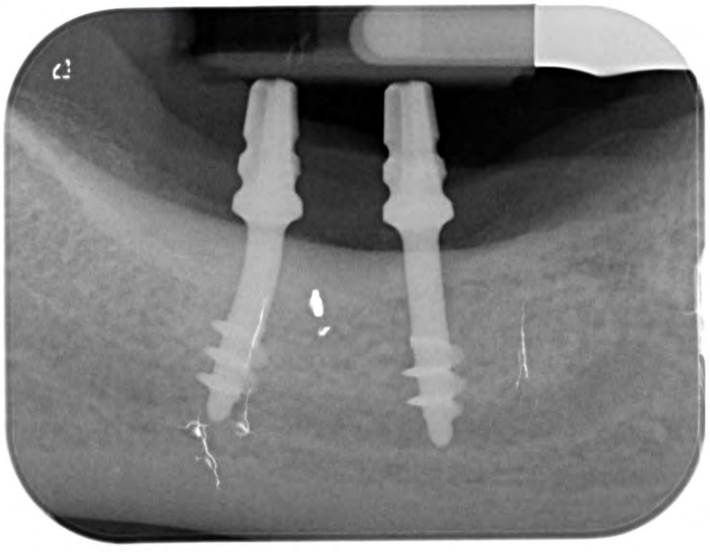
The Foundation of Knowledge

Method 5a



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Method 5a

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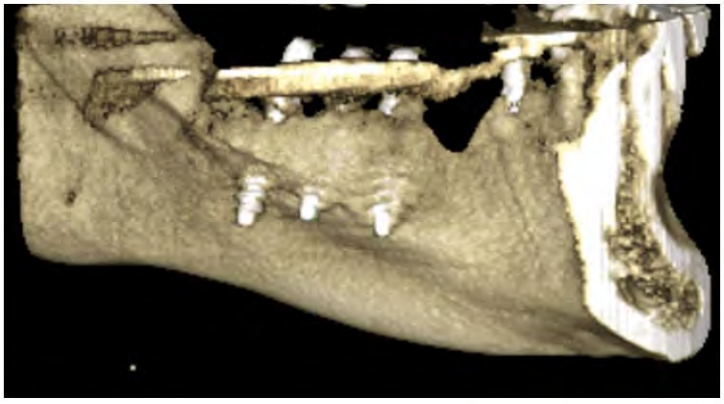
View from lingual on three implants placed according to IF® Method 5a. Correct penetration of the lingual cortical of the mandible.



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Method 6
Horizontal, Bicortical Anchorage

Placement of wide diameter BCS® using palatal / lingual and vestibular corticals for anchorage, without using a 2nd cortical in vertical direction

Permanent Corticals

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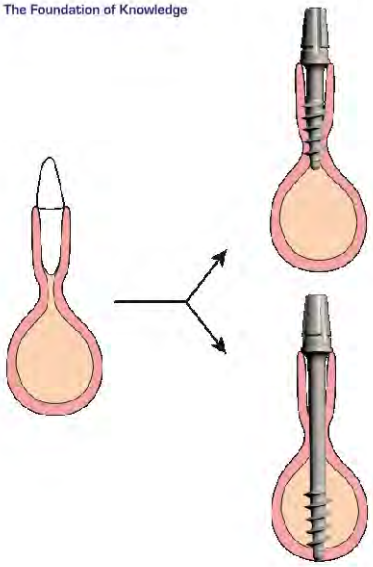
Methods 6
Horizontal, Bicortical Anchorage
Vs. 2nd Cortical Anchorage



Method 6

Method 2 (b)

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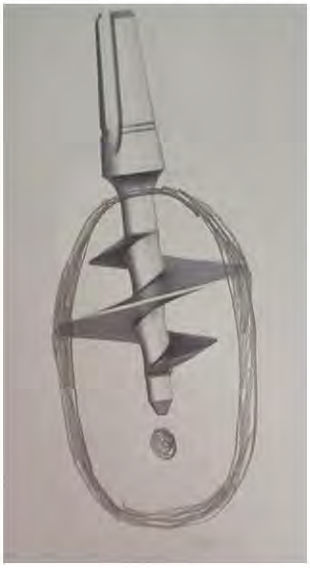
Method 6
Horizontal, Bicortical Anchorage

Placement of wide diameter BCS® using the lingual and vestibular cortical for anchorage, without using a 2nd cortical in vertical direction

Permanent Corticals



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Method 7 a

Placement of the apical thread of the implants **into the cortical floor** of the nose for anchorage

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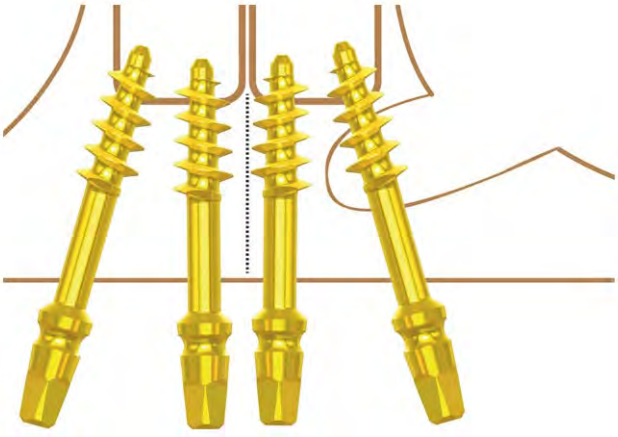
Method 7 a

Placement of the apical thread of the implants into the cortical floor of the nose for anchorage



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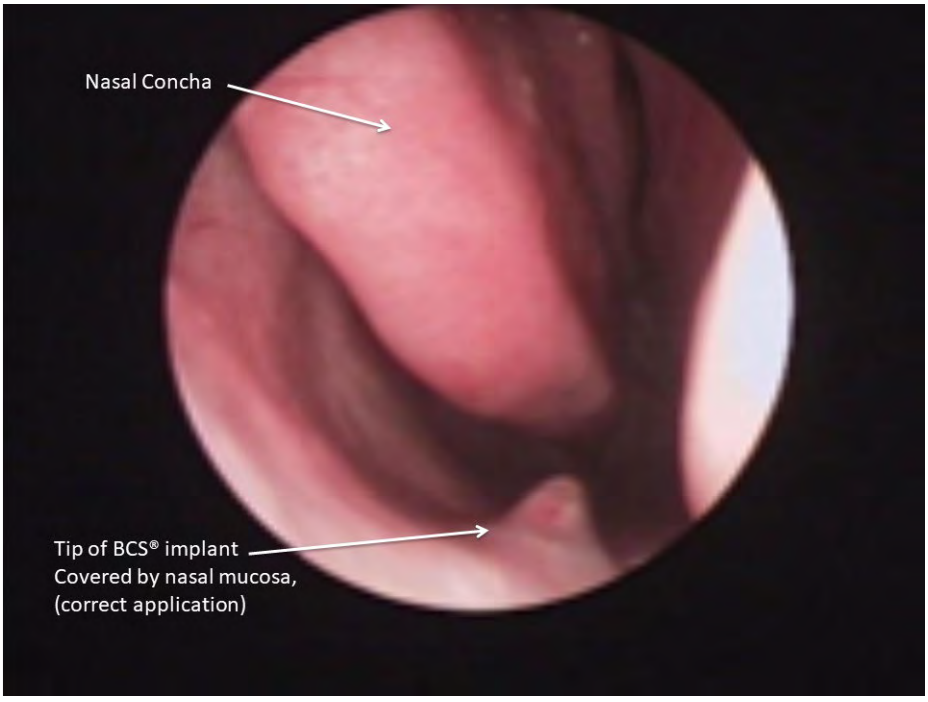

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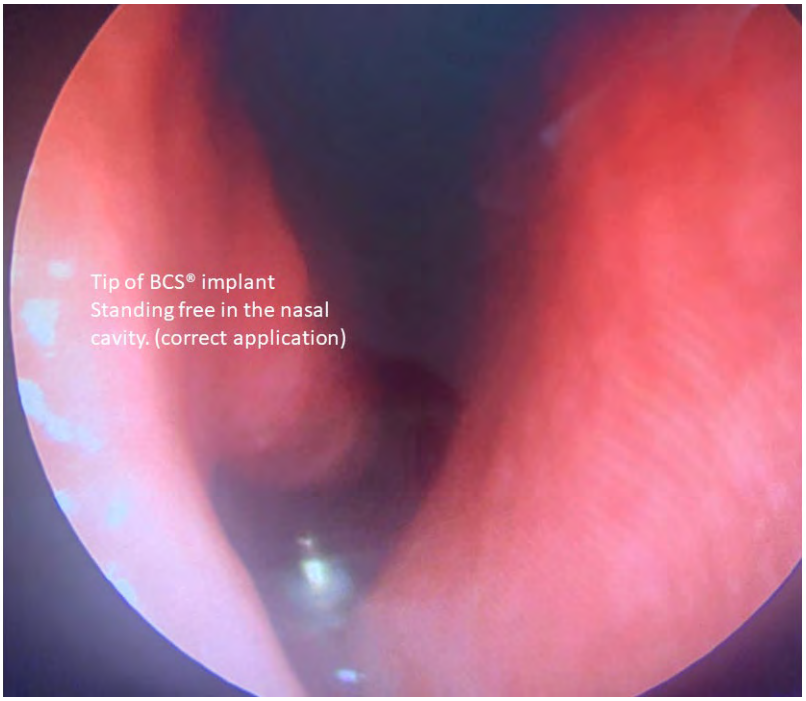

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Method 7 a

Treatment Example:

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Method 7 a

Treatment Example:

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Method 7b

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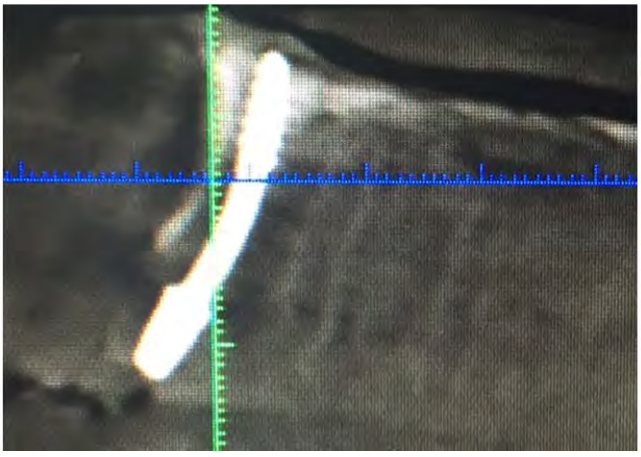
Palatal insertion of implants, directly into the floor of the nose, by-passing the alveolar bone of the maxilla.

Method 7b and 13 can be used only for polished implants (e.g. BCS®) without any possibility of mechanic retention.



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Method 7b

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Bone shows low mineralization however 1st ad 2nd cortical are separated

Due to strong atrophy, 1st and 2nd cortical are fused

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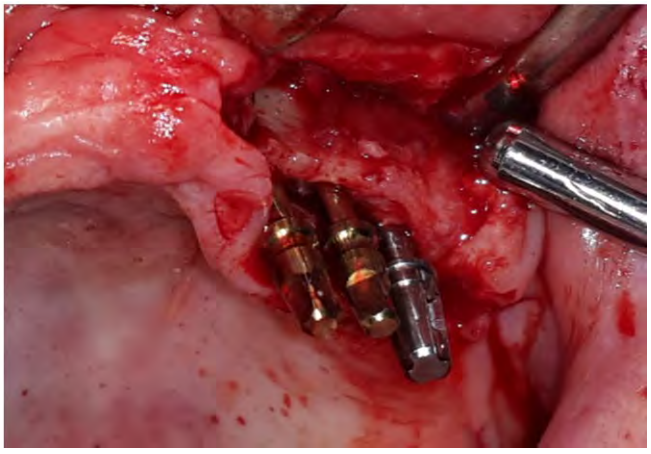
Method 7b

Palatal insertion of implants, directly into the floor of the nose, by-passing the alveolar bone of the maxilla



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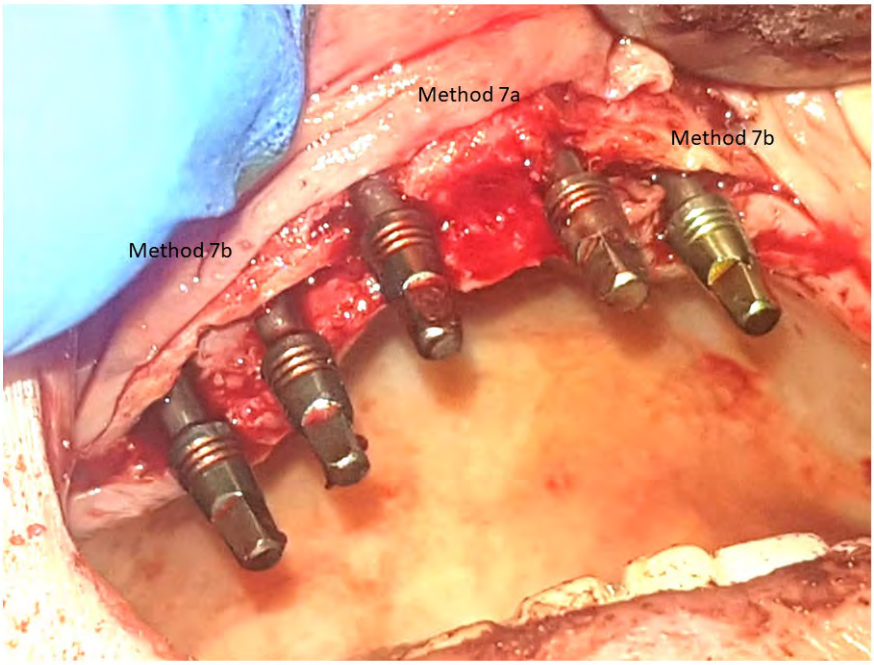
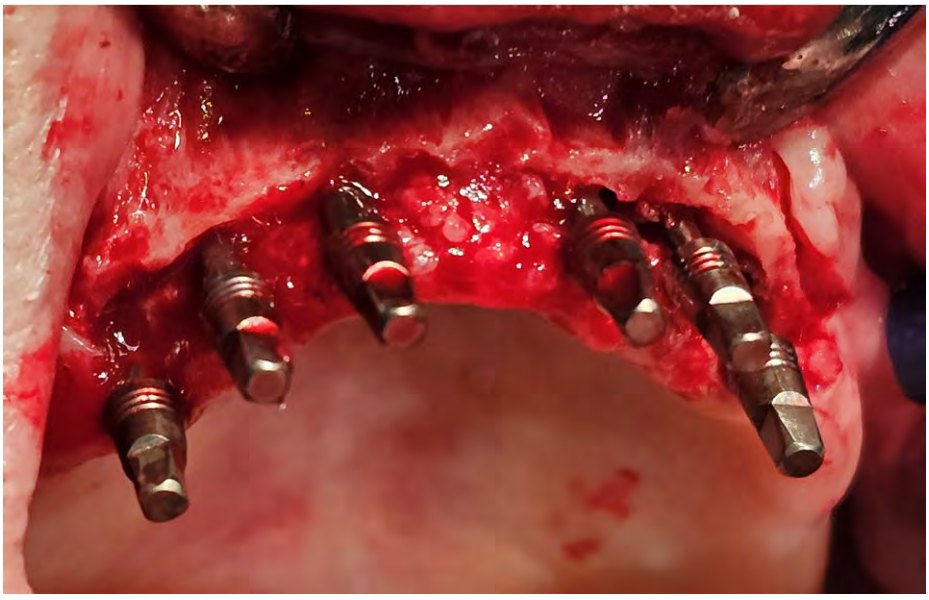


Slide 61

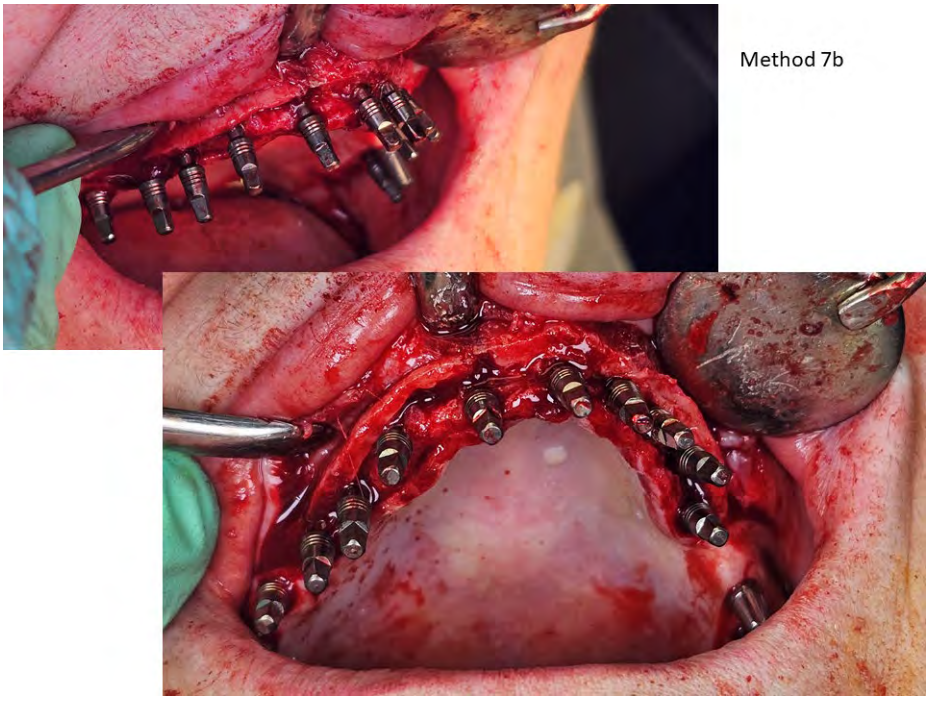
Method 7b



Slide 62

Method 7b

Slide 63



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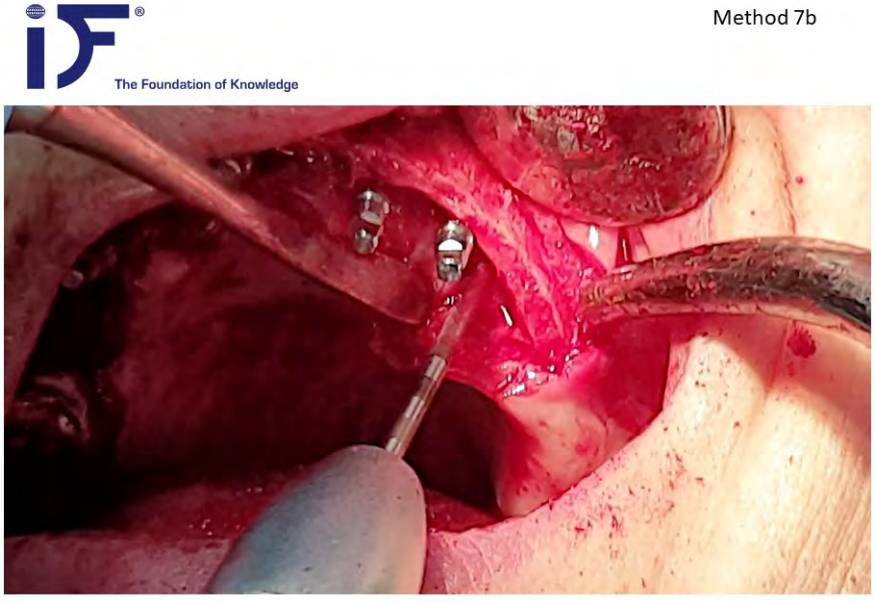

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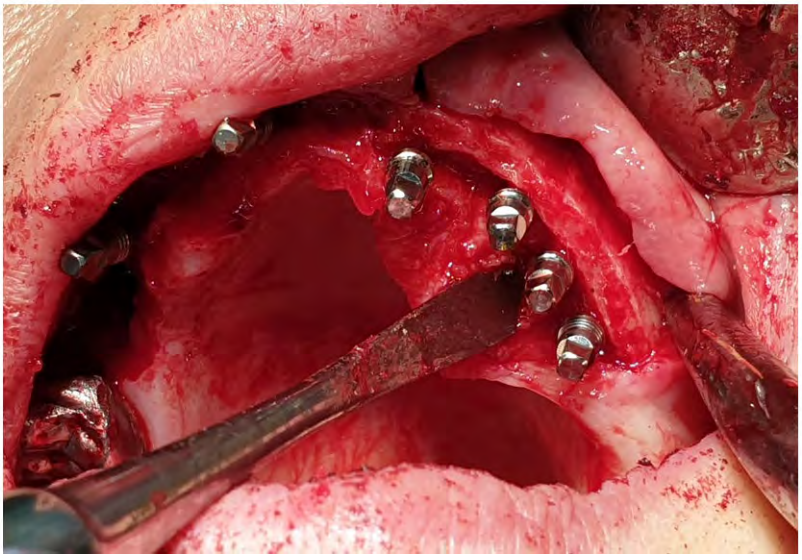
The Foundation of Knowledge

Method 7b



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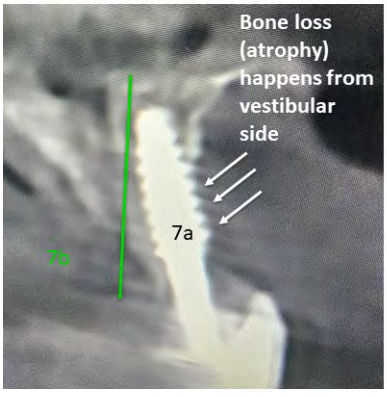
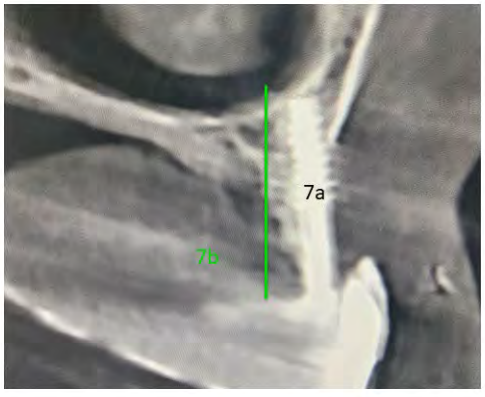
The Foundation of Knowledge

Methods 7a vs. 7b
(If in doubt, use 7b instead of 7a)





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The Foundation of Knowledge

Method 7c

Anchorage in the horizontal part of the palate. The implant is supported bu the crestal part of the alveolar crest.

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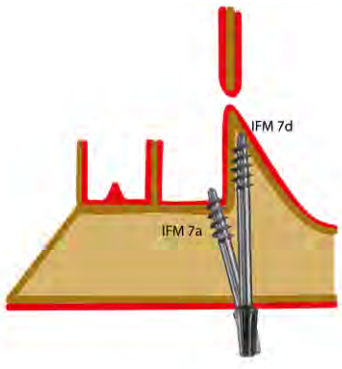
The Foundation of Knowledge

Method 7d



While in Method 7a, the floor of the nose is used for anchorage, in Method 7d, we use the naso-maxillary buttress: the implant is anchored between the lateral wall and the nose and the medial wall of the maxillary sinus.
The implant may penetrate into the airway, or the maxillary sinus, or both.

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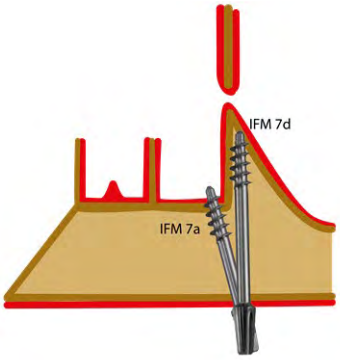
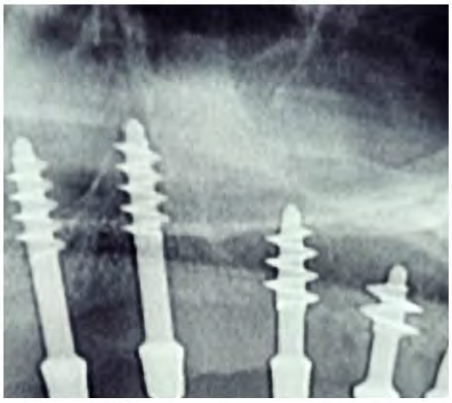
Method 7d





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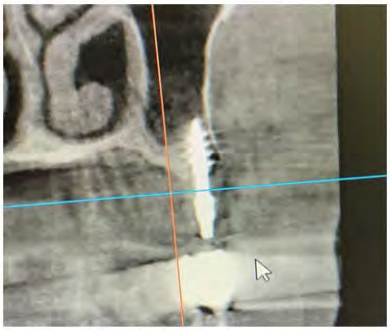
The Foundation of Knowledge

Methods 8

Placement of the apical thread of the implants into the **cortical floor of the maxillary sinus** for anchorage



Utilization of **intra-sinusal buttresses** for multi-sided cortical anchorage

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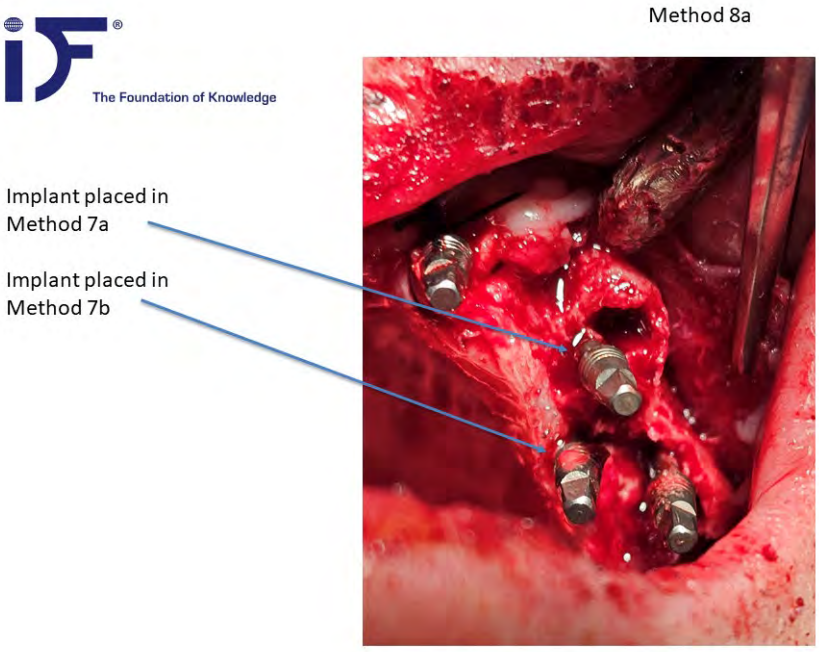
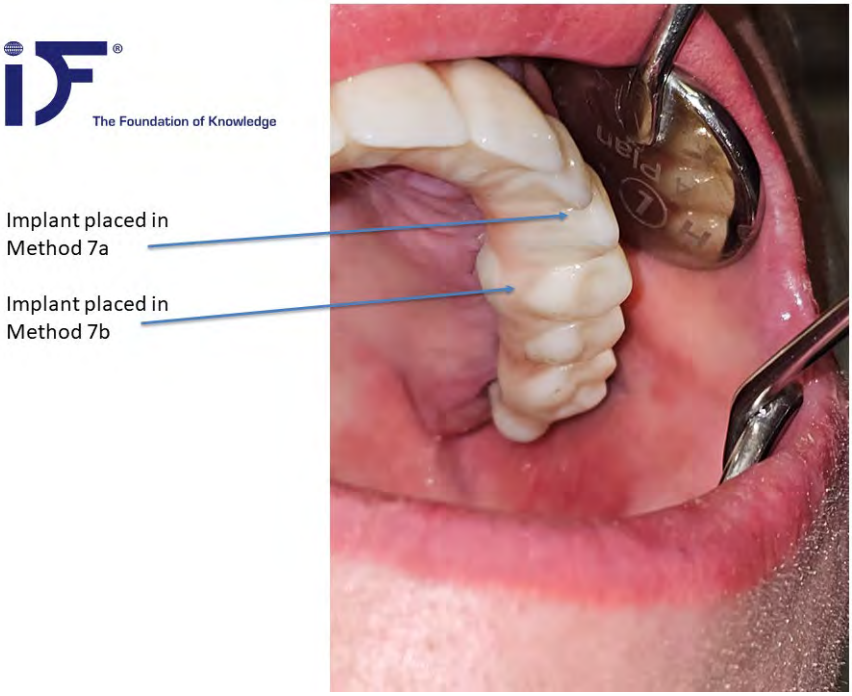


Slide 72



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The Foundation of Knowledge

If the membrane is perforated by the drill, blood will flow into the maxillary sinus and under the membrane. Subsequently new woven bone formation can be expected inside the maxillary sinus.

Method 8a

2021

2019

2017

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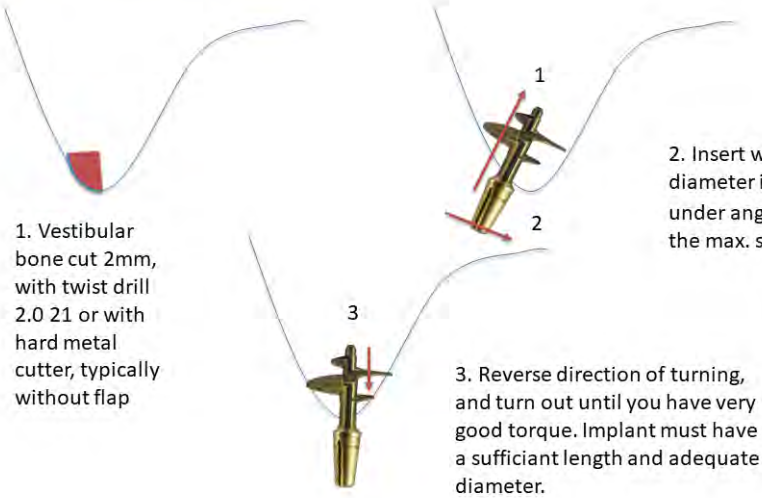
The Foundation of Knowledge

Method 8c



1. Vestibular bone cut 2mm, with twist drill 2.0 21 or with hard metal cutter, typically without flap

2. Insert wide diameter implant under angle **into** the max. sinus.

3. Reverse direction of turning, and turn out until you have very good torque. Implant must have a sufficiant length and adequate diameter.

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Method 9

The Foundation of Knowledge

Implant anchorage into the floor of the nose, passing through the alveolar bone on the palatal side of the root of the canine

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Method 9

The Foundation of Knowledge

Contraindications for applying Method 9:

- Root canal treated canine
- Frontal group shows caries
- Frontal group shows perio involvement

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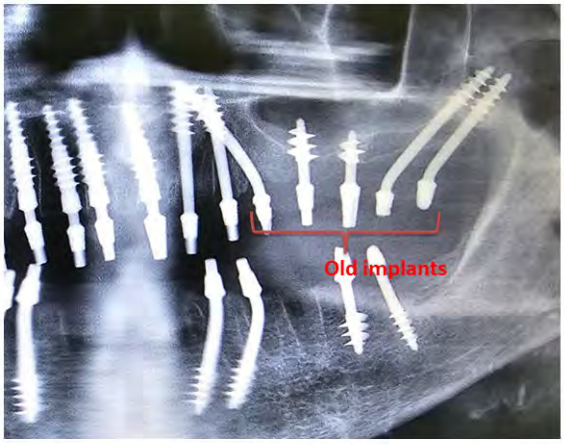
The Foundation of Knowledge

Method 9

Long-term disadvantage:

- After the canine fails, it is difficult to replace the canine without that the 2 implants are touching each other. The optimum direction of insertion of the canine implant is difficult to determine



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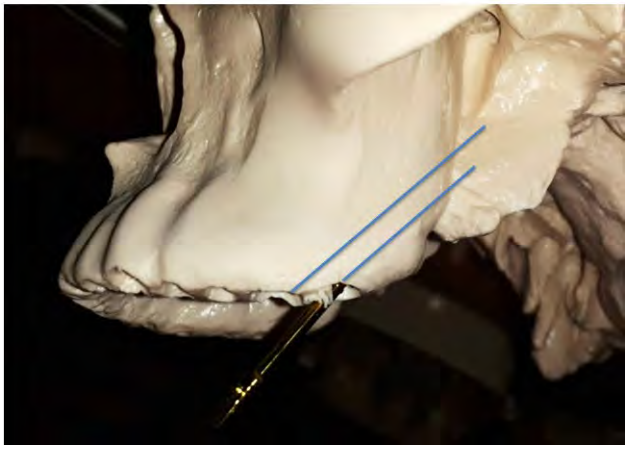
The Foundation of Knowledge

Method 10

Placement of the apical thread of the implants into the cortical bone of the pterygoid plate of the sphenoid bone.



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Method 10

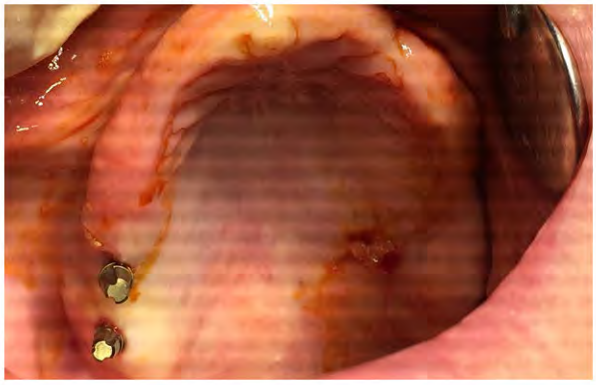
Slide 80

Method 10

The Foundation of Knowledge

Intra-oral view
Double tuberopterygoid cortical implant placement.

Implants are already bent parallel.



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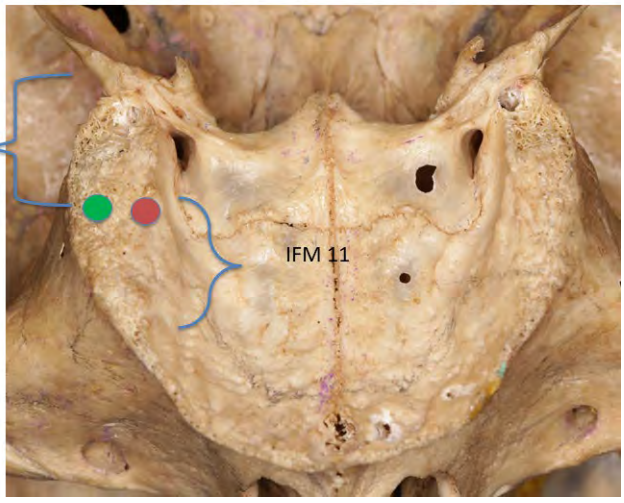
Method 10

The Foundation of Knowledge

Intra-oral view
Double
tuberopterygoid
cortical implants after
parallelization.



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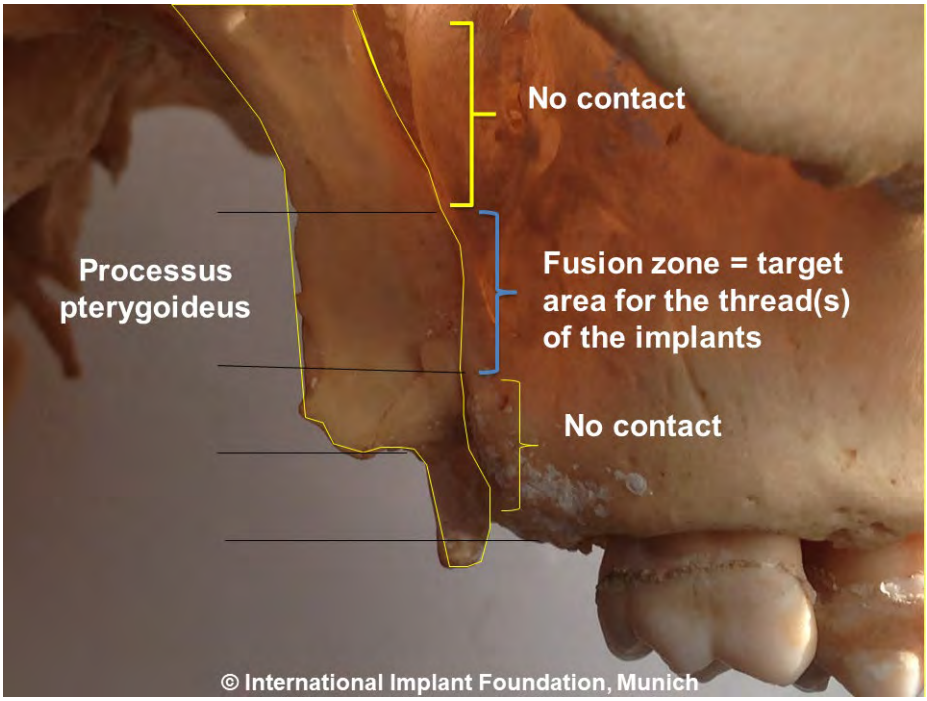

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Method 11a

The Foundation of Knowledge

Placement of BCS® into the bone palatal to the maxillary sinus

Comprising

11a anchorage in the bone palatally to the maxillary sinus without anchorage in the floor of the nose or the palatal median raphe

11b anchorage in the sutura palatina mediana

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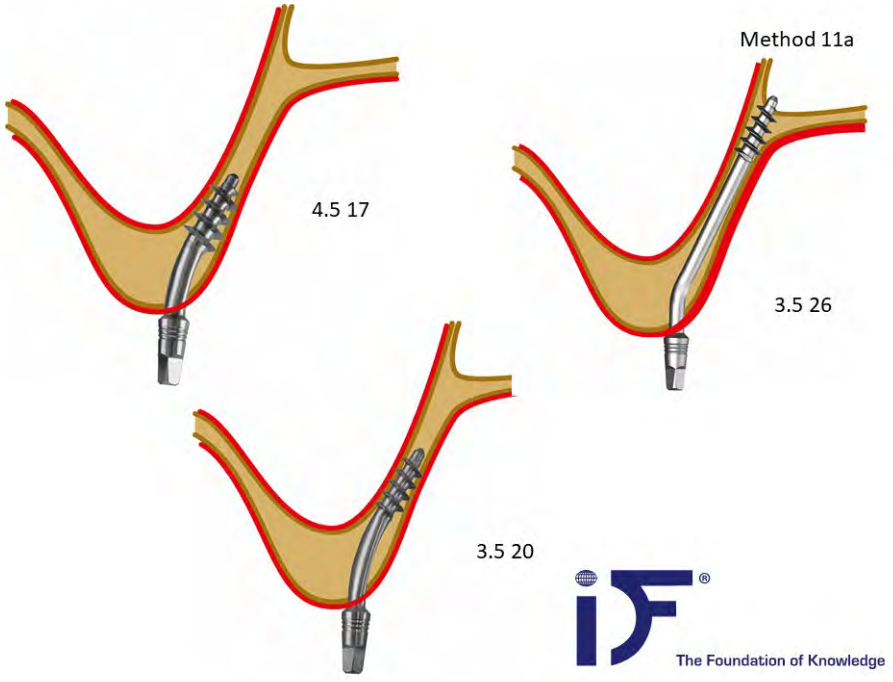

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The Foundation of Knowledge

Method 11c

Target cortical:
Anchorage in the floor of the nose

1st cortical:
Alveolar crest

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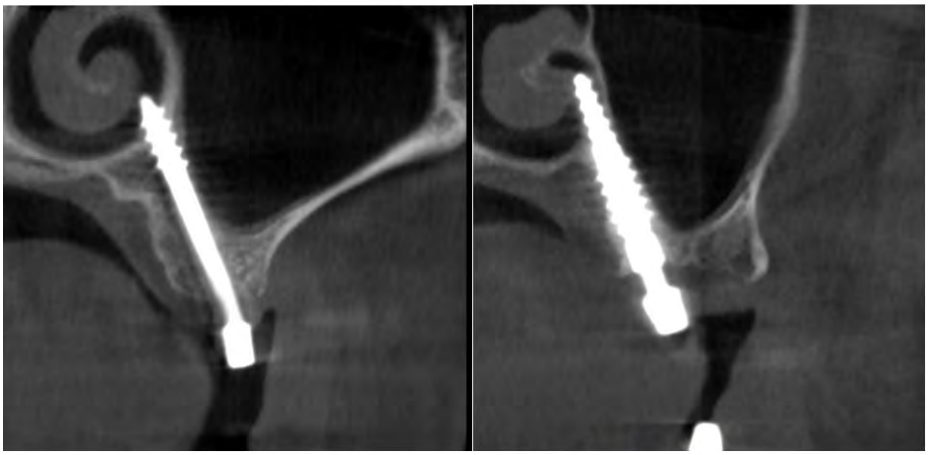
Method 11a



The Foundation of Knowledge

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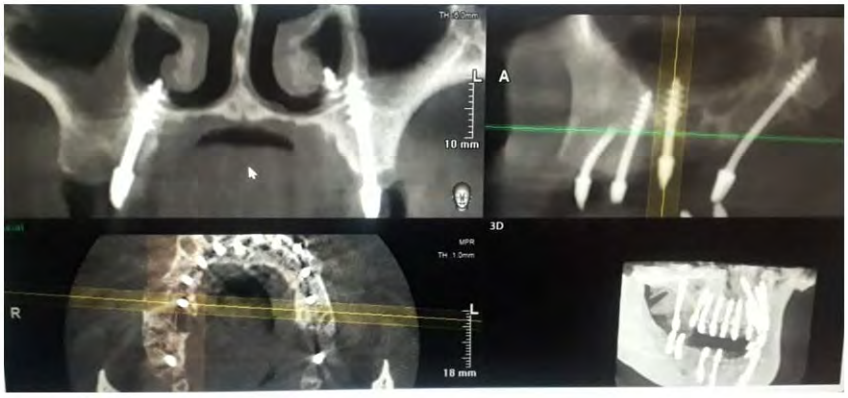
Method 11a



The Foundation of Knowledge

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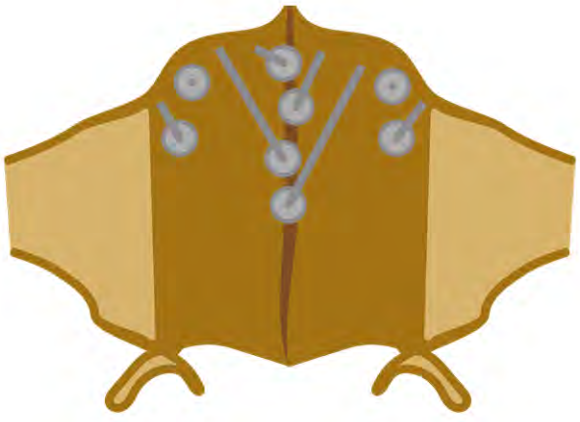
The Foundation of Knowledge

Method 11b

Anchorage in the sutura palatina mediana (sub- / intra-mucosal insertion path)



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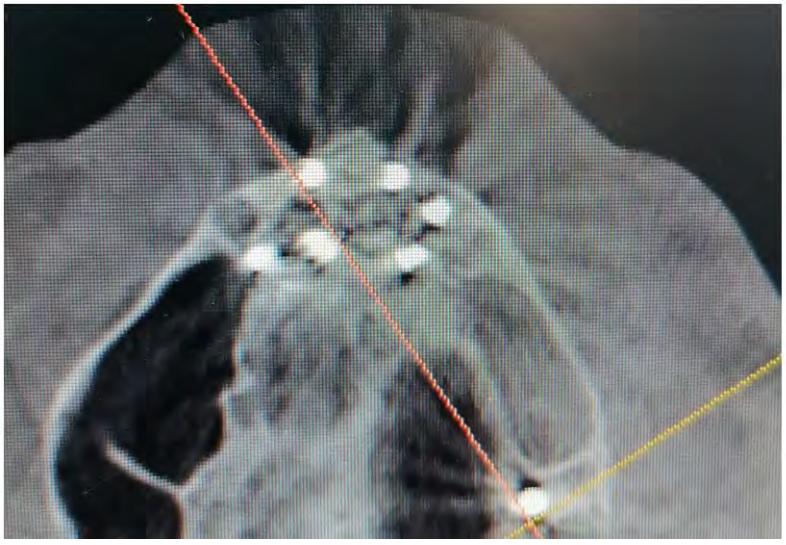
- Threads of implants are not touching each other
- Theads are placed in 2 rows (correct application)



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Methods 11c / 8a / 10

The Foundation of Knowledge

Anchorage in the sutura palatina mediana (sub- / intra-mucosal insertion path); correct application

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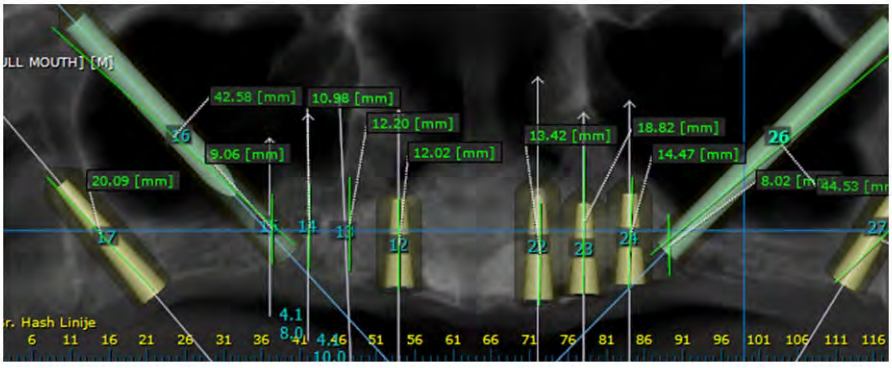
The Foundation of Knowledge

Method 12

Placement of BCS® into the zygomatic bone either directly (vestibular to the alveolar process of the maxilla), or through the maxillary sinus



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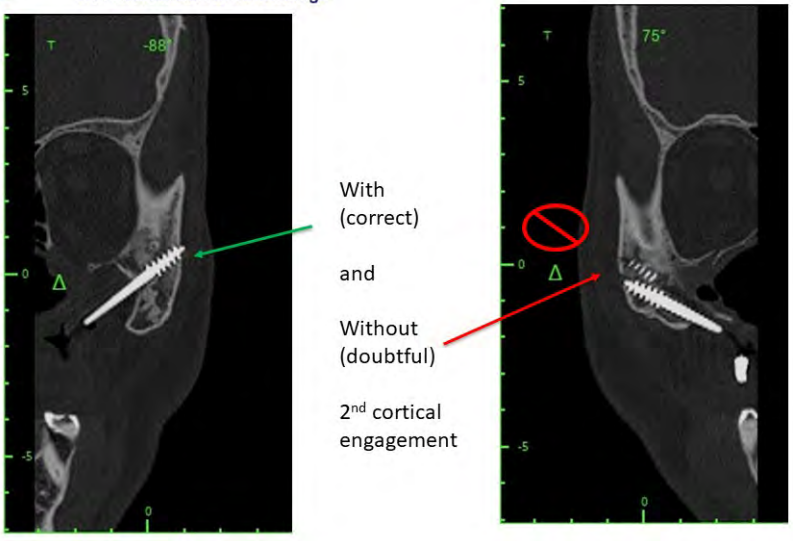
The Foundation of Knowledge

Method 12



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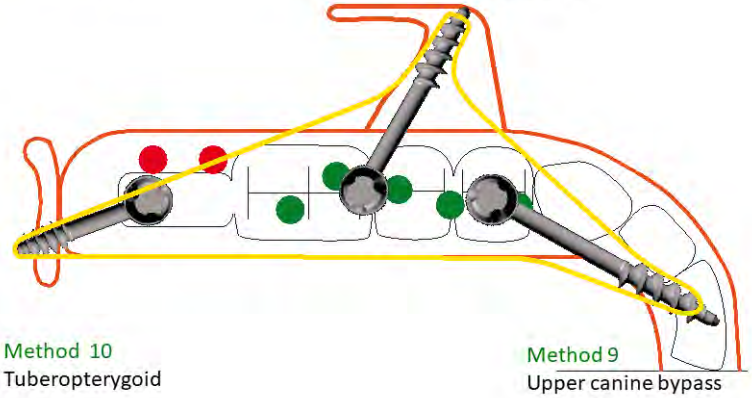
The Foundation of Knowledge

Considerations Regarding the Supporting Polygon

Method 12
Zygomatic anchorage



Method 10
Tuberopterygoid

Method 9
Upper canine bypass

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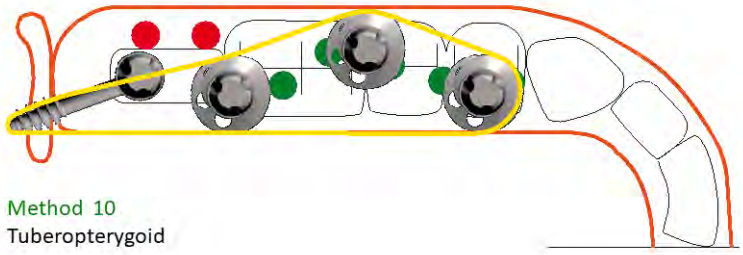
The Foundation of Knowledge

Considerations Regarding the Supporting Polygon

Method 6
Lateral / palatinal anchorage
or Method 8a / 8b
Anchorage in basal sinus cortical



Method 10
Tuberopterygoid

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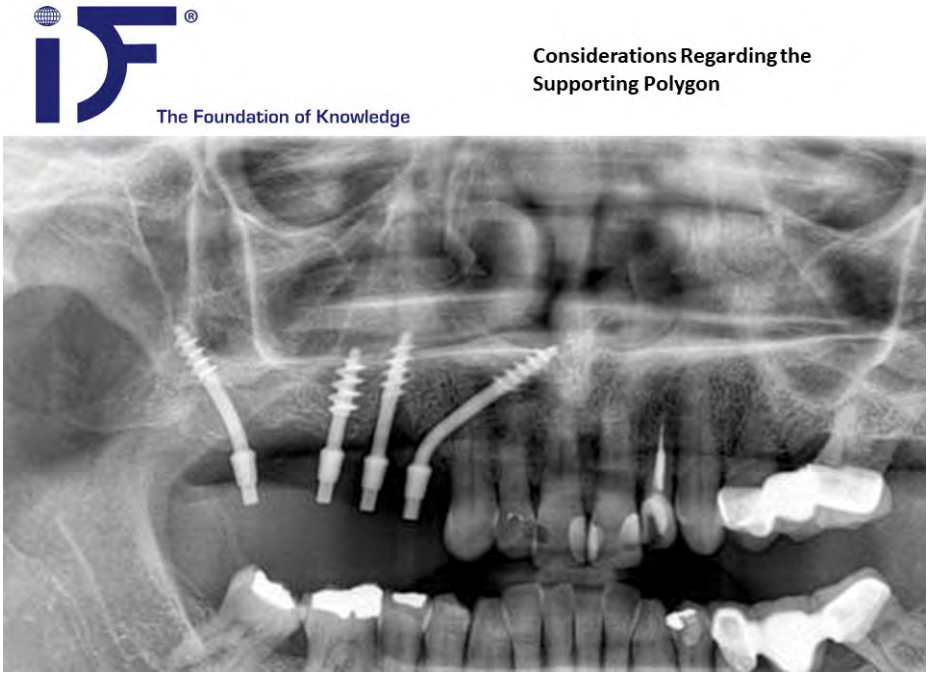
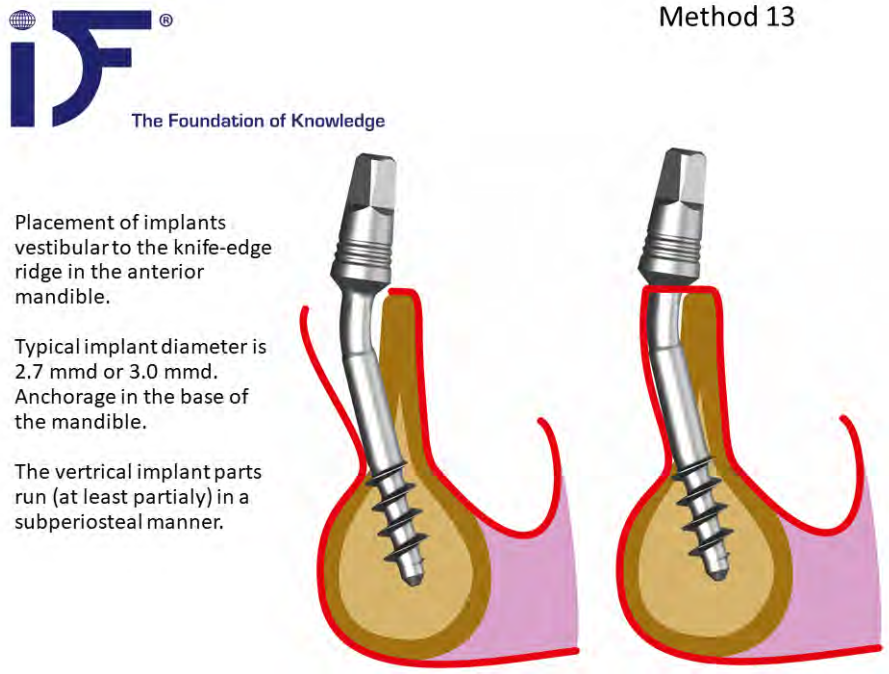


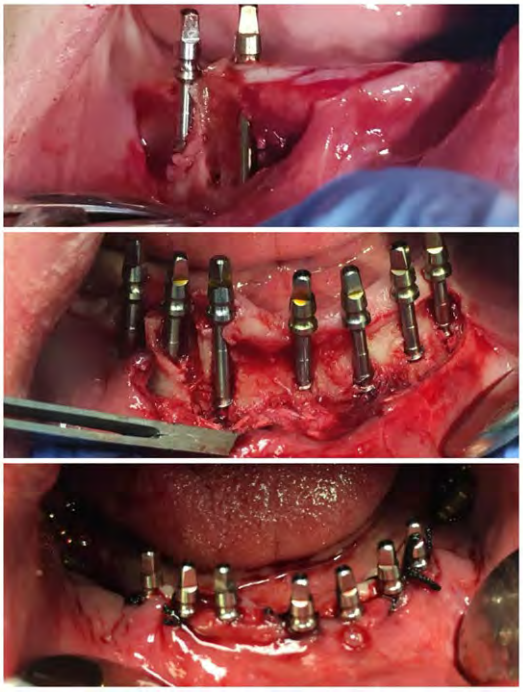
Slide 96



Slide 97

Don't learn
Implantology
by accident

Methods 7b and 13 can be used only for polished implants (e.g. BCS®) without any possibility of mechanic retention.



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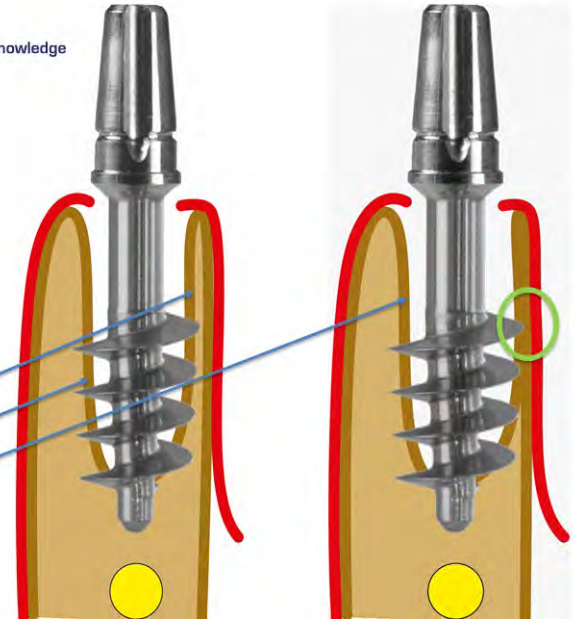
The Foundation of Knowledge

Method 14

Anchorage of an implant with 4.6 mm (or 5.5 mmd) in the extraction socket of a lower (or upper) 1st or 2nd premolar

Unstable lamina Cribrosa ("Cortical")



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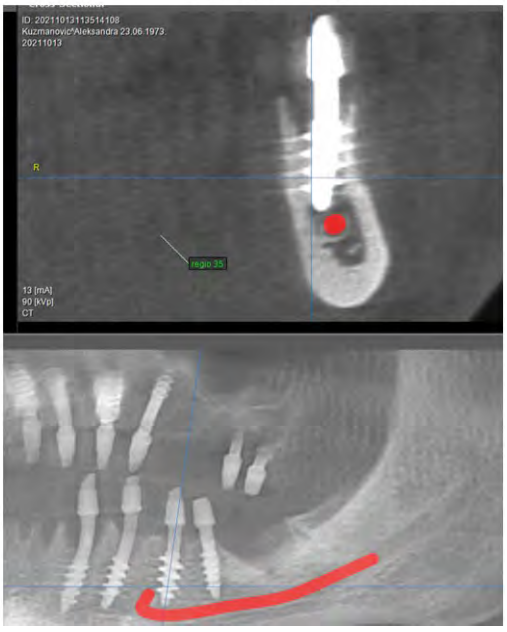
The Foundation of Knowledge

Method 14 / Method 6

Anchorage of an implant with 4.6 mm or 5.5 mm. in the extraction socket of a lower 1st or 2nd premolar



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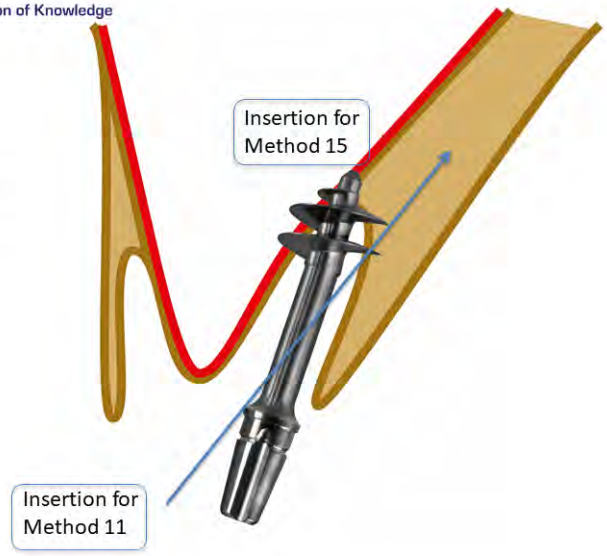
The Foundation of Knowledge

Method 15

Placement of a medium diameter Strategic Implant® into the palatal socket of a freshly extracted upper 1st or 2nd molar



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The Foundation of Knowledge

Method 16a

Placement of 2 implants in the area oft he 1st upper pre-molar, one of them bypassing the canine, and the other utilizing the socket of the vestibular root of the 1st pre-molar

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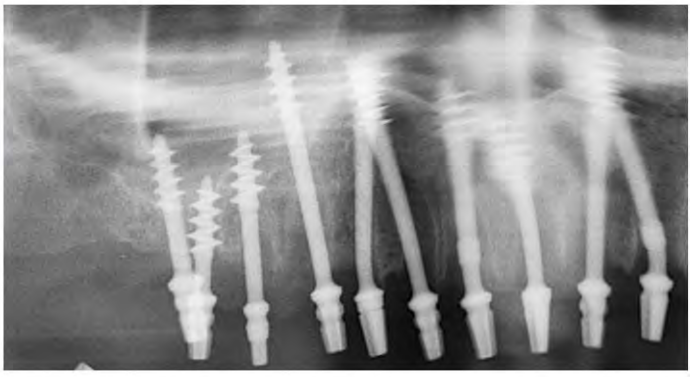
Don't learn **Implantology** by accident

Method 16b

Insertion of 2 implants in the extraction sockets of an upper 1st or 2nd molar, in cases where placement of tubero-pterygoid is not possible



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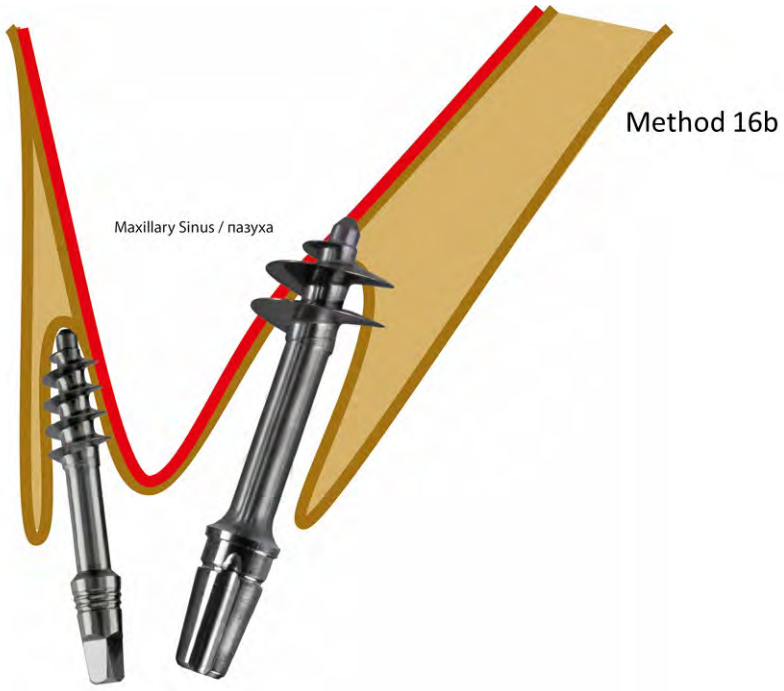

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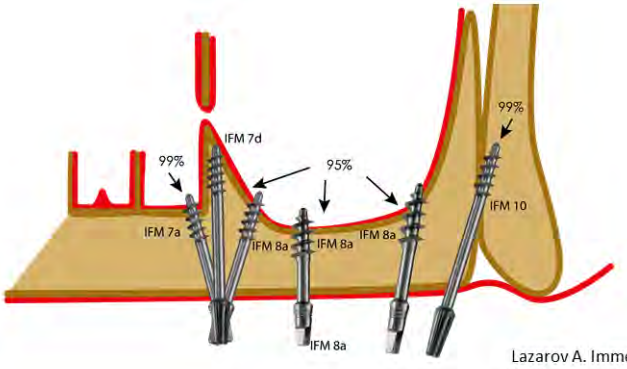
The Foundation of Knowledge

Method Success Comparison

Which target cortical should be chosen if we have several options?



Lazarov A. Immediate Functional Loading: results for the Concept of the Strategic Implant®. Ann. Maxillofac. Surg. 2019;9(1): 78.

Slide 105

The Foundation of Knowledge

Literature

Lazarov A. Immediate Functional Loading: Results for the concept of the Strategic Implant®. Ann Maxillofac Surg 2019; 9: 78-88.

Dobrinin O., Lazarov A., Konstantinovic V., et al. Immediate-functional loading concept with one-piece implants in the mandible and maxilla – A multi-center retrospective clinical study; J. Evolution Med. Dent. Sci./eISSN- 2278-4802, pISSN- 2278-4748/ Vol. 8/ Issue 05/ Feb. 04, 2019

Ihde et al. New Systematic Terminology of Cortical Bone Areas for Osseo-Fixated Implants in Strategic Oral Implantology. J J Anatomy. 2016, 1(2): 007.

Pałka ŁR, Lazarov A. Immediately loaded bicortical implants inserted in fresh extraction and healed sites in patients with and without a history of periodontal disease. Ann Maxillofac Surg 2019;9:371-8.

Lazarov A. Trans- and Intra-Sinus BCS Implants - Clinical Alternative for Advanced Upper Jaw Atrophy. Statistical analysis of complications associated with maxillary sinus; Dental World, Issue February 1, 2018

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Literature

Lazarov A. Immediate Functional Loading: Results for the concept of the Strategic Implant®. Ann Maxillofac Surg 2019; 9: 78-88.

Dobrinin O., Lazarov A., Konstantinovic V., et al. Immediate-functional loading concept with one-piece implants in the mandible and maxilla – A multi-center retrospective clinical study; J. Evolution Med. Dent. Sci./eISSN- 2278-4802, pISSN- 2278-4748/ Vol. 8/ Issue 05/ Feb. 04, 2019

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Lazarov A. Trans- and Intra-Sinus BCS Implants - Clinical Alternative for Advanced Upper Jaw Atrophy. Statistical analysis of complications associated with maxillary sinus; Dental World, Issue February 1, 2018

Thank you for your attention!

Evidence and Research Dept.
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