Latest Trends in Implant Dentistry

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Solutions to avoid complications...
Principles of platform shifting & soft tissue management
NobelActive from 2008 til 2014….
NobelActive...2008 til 2014....
NobelActive 2008 til 2014….bone maintainance…
Algorithms for Placement

- Free Handed
- Static Guide
- Dynamic Guided
Free Handed

- Over 90% of implants placed this way
- Entry level Deviation 1.2-1.5mm
- Angular Deviation – up to 10 degrees off
- Apex Lateral Deviation 1.4-1.8mm
Computer Guided

- Dependent on Software
- Has a Cost
- Typically takes time to manufacture
- Quality can be Variable
Limitations of Guided Surgery

Adequate mouth opening – sometimes limited access in posterior sites

- Accessibility is improved due to slightly longer instrumentation and intelligent planning, with slightly angulated implant axis in the posterior
Limitations of Guided Surgery

Access in posterior sites:

- Minimum (anterior) mouth opening of 40 mm (in front) is needed
NobelGuide® workflow

Clinical Diagnostics → Impression → Digitization → Digital Diagnostics & Treatment Planning → Guided Surgery → (Prefabricated) Provisional
From scan to plan at the first visit

- More flexibility - Use **intraoral scan data** for your treatment plan

- More information - Add the **antagonist** and include **existing prosthetic information** to consider in your treatment plan
Diagnostics & Planning

Prosthetic-driven treatment planning

• Visualize your patient’s anatomy according to the prosthetic needs
Diagnostics & Planning

Prosthetic-driven treatment planning

• Visualize your patient’s anatomy according to the prosthetic needs
Diagnostics & Planning

Prosthetic-driven treatment planning

• Panorex (OPG) view
Dynamic 3D Navigation for Implant Surgery
Why NAVIGATE?

Navigation provides the accuracy of Guides, but solves the challenges associated with the guide process.

Clinical Accuracy (in microns) with Surgical Flexibility
Dynamic 3D Navigation for Implant Surgery

What is the X-Guide?
X-Guide Dynamic 3D Navigation System

- Stereo cameras with wide baseline
- Violet LEDs for accuracy
- 6-foot versatile arm to keep out of sterile field
- 24 inch Monitor
- Custom super-computer in base
- 2 “gaming” GPUs
- Cart on wheels for room-to-room mobility
- Cart size 2’ x 2’
What is the X-Guide?

**Real-time**

TURN
BY
TURN

**navigation**
What is the X-Guide – X-Point Target

EXACT
POSITION
ANGLE
& DEPTH

on a single target

with anatomy
Impression-taking techniques
Matching Impression Copings and Healing Abutments...

Regular Platform ø 4.3 & 5.0

RP ø 3.6

RP ø 5.0
Conical Connection – Coordinate healing abutment and impression coping diameter

NP Ø 3.6 x 3mm  NP Ø 3.6 x 5mm  NP Ø 3.6 x 7mm  NP Ø 5.0 x 3mm  NP Ø 5.0 x 5mm  NP Ø 5.0 x 7mm  NP 3.6 x 13 (tall)  NP 5.0 x 13 (tall)

RP Ø 3.6 x 3mm  RP Ø 3.6 x 5mm  RP Ø 3.6 x 7mm  RP 5.0 x 3mm  RP 5.0 x 5mm  RP 5.0 x 7mm  RP 3.6 x 9mm (short)  RP 3.6 x 13mm (tall)  RP 5.0 x 9mm (short)  RP 5.0 x 13mm (tall)

RP Ø 6.0 x 3mm  RP Ø 6.0 x 5mm  RP Ø 6.0 x 7mm  RP 6.0 x 9mm (short)  RP 6.0 x 13mm (tall)

NP Ø 5.0 x 3mm  NP Ø 5.0 x 5mm  WP Ø 6.5 x 3mm  WP Ø 6.5 x 5mm  WP Ø 6.5 x 7mm  WP 6.5 x 9mm (short)  WP 6.5 x 13mm (tall)

WP Peek 6x7mm  WP Peek 7x8mm  WP 5.0 x 9mm (short)  WP 5.0 x 13mm (tall)

WP 6.5 x 9mm (short)  WP 6.5 x 13mm (tall)
Are the Impression Copings down?
Seated??
IOS Workflow – Phase 1 – Scan Model Alternative (North America)

Clinician & Patient

Laboratory

Restorative Components
Scanned & Ordered

Laboratory

Clinician & Patient

Elos™ Accurate 3D scan bodies placed introrally for IO scanning with TROS® or iTrero®.

3Shape® order for model production

Model manufacturing with implant model analog. Optional - Sulcus manually modified on model.

NobelProcera® ASC and FCZ Abutment Manufacturing

Abutment shipped to lab

Laboratory verifies and finalizes restoration

Clinician integrates final restoration in the patient's mouth

3Shape® order received at 3Shape/NobelProcera® Open Access Laboratory

3Shape® Model Builder software designs model

Implant model scanned on a NobelProcera scanner using CC Abutment Postion Locators.

NobelProcera® ASC and FCZ Abutment designed in NobelProcera software.

rev October 30, 2014
IOS Scan Bodies....
On1™ concept: intraoral scanning of an upper right premolar.

Case courtesy of Dr. Simon Kold, Denmark
Intra Oral Scanning
Temporary Snap Abutment

Basic product presentation
Immediate Temp…Cement option
Simplify the temporization workflow
Temporary Snap Abutment
Snap Temporary Abutment
Snap Temp Abutment
Guidelines for abutment selection

Photographs courtesy of NDT Claus-Peter Schuiz, Baden-Baden, Germany
Guidelines for abutment selection

**Issues to be considered:**

- Implant-abutment connection
- Distance from the implant platform to bone crest
- Intercuspal distance
- Depth of peri-implant soft tissues
- Biotype of the tissue
- Emergence profile
- Shape and contour of the tissue
- Screw-retained/cement-retained
Guidelines for abutment selection

A case study:
Resistance to dislodgement of zirconia copings cemented onto titanium abutments of different heights.

Purpose:
Authors measured the force it takes to dislodge a cemented crown on abutments of various heights.

Results:
- The taller the abutment height the greater the force required to dislodge a cemented crown.
- Study recommends that abutments should be no less than 4mm in height when using a cemented crown.

<table>
<thead>
<tr>
<th>Abutment height:</th>
<th>6.5mm</th>
<th>5.5mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average dislodgement force:</td>
<td>198.09N</td>
<td>124.89N</td>
</tr>
</tbody>
</table>
Prefabricated and individualized abutments

Esthetic Abutment
(titanium, prefabricated)
straight or angled

Procera Esthetic Abutment
(zirconia, prefabricated)
straight or angled

NobelProcera Abutment
(titanium/zirconia, individualized CAD/CAM)
NobelProcera® ASC
the complete posterior solution...

ASC: Abutment from a new angle
Why Angled Screw Channel Abutment?

Before

After
NobelProcera® ASC

taking a closer look.. its more than just an abutment

Zirconia abutment

With screw access hole on the palatal aspect of the abutment

Metal abutment

A: Conical connection implant interface
B: If remove adapter - it has a friction type connection between adapter & abutment

Clinical screw

C: Head of screw – blue in colour
NEW ASC* Zirconia Abutment

- **Restorative flexibility**
  - Anterior: “Esthetics” - ability to place the screw access hole in a position to achieve optimal esthetics (0 -25°)
  - Posterior: “Access” - ability to place the screw access hole more mesially

**Benefit:** **ESTHETICS & ACCESS**
- Clinician now has an esthetic screw retained solution to offer patients – for both anterior & posterior regions

*ASC = Angulated Screw Channel*
NobelProcera® ASC Abutment
its more than just an abutment..

Esthetic challenge overcome using NobelProcera ASC Abutment

Courtesy of Luc & Patrick Rutten
NobelProcera® ASC Abutment
NobelProcera® ASC Abutment

Case courtesy of Dr. Juan Zufia and Sr. Santiago Dalmau
NobelProcera® ASC Abutment

Case courtesy of Dr. Juan Zufia and Sr. Santiago Dalmau
NobelProcera® FCZ Crown
the complete posterior solution...

New

FCZ Crown
AHEAD OF ITS CLASS!
ASC/FCZ
NobelProcera® FCZ Crown
Featuring the ASC interface...

Horizontal space gained

Vertical space gained
NobelProcera® ASC Abutment

Clinical Case: Posterior single molar replacement

Intraoral occlusal view of the inserted restoration prior to closure of the screw access channel.

Definitive restoration. The screw access channel was closed with a ceramic insert. However for simplicity conventional composite resin closure can be applied with excellent long-term success.
NobelProcera® ASC Abutment

Abutment screw insertion showing the angulation at the driver-screw interface. The Omnigrip design grasps the screw during the insertion procedure, allowing secure pick-up and eliminating the risk of dropping the screw during positioning. This provides the clinician with additional safety benefit while working in difficult to reach mandibular and maxillary molar areas.
Really??
Key Product Features

Full Contour/Partial Cutback
On Conical Connection*, Internal Tri-channel, External Hex & MUA

Framework
On Conical Connection*, Internal Tri-channel, External Hex & MUA

Angulated Screw Channel
On Conical Connection

Clinical & Lab Adapters**
For Conical Connection

** Laboratory metal adapters or laboratory screws should NOT be used in a patient.
ASC Bridge…
ASC Bridge...
ASC Bridge...
ASC Bridge…
ASC Bridge...
ASC Bridge…
ASC Bridge...
ASC Bridge…
NobelProcera® ASC
its more than just an adapter..

NEW ASC Metal adapter

- Conical Connection restorative connection*
  - Metal adapter interface now enables CC Zr abutments to be used in posterior region

Benefit:
ESTHETIC POSTERIOR SOLUTION
A fantastic, esthetic screw-retained prosthetic solution for our conical connection implants placed in the both anterior & posterior regions

* NobelProcera ASC Abutments are only for Nobel Biocare Conical Connection implants
Value proposition to Universal Base users

Excellent functionality
Designed for in-lab/chair-side milling as well as press on technique with two margin heights

Peace of mind
Ideal abutment post height
Dual indexing features

Original on original
Secure fit with Nobel Biocare’s precise tolerances
Laser marking confirms original manufacturer

Convenience
Co-pack with the burnout coping

Two margin heights available
Laser-marked
Indexing feature
Burnout coping
ASC Crown and connection…
ASC base without crown...
Has your abutment ever debonded from your crown??
Normal Screw Retained Crown
Anguled SC vs. Regular SC
Universal Ti -Base
Ti Base ran in the oven on a chairside…
Ti-Base in the chairside oven....
NobelProcera® ASC
why quality & testing the system important?

Putting patients at risk if Nobel Biocare restorative components are not used

Ill fitting components causing direct impact on longevity

Almost 10x times higher force at contact points (511 N/mm²)

A small deviation can have detrimental effects
3 Unit Screw Retained Bridge…problems???
Problems....
If you think it doesn’t look right, it probably isn’t.....
NobelProcera® ASC

* NobelProcera ASC Abutments are only for Nobel Biocare Conical Connection implants

NEW ASC Metal adapter
- Conical Connection
- Metal adapter interface now enables CC Zr abutments to be used in posterior region

* NobelProcera ASC Abutments are only for Nobel Biocare Conical Connection implants
NobelProcera® ASC
its more than just a screw..

NEW Omnigrip Screw

- **Important** - where does the screw actually seat?
  - Screw seats in Zirconia body

Clinical screw

Zirconia abutment

Clinical screw

ASC adapter
NobelProcera® ASC
its more than just a screw..

NEW Omnigrip Concept

- Omnigrip Tooling – the Omnigrip screw + screwdriver and it’s unique & patented connection is what makes this concept truly special!!

Benefit
CONFIDENCE: exceptional pick-up function

EASE OF USE: flexibility & handling
(plus blue color coding for easy identification)

It has to be tried to be believed!!
Check the screws and your drivers for use???
NobelProcera ASC abutment brings peace of mind

Clinical issues caused by excess cement

Implant cement can act like a foreign body in the mouth,

Residual cement in the mucosal margin affects the patient’s soft tissue eg soft-tissue hyperplasia or recession and may even lead to bone loss

Even the most diligent of clinicians may sometimes miss residual sub-mucosal cement in implant cases.

Sometimes, it may not immediately be apparent that there is residual cement – and the effects can be delayed for years after cementation.

For that reason, due to known issues related to cement clinicians are recommending to prescribe screw retained implant restorations over cement retained
Bone loss caused by excess cement

"The cause of this inflammation was revealed upon radiographic examination"

"Cement was clearly visible on a periapical film and was the likely culprit"

"We were fortunate that the cement was evident on the radiograph. But if the excess had been on the buccal or lingual, it may not have been seen"
NobelProcera ASC abutment brings peace of mind

Bone loss caused by excess cement

Case 3

Case 4

Image obtained through Internet research
Mucosal recession caused by excess cement

Case 5

Incomplete removal of cement may result in peri-implant inflammation, soft tissue swelling, soreness, bleeding and resorption of peri-implant bone.
Cement??
Understand abutment selection
Simple molar implant??
Simple Molar Implant – confirm with X-ray
Simple Molar Implant
Simple Molar Implant – cleaned and polished.
NobelProcera® ASC Abutment
its more than just an abutment..

Omnigrip Tooling
NobelProcera® ASC Abutment
its more than just an abutment..

Omnigrip Screwdriver Machine

Omnigrip Screwdriver Manual

Omnigrip Screws
NobelProcera® UniGrip Interface

- UniGrip Screwdriver Machine
  - Screwdriver Machine UniGrip 20,25,30,35 mm

- UniGrip Screwdriver Manual
  - Screwdriver Manual UniGrip 20,28,36 mm

- UniGrip Screws
  - Abutment Screw
    - Conical Connection NP
  - Abutment Screw
    - Conical Connection RP
Solutions to avoid complications...
Managing soft tissue with the On1™ concept

- Optimized healing of the soft tissue
- Simplification of restorative workflow
- Ease of use with pre-mounted handle
- Gain peace of mind
- Restorative flexibility
- Digital workflow available
Optimized healing of the soft tissue

- Soft tissue remains undisturbed after placement of the implant and the base.
- The base remains in position while the healing, temporary and final abutments are placed.
- Working on tissue level leaves the epithelial seal untouched.
Simplification of restorative workflow

The On1 base is placed at the time of surgery. Delivered with handle for easy placement.

In a delayed loading protocol, the surgeon places the healing cap onto the On1 Base at the time of surgery.

In an immediate loading protocol, the surgeon places the temporary abutment onto the On1 base at the time of surgery. Delivered with handle for easy placement.

The restorative dentist can choose the restoration and will work on tissue level. The On1 base stays in place during this procedure.
Ease of use with pre-mounted handle

On1 Base, IOS Healing Cap and Temporary Abutment are packed and pre-mounted with a single use PEEK handle, simplifying placement in the patient's mouth.
Gaining peace of mind

Predictability

- Restoration done at tissue level leaving the soft tissue undisturbed.
- More accessible for the clinician to work on.
- All components directly delivered to the clinician are sterile.

Original products

- Certainty of use of original products
- Proven system performance
- Warranty
- Option of screw-retained and cement-retained restorations.
Restorative flexibility with the On1™ concept

- Cement-retained solutions
  - Nobel Biocare Esthetic Abutment Titanium
  - Nobel Biocare Esthetic Abutment Zirconia
- Screw-retained solution
  - Nobel Biocare Universal Base Abutment
- Base options: 1.75 mm or 2.5 mm collar height
  - Exchangeable depending on soft tissue shape
- Closed or open impression taking possible
Going digital with the On1™ IOS Healing Cap

2 in 1
Healing Cap and Scan Abutment in one.

Scanning, locating, healing
All of it, without removing the Healing Cap

Flexibility
Made of adjustable PEEK material

Various heights available
On1™ clinical case

On1 Base placed at time of surgery

On1 Impression Coping

On1 Healing Cap

On1 Base Replica

On1 Universal Abutment

Finalized restoration

Clinical case and photographs courtesy of Dr. Bernard Touati, France
A NobelReplace CC implant is placed slightly below the residual bone crest in order to maintain a soft tissue thickness of 3 mm above the implant platform. The torque is measured to 35 Ncm.

Case courtesy of Dr. Giacomo Fabbri, Italy
An On1 Base is placed on the implant and torqued to 35 Ncm.

Case courtesy of Dr. Giacomo Fabbri, Italy
Intraoral situation eight weeks after the implant surgery. The soft tissue shows good healing after removal of the On1 Healing Cap.

Case courtesy of Dr. Giacomo Fabbri, Italy
On1™ – a new restorative concept - Product scope

- For conical connection implants
- On1 Base 1.75mm and 2.5mm (pre-mounted with handle)
- On1 Healing Cap 1.5 and 2.5 mm
- On1 IOS Healing Cap 4/5/6mm (pre-mounted with handle)
- On1 Temporary Abutment 1.5mm (pre-mounted with handle)
- On1 Universal Abutment 0.3mm and 1.25mm (co-packed with burn out coping)
- On1 Esthetic Abutment 0.3mm Titanium and Zirconia
- On1 Impression Copings
- Various components, replica and restorative screws

Disclaimer: Some products may not be regulatory cleared/released for sale in all markets. Please contact the local Nobel Biocare sales office for current product assortment and availability.
NobelPearl

A splash of life

NobelPearl

is a 100% metal-free, two-piece implant solution with cement-free internal connection
NobelPearl

Why NobelPearl?

It’s ceramic
- Soft-tissue friendly
- An alternative to titanium

It’s unique
- 100 % metal-free
- Cement-free internal connection
- Two-piece screw-retained
NobelPearl
Overview of key features

**Soft-tissue friendly**
The material properties of NobelPearl's ceramic are conducive to esthetic excellence.
- Natural esthetics
- Soft-tissue attachment
- Natural harmony with soft tissue
- Low plaque affinity
- Screw-retained prosthetics available

**Peace of mind**
The implant solution that provides proven strength for a successful start in ceramic implantology.
- Carbon fiber-reinforced VICARBO® screw
- Milled from strong zirconia (ATZ*)
- Sand-blasted & acid-etched hydrophilic surface

NobelPearl follows a wide range of well-established workflows for two-piece implants.
- Two-piece screw retained
- Cement-free internal connection
- Tapered implant body & drill protocol
- Integrated in digital workflow
- Broad indication range

* Alumina Toughened Zirconia (ATZ)
NobelPearl
Metal-free alternative to titanium – To meet patients’ needs

High performance metal-free screw
The innovative metal-free VICARBO® screw is made of carbon fiber-reinforced polymer and designed for a strong ceramic-to-ceramic connection.
✓ Metal-free – no metal inserts or metal abutment screws
✓ Cement-free* – avoiding the risks of intraoral cementation

* Cement-free internal connection, screw-retained prosthetics available

✓ Opportunity for clinicians to differentiate their practice by offering an innovative metal-free, two-piece ceramic implant solution.
✓ Allows clinicians to meet their patients’ specific demands and achieve natural esthetics.
NobelPearl

**Soft tissue friendly** – for esthetic excellence

**Natural esthetics**
NobelPearl is designed to support a natural soft-tissue appearance. Its white material is especially beneficial in patients with a thin gingival biotype.(1)

**Low plaque**
Zirconia has demonstrated low plaque affinity.(2,4,5)

**Soft-tissue attachment**
Designed for excellent soft-tissue attachment and low inflammatory response.(2)

**Natural harmony with soft tissue**
Zirconia may promote microcirculatory dynamics in peri-implant mucosa that are comparable to those around natural teeth.(3)

The Inter-X internal connection is specifically designed for ceramic implants.

While the ceramic absorbs compressive forces, the VICARBO® screw made of carbon fiber-reinforced PEEK withstands tensile forces thanks to its continuous longitudinal carbon fibers.

The abutment’s simple placement and secure seating is enabled by the connection’s high-precision geometry.

The slightly beveled contact surface of the implant platform is designed to facilitate the centering of the prosthetic components while the four interlocks prevent abutment rotation within the implant.

The interlocks remain unloaded.
NobelPearl
Portfolio overview

**Implants:**
RP Ø4.2 and WP Ø5.5mm, L 8-14mm

**Abutments:**
Straight, Angled, Ceramic Base, Temp.

**Components:**
Healing abutments, impression copings, position locator, lab comp.

**Digital:**
NobelClinicial / NobelGuide (pilot drilling) / DTX Studio
NobelPearl Implant portfolio – Two platform sizes available

NobelPearl Tapered (incl. Cover Screw)

8 mm (+1.6 mm collar)
10 mm (+1.6 mm collar)
12 mm (+1.6 mm collar)
14 mm (+1.6 mm collar)

RP Ø 4.2 mm
WP Ø 5.5 mm

Material Implant: Zirconia (ATZ) (sterile)
NobelProcera® ASC Abutment
its more than just an abutment..

Any questions?