MIS | CONNECT

Tissue-Level Screw-Retained Solution

MIS CONNECT system
on MIS Website

MIS exercises great care and effort in maintaining the superior quality of its products. All MIS products are guaranteed to be free from defects in material and workmanship. However, should a customer find any fault in any MIS product after using it according to the directions, the defective product will be replaced.

The MIS Quality System complies with the following international quality standards: ISO 13485:2016 - Quality Management System for Medical Devices, and Medical Device Directive 93/42/EEC. Please note that not all products are registered or available in every country or region.

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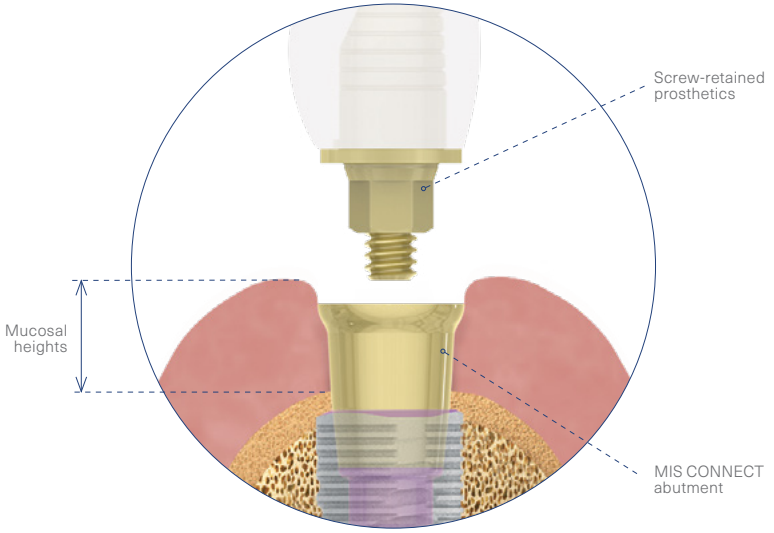
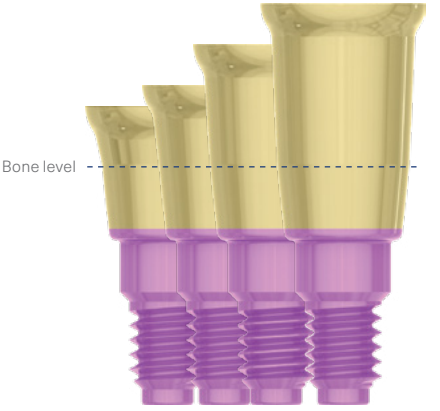
Introduction

The MIS CONNECT is a stay-in abutment system which enables avoiding interference with the peri-implant gingival seal.

It offers doctors the ability to maximize the tissue-level restoration concept, enabling the entire prosthetic procedure and restoration to occur far from the bone, and at any level of the connective tissue.

The CONNECT is designed to reduce micro-movements and micro-leakage of bacteria at the bone level.





Benefits

Versatility

The MIS CONNECT system may be used in single or multiple unit restorations for digital or traditional procedures. It may also be used for both provisional and final prosthetic restorations, as well as for stage one or II stage procedures.

Ease of use

The CONNECT abutment is delivered sterile and comes with its own plastic grip for maximum ease of use. The system features a simple suprastructure engagement with a 12 point connection and offers one line of suprastructures for all platforms.

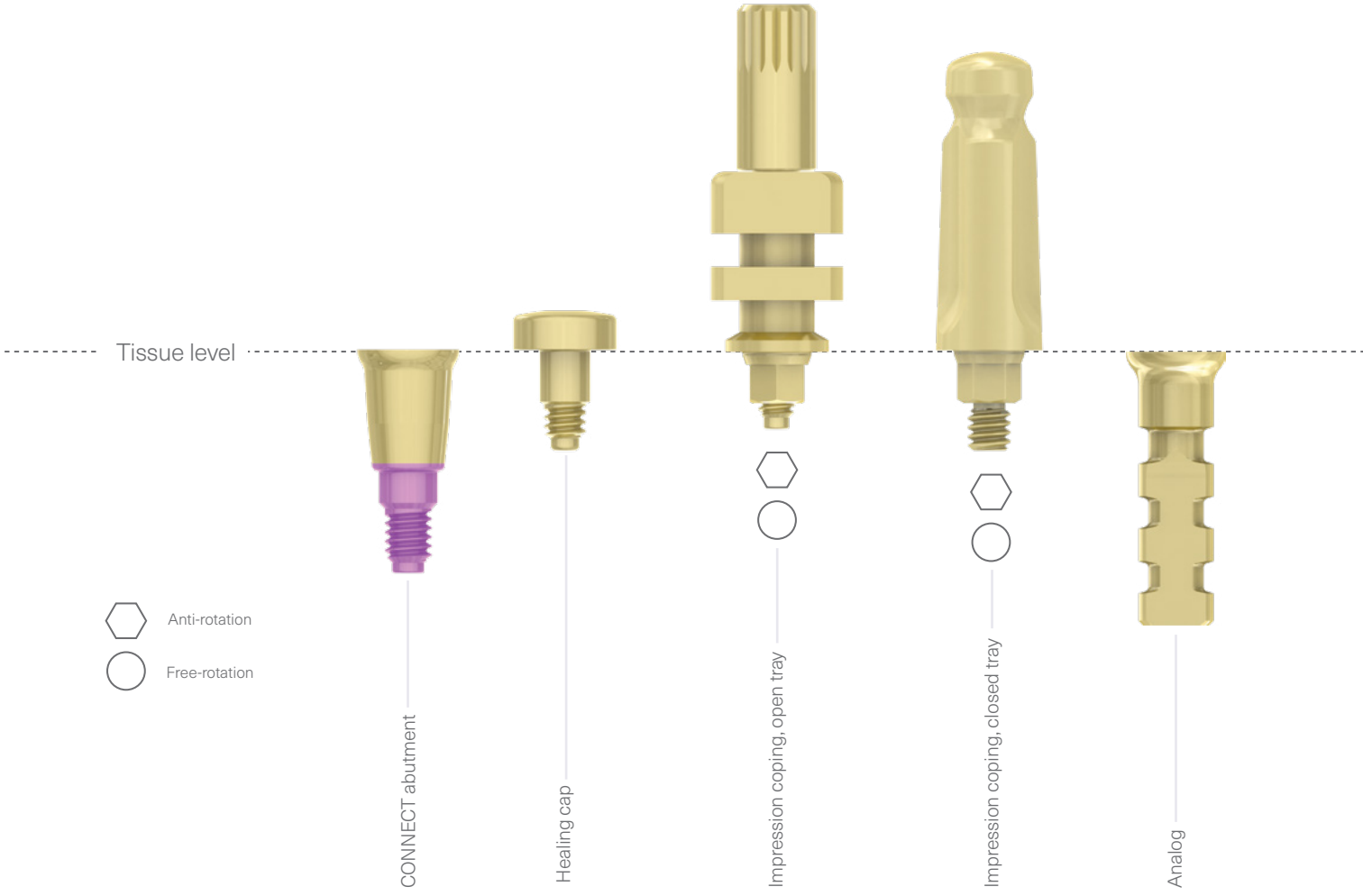
Esthetics

The transmucosal CONNECT abutment (low and narrow profile) was designed to facilitate a predictable and successful outcome. Using the CONNECT potentially enables creating a biologic seal around the implant/bone junction. This may provide the best possible environment to maintain bone level, and esthetic soft tissue results. In addition, the solution allows for a broader range of screw-retained prosthetics in the esthetic zone.

Ultimate precision & durability

CONNECT abutments are one-piece and solid (with no separate prosthetic screw). The system enables a smooth path of insertion for bridges and connected crowns, thanks to a 40° opening of the abutment. Its internal connection presents the advantage of high accuracy and ultimate fit with the suprastructures.

MIS CONNECT System



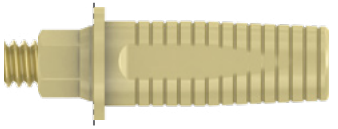
Digital model analog

Scan post

Temporary cylinder

Final esthetic abutment, H6mm

Final esthetic abutment, H8mm



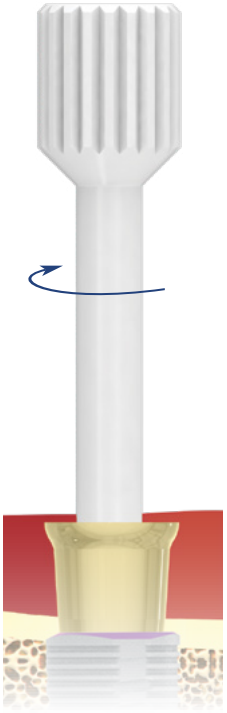
CoCr plastic cylinder

Angulated cementable abutment

Specialized Components

1. Assembly

Gingival height measurements should be taken prior to assembly.

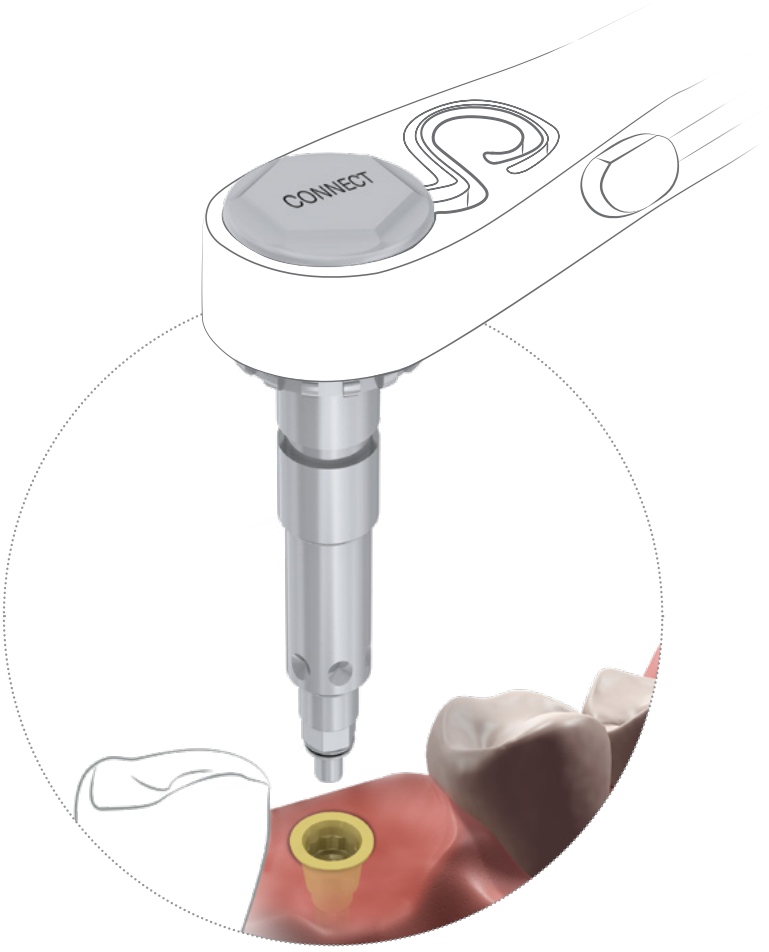


Use the plastic gripping tool to attach the CONNECT abutment to the implant.

Remove the plastic tool by applying a slight bending motion.

2. Tightening

The CONNECT is tightened to the implant using the CONNECT insertion tool, to a recommended torque of 30Ncm.



Step by Step

1.

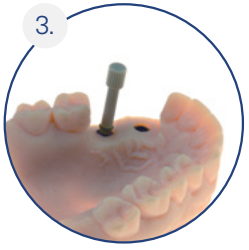
Measure the gingival height at the implant site with a periodontal probe.

2.

Choose the appropriate height of the CONNECT abutment, according to the measured mucosa height.

To optimize esthetic results, select a CONNECT abutment at least 1mm above bone crest and 1.5mm below the lowest point of the gingival margin.

3.



Use the plastic gripping tool to screw in the CONNECT abutment to the implant and then remove the tool with a slight bending motion.

4.

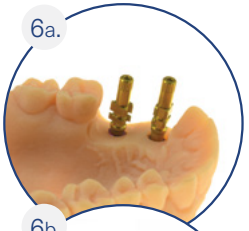
Tighten the abutment with 30Ncm of torque, using the CONNECT insertion tool.

In case of implant insertion torque < 30Ncm:
Tighten the CONNECT abutment with 15Ncm torque. Then, at the end of the healing period, but before final impression-taking, tighten it further to 30Ncm.

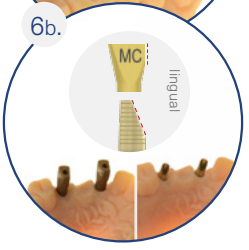
5.

Place a CONNECT healing cap for the duration of the healing period, using a maximum torque of 15Ncm OR load with temporary restoration torqued to 20Ncm.

6a.



6b.



! Re-tighten the CONNECT with a torque of 30Ncm before taking impression.

To take an impression on the CONNECT platform:

a. Traditional (analog) restoration procedure - Both free and anti-rotation open tray impression copings may be used with elastomeric impression material.

Long and short impression coping screws are provided in each package for optimal impression-taking.

b. Digital restoration procedure - Attach the scan post to the CONNECT, orienting the narrow flat side of the scan post towards the desired direction of the screw channel of the final esthetic abutment and scan.

The narrow flat side of the scan post directly aligns with the orientation of the of the final esthetic abutment's screw channel opening.

7.

Use CONNECT analog or digital analog according to the impression procedure.

8.

Use the final abutment for the final restoration.
Tighten the final restoration with a torque of 30Ncm.

For cases using an angled screw channel, use the angled screw channel screw (sold separately - MM-SA160), using the angled screw channel prosthetic key (MT-ELR10) and tighten to 25Ncm.

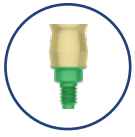
Note: When creating a multi-implant bridge the maximum angle correction of diverging implants on the free rotating final esthetic abutment is 40° (20° for each implant).

MIS CONNECT Abutment System Ø4mm

CONNECT Abutment

CN-C2040 H=2mm, Ø4mm
CN-C3040 H=3mm, Ø4mm
CONNECT abutment, conical connection, NP

CS-C1540 H=1.5mm, Ø4mm
CS-C2040 H=2mm, Ø4mm
CS-C3040 H=3mm, Ø4mm
CS-C4040 H=4mm, Ø4mm
CONNECT abutment, conical connection, SP



CW-C1540 H=1.5mm, Ø4mm
CW-C2040 H=2mm, Ø4mm
CW-C3040 H=3mm, Ø4mm
CW-C4040 H=4mm, Ø4mm
CONNECT abutment, conical connection, WP

Healing Caps

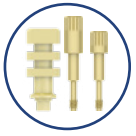
MM-H0540 H=0.5mm, Ø4mm
MM-H1540 H=1.5mm, Ø4mm
MM-H3040 H=3mm, Ø4mm
CONNECT healing cap

Analogs

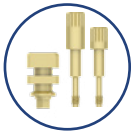
MM-RSM41 Ø4mm CONNECT analog

MM-MAN40 Ø4mm CONNECT digital model analog

Impression Coping



○ **MM-IO011** C=11mm
○ **MM-IOI11** Ø4mm
CONNECT long impression coping for open tray, free rotation/anti rotation



○ **MM-IO040** C=7mm
○ **MM-IOI40** Ø4mm
CONNECT short impression coping for open tray, free rotation/anti rotation

MM-ICI40 C=8.3mm Ø4mm
CONNECT Impression coping for closed tray, anti rotation (Requires MT-IT100 key)

MM-IC040 C=8.3mm Ø4mm
CONNECT impression coping for closed tray, free rotation (Requires MT-IT100 key)

Temporary Cylinders

MM-TCI41 C=10mm Ø4mm
CONNECT temporary cylinder, anti rotation

MM-TC041 C=10mm Ø4mm
CONNECT temporary cylinder, free rotation

Final Esthetic Abutments

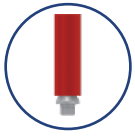
MM-CEI46 | C=6mm, Ø4mm | CONNECT final esthetic abutment, anti rotation

MM-CE046 | C=6mm, Ø4mm | CONNECT final esthetic abutment, free rotation

MM-CFI48 | C=8mm, Ø4mm | CONNECT final esthetic abutment, anti rotation

MM-CF048 | C=8mm, Ø4mm | CONNECT final esthetic abutment, free rotation

MM-AN204 | C=8mm, Ø4mm | CONNECT angulated cementable abutment, 20°, anti rotation



MM-CCRI4 | C=14mm Ø4mm | CONNECT CoCr plastic cylinder, anti rotation

MM-CCR04 | C=14mm Ø4mm | CONNECT CoCr plastic cylinder, free rotation

Scan Post

MM-SP104 | L=10mm, Ø4mm | CONNECT scan post, anti rotation

Tools

MT-CLM21 | CONNECT long motor insertion tool
MT-CSM21 | CONNECT short motor insertion tool

MT-CLR21 | CONNECT long ratchet insertion tool
MT-CSR21 | CONNECT short ratchet insertion tool

MM-S0160 | CONNECT prosthetic screw

MM-SA160 | Prosthetic screw for angled screw channel (Sold separately)

MIS CONNECT Abutment System Ø5.7mm

CONNECT Abutments

CS-C1557 H=1.5mm, Ø5.7mm
CS-C2057 H=2mm, Ø5.7mm
CS-C3057 H=3mm, Ø5.7mm
CS-C4057 H=4mm, Ø5.7mm
CONNECT abutment, conical connection, SP

CW-C1557 H=1.5mm, Ø5.7mm
CW-C2057 H=2mm, Ø5.7mm
CW-C3057 H=3mm, Ø5.7mm
CW-C4057 H=4mm, Ø5.7mm
CONNECT abutment, conical connection, WP

Healing Caps

MM-H0557 H=0.5mm, Ø5.7mm
MM-H1557 H=1.5mm, Ø5.7mm
MM-H3057 H=3mm, Ø5.7mm
CONNECT healing cap

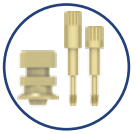
Analogs

MM-RSM57 L= 11mm Ø5.7mm
CONNECT analog

MM-MAN57 L= 12mm Ø5.7mm
CONNECT digital model analog

Impression Copings

MM-IOI57 C=7mm Ø5.7mm
CONNECT impression coping, for open tray, anti rotation

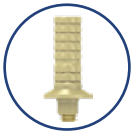


MM-IO057 C=7mm Ø5.7mm
CONNECT impression coping for open tray, free rotation

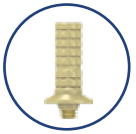
MM-ICI57 C=8.8mm Ø5.7mm
CONNECT Impression coping for closed tray, anti rotation (Requires MT-IT100 key)

MM-IC057 C=8.3mm Ø5.7mm
CONNECT impression coping for closed tray, free rotation (Requires MT-IT100 key)

Temporary Cylinders



MM-TCI57 C=10mm Ø5.7mm
CONNECT, temporary cylinder, anti rotation



MM-TC057 C=10mm Ø5.7mm
CONNECT temporary cylinder, free rotation

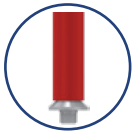
Final Esthetic Abutments

MM-CEI56 | C=6mm Ø5.7mm | CONNECT final esthetic abutment, anti rotation

MM-CE056 | C=6mm Ø5.7mm | CONNECT final esthetic abutment, free rotation

MM-CFI54 | C=4mm Ø5.7mm | CONNECT final esthetic abutment, anti rotation

MM-CF054 | C=4mm Ø5.7mm | CONNECT final esthetic abutment, free rotation



MM-CCRI5 | C=15.4mm Ø5.7mm | CONNECT CoCr plastic cylinder, anti rotation

MM-CCR05 | C=15.4mm Ø5.7mm | CONNECT CoCr plastic cylinder, free rotation

Scan Post

MM-SP105 | L=10mm Ø5.7mm | CONNECT scan post, anti rotation

Tools

MT-CLM21 CONNECT long motor insertion tool
MT-CSM21 CONNECT short motor insertion tool

MT-CLR21 CONNECT long ratchet insertion tool
MT-CSR21 CONNECT short ratchet insertion tool

MM-S0160 | CONNECT prosthetic screw

MM-SA160 | Prosthetic screw for angled screw channel (Sold separately)

R&D Testing

R&D tests have shown that even with a narrow and modular profile, the CONNECT has outstanding mechanical properties and will not be released overtime, even as a single unit crown.

Fatigue test

The CONNECT abutment has withstood 5,000,000 cycles at the fatigue limit of 210N for standard platform and 140N for the narrow platform.

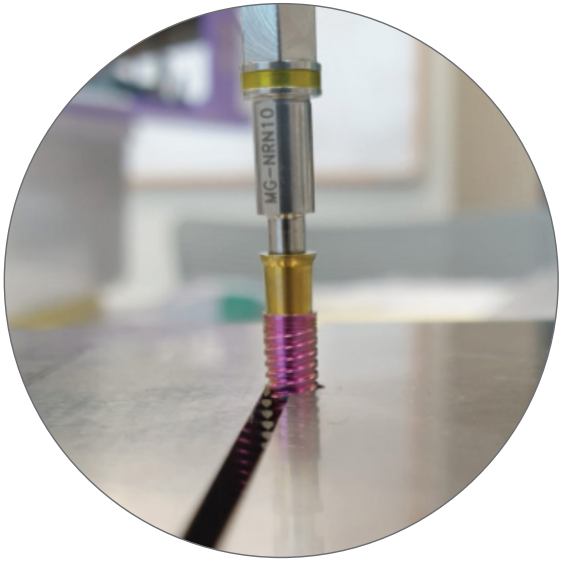
These results are equivalent to a comparable standard final abutment. No superstructure prosthetic screws were damaged or fractured during the testing.

Screw loosening test

This tests the effect of lateral cyclic loading to see if there will be screw loosening of the MIS CONNECT.

Initially tightened at 30Ncm, then subjected to cyclic lateral loading for 1 million cycles at 150N.

No screw loosening was observed. Furthermore, reverse torque values increased by 85%.



Fracture torque test

This tests the maximum torque value the MIS CONNECT and Implant assembly can withstand before fracture.

The MIS CONNECT was proven to withstand torque values of up to 5x the recommended tightening torque of 30Ncm.

Clinical Study

A randomized controlled clinical trial, designed to examine if the use of the “one abutment - one time” concept presents any advantage over the traditional approach.

Prof. Tomas Linkevičius, DDS, Dip Pros, PhD
Institute of Odontology, Vilnius University in Lithuania

Aim of the study

To determine the influence of two distinct prosthetic approaches on: ▪ Crestal bone stability ▪ Level of inflammation ▪ Peri-implant soft tissue ▪ Esthetic parameters

Hypothesis

The “one abutment-one time” concept using the CONNECT abutment will lead to enhanced crestal bone stability compared to a traditional approach, which involves the use of multiple abutment disconnections and soft tissue seal alteration.

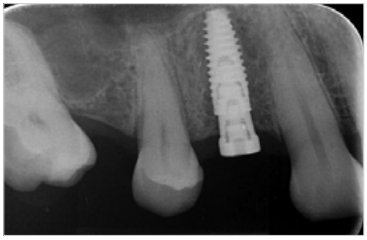
Study design

Over 60 patients were enrolled and divided into two groups: Control group - restoration with conventional abutment, involving several abutment disconnections. Test group - one abutment-one time with the CONNECT abutments - no abutment disconnection. Surgical procedures were performed utilizing the MIS V3 implants (Ø3.9 x 8-11.5mm).

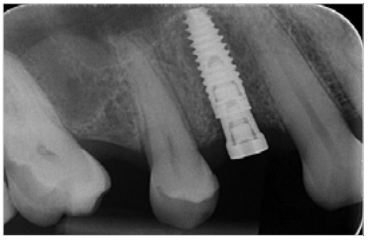
Preliminary results

Radiographic evaluation of crestal bone levels (bone loss and bone remodeling). 4 weeks after final restoration delivery 73 patients (19 male, 54 female, mean age 46.1± 2.8 y) received 73 implants (47 mandible, 26 maxilla), which all integrated, restored and were available for the assessment in 1-month post-restorative evaluation.

Preliminary results of the CONNECT abutment after 5 months, with final restoration.

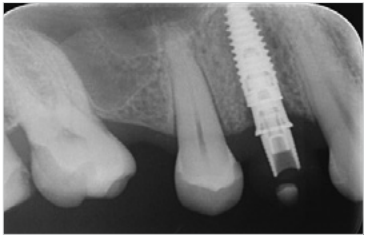


27.6.2018 MIS V3 implant placed 2 mm subcrestally and CONNECT abutment immediately connected.

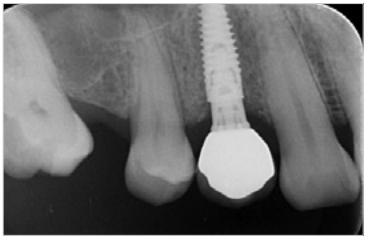


10.9.2018 Radiologic image 2 months after healing with no bone loss.

10.9.2018 Peri-implant soft tissues around CONNECT abutment.



16.11.2018 After 1 month with a provisional restoration, no bone loss is detected.



23.11.2018 Post-restorative situation with final Zirconia based screw-retained restoration, torqued 30Ncm to CONNECT abutment. No bone loss and no bone remodeling shown.

	Test (CONNECT), mm	Control (Abutment Disconnection), mm	Statistical significance (Mann-Whitney U-test)
Bone loss	0.11 ±0.23	0.67±0.4	$p < 0.0001$
Bone remodeling	0.53±0.45	1.29 ±0.59	$p < 0.0001$

Bone loss - bone resorption below the implant neck
Bone remodeling - bone resorption above the implant neck

Clinical Case

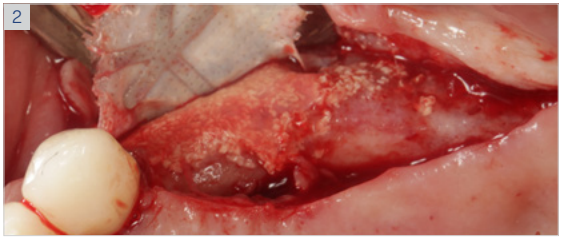
One-time CONNECT abutments in different diameters in the posterior maxilla

Dr. Stavros Pelekanos Practice limited to Prosthodontics and implant dentistry, University of Athens, Greece;
Dr. Ventseslav Stankov, DDS Private practice, Plovdiv, Bulgaria

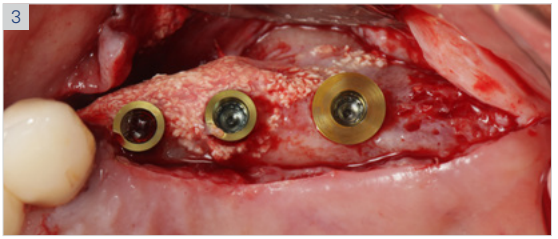
A healthy 55 year old female patient presented in the office with partial posterior edentulism in the second quadrant (missing premolars and molars). After a clinical and radiographic examination, horizontal and vertical bone defects were diagnosed. The treatment plan involved vertical and horizontal GBR, using a mixture of autogenous bone and xenograft, covered by a titanium reinforced non-resorbable membrane. 6 months post op, the membrane was removed and three MIS V3 implants were placed, replacing the 2 premolars and the first molar. At the same time, three CONNECT abutments were connected to the implants (two regular 4mm and one wide, 5.7mm platform to the premolars and molars respectively) and covered completely with cover screws. The final torque during implant placement exceeded 30Ncm and all the CONNECT abutments were placed with a 30Ncm final torque. 3 months post op, the uncovering of the CONNECT abutments followed using a split flap technique, moving the keratinised tissues towards the vestibulum in order to create more stable soft tissues surrounding the implants. The CONNECT abutments were covered with A-PRF. A full digital prosthetic workflow was followed and a screw-retained full contour Zirconia FPD (fixed partial denture) was inserted a couple of weeks later.

Initial situation with bone and soft tissue deficiency

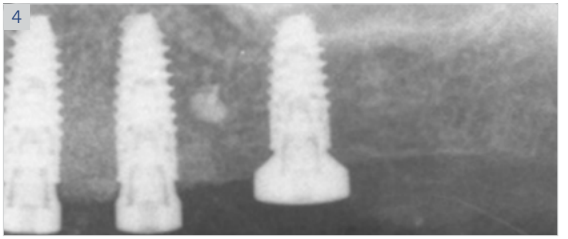
6 months after GBR with non resorbable membrane and mixture of xenograft and autogenous bone graft



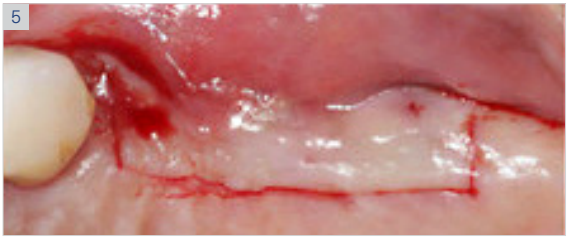
Tooth #24, 25, 26 : implant placement with simultaneous one time CONNECT abutment (#26 wide platform 5.7mm)

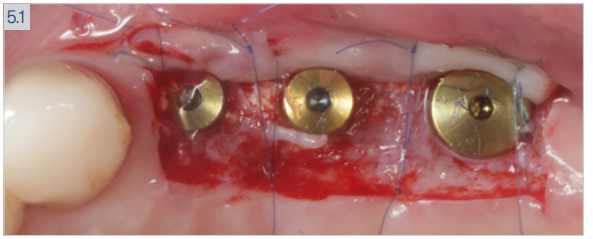


Radiographic image of implants and CONNECT abutments

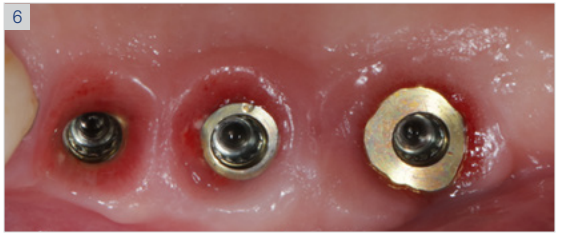


Apical reposition flap technique covered with PRF

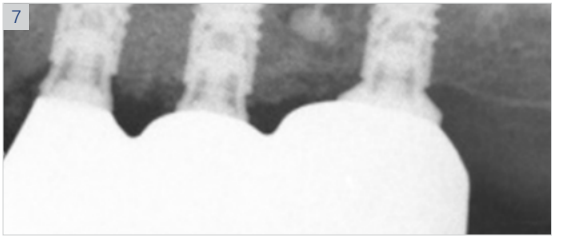




Final clinical occlusal view after soft tissue maturation, 2 months after implant and CONNECT uncover



Final radiographic view



CONNECT FAQs

What are the advantages of using the CONNECT abutment system?

Some of the advantages of using the CONNECT include:

- Distancing the prosthetic platform from the bone, which may lead to reduced bone remodeling.
- One time abutment.
- Solid abutment – no screw chimney with unavoidable contamination.
- Narrow profile Ø4mm CONNECT.
- Bone level implant transforms to customized tissue level implant.
- Simple, traditional or digital prosthetic workflow.
- In case of significant tissue alteration, the CONNECT may be re-placed at the desired height.
- Flexibility in choosing the appropriate height of the CONNECT according to thickness of the mucosa.
- Guarantees placement of clean and sterile components which come in contact with the gingiva.

For which indications would I use the CONNECT?

- One stage procedure – With healing cap on top.
- Immediate loading – With temporary cylinder on top.
- Two stage procedure: implant submerged, or CONNECT with 0.5mm healing cap submerged.
- Single unit restoration.
- Multiple implant restoration.

Which implants is the CONNECT compatible with?

Conical connection implants: C1 (NP, SP, WP) and V3 (NP, SP).

Which tools do I need in order to use the CONNECT?

For CONNECT abutment: CONNECT insertion tool
For prosthetic screws and healing caps: MT-RDL30 - 0.05 inch hex driver
For closed-tray impressions (MM-IC040): MT-IT100 - Closed-tray impression coping tool
For digital impressions – scan body (MM-SP104): MT-RDL30 - 0.05 inch hex driver
For angled screw channel (MM-SA160): MT-ELR10 - Long ratchet key for angulated screw and MT-ELM10 - Long motor key for angulated screw

What kind of connection does the CONNECT have?

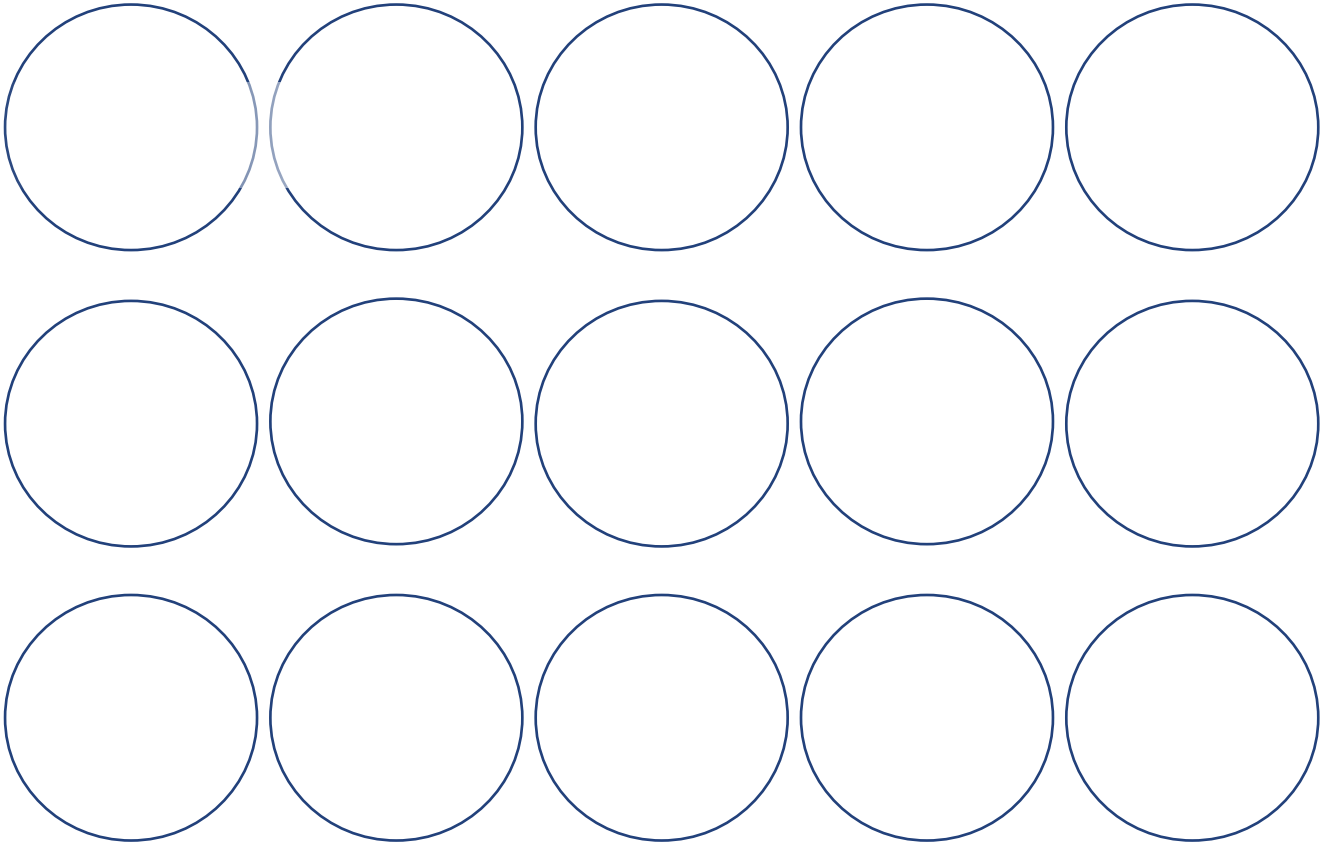
The CONNECT is assembled to the implant using a 12 degree conical connection with a torque of 30Ncm for NP, SP & WP. The internal connection which interfaces with the superstructure, is a double hex connection, which enables 12 different options of positioning.

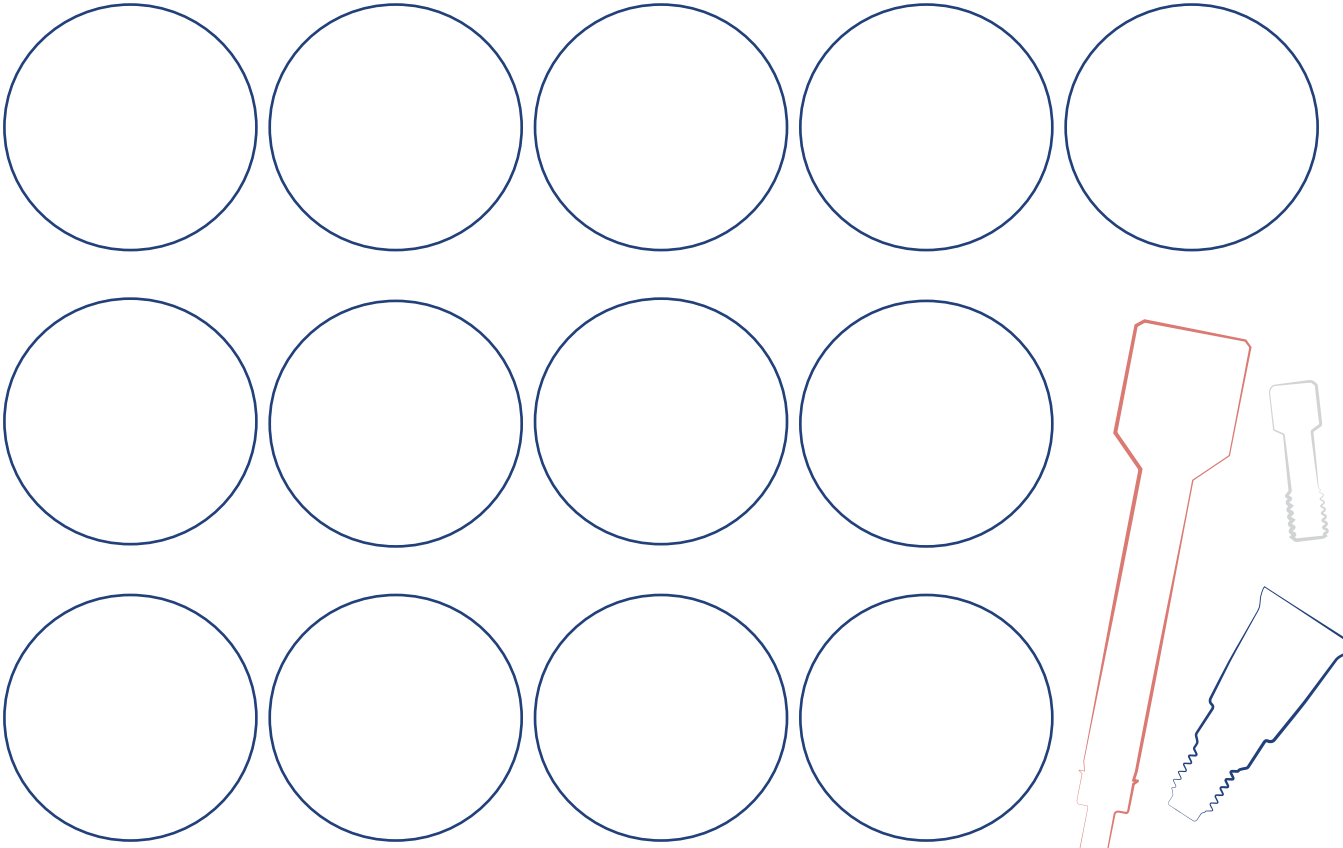
How do the strength and durability of the CONNECT compare with other systems?

R&D tests have shown that even with a narrow and modular profile, the CONNECT has outstanding mechanical properties and will not be released overtime, even as a single unit crown.

Is the CONNECT integrated into a digital workflow?

Yes. CONNECT system components are integrated in both 3Shape and Exocad libraries.





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