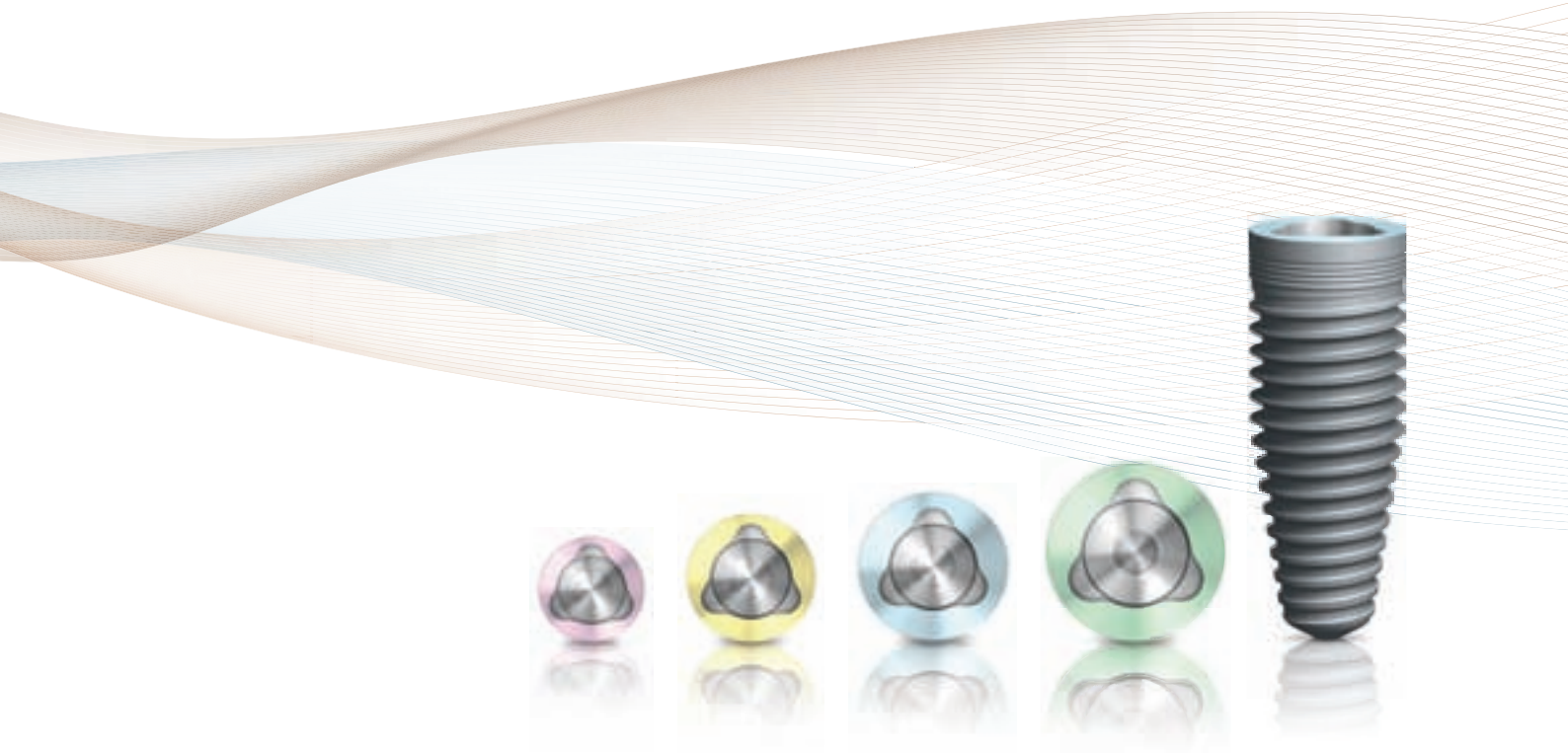
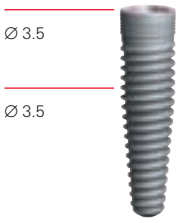
NobelReplace™ Tapered

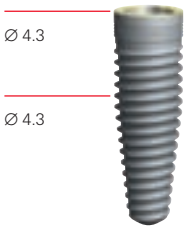
THE WORLD'S MOST USED IMPLANT SYSTEM



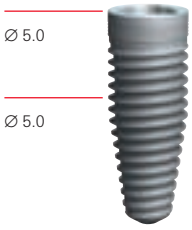
At a glance.



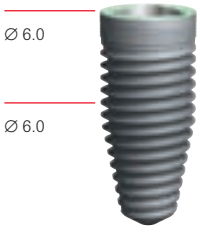
NobelReplace™ Tapered NP
Ø 3.5 mm x 8, 10, 13 and 16 mm



NobelReplace™ Tapered RP
Ø 4.3 mm x 8, 10, 13 and 16 mm



NobelReplace™ Tapered WP
Ø 5.0 mm x 8, 10, 13 and 16 mm



NobelReplace™ Tapered 6.0
Ø 6.0 mm x 8, 10, 13 and 16 mm

System highlights	Color-coded system Tri-channel internal connection Step-by-step drilling protocols
Prosthetic flexibility	Standard and individualized zirconia and titanium abutments Individualized implant-level partial and full-arch bridges in zirconia and titanium Temporary solutions for single and multiple restorations
Prosthetic connection	Tri-channel internal 3 positions
Clinical situations	All indications One- and two-stage surgical protocols Immediate loading/temporization Diagnosis, planning, surgery and restoration with NobelGuide™
Platforms	Narrow (NP) – Ø 3.5 mm Regular (RP) – Ø 4.3 mm Wide (WP) – Ø 5.0 mm 6.0 – Ø 6.0 mm
Lengths	8 mm, 10 mm, 13 mm, 16 mm
Surface	TiUnite® – Titanium oxide – Moderately rough – Pores in the low micrometer range Groovy™ – Macroscopic grooves on implant threads and collar
Material	Commercially pure (c.p.) Grade 4 cold-worked titanium 860 MPa tensile strength

NobelReplace™ Tapered – the world's most used implant system.*

The versatility, ease-of-use and predictability of NobelReplace Tapered have made it the most widely used implant design in the world.[1]

Preferred implant system for surgery
NobelReplace Tapered is a general-use, two-piece implant system that performs well in soft and hard bone, one- and two-stage surgical procedures. The tapered implant body design consistently delivers optimal stability.[38,39] Whether clinicians are just starting or are experienced implant users, they will benefit from a system that is unique in flexibility and breadth of application – a system that grows according to their needs and requirements.

Preferred implant system for prosthetics
NobelReplace Tapered offers a broad range of standardized and individualized (NobelProcera) prosthetic assortments, providing precision of fit and excellent esthetics. It is easy to understand why it is a favorite among surgeons and restorative clinicians.

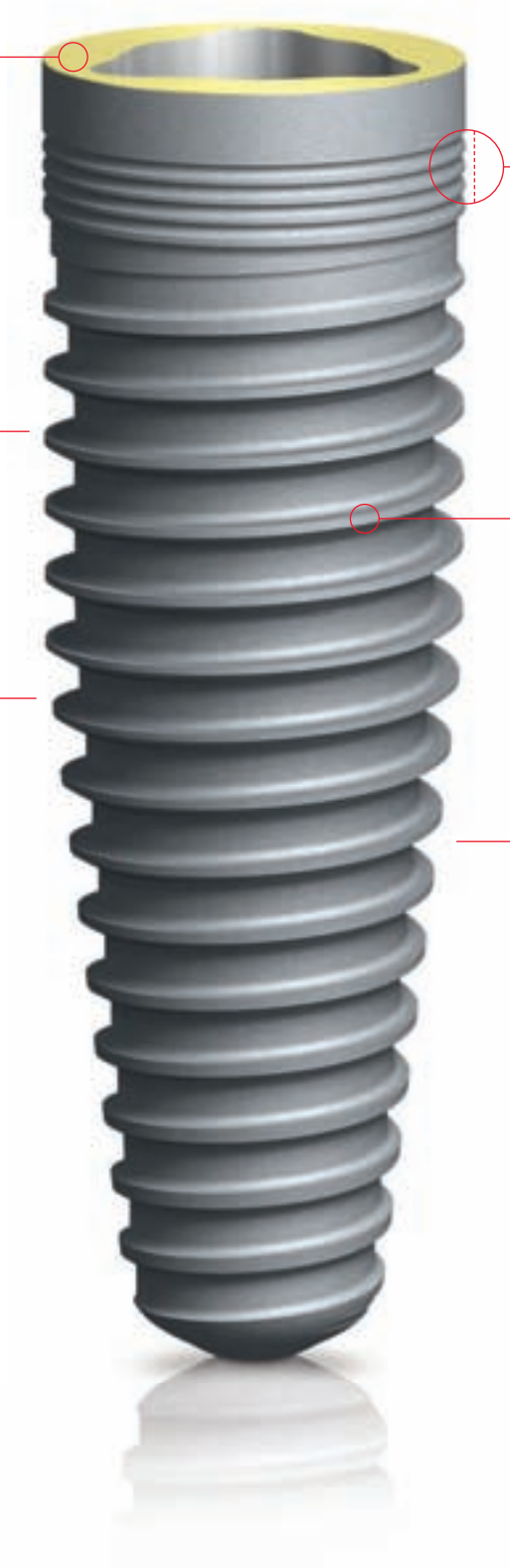
* Source: Millennium Research Group 2008.

– **Internal tri-channel connection**
for accurate and secure prosthetic restorations

– **Color-coded system**
for accurate and fast component identification and ease-of-use

– **Step-by-step drilling protocol**
for predictable surgical procedures

– **Implant design**
that mimics the shape of a natural tooth



Prostethic connection design
Tri-channel internal connection: tactile and direct feel when positioning the prosthetic components. Color-coding: easy and fast identification of prosthetic components.

Coronal design
Collar designed for soft and hard tissue integration.

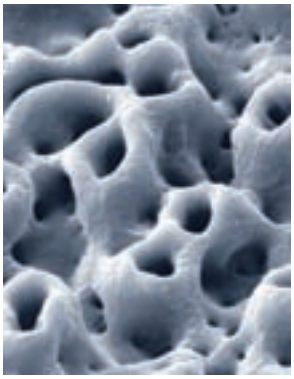
Standardized tapered drilling protocol
Designed to offer high predicability.

Groovy™
Bone forms faster within the grooves[4], compared to implant without grooves.

Implant body design
Apical part is tapered and coronal part is parallel: allows for placement in both extraction sockets and healed sites.

TiUnite®
Documented to enhance osseo-integration[2], thereby increasing the predictability of implant treatment.

NobelReplace™ Tapered – easy to use.



Early wound healing in bone with TiUnite is characterized by its osteo-conductive properties. The latter means that bone is formed and deposited by contact osteogenesis directly on as well as along the moderately rough, porous surface.

Indication-based platforms for versatility
NobelReplace Tapered is available in 4 different platform diameters:

Narrow (NP) – for situations of limited inter-dental space and insufficient alveolar bone to support a regular platform implant.

Regular (RP) – for single anterior tooth replacement and full-arch restorative solutions.

Wide (WP) and 6.0 – for wide ridges and the posterior region.

Standardized tapered drilling protocol
The standardized step-by-step tapered drilling protocol, developed for NobelReplace Tapered, simplifies implant insertion site preparation by minimizing the number of drilling steps required.

Prosthetic connection design
The tri-channel internal connection allows a tactile and direct feel when positioning the prosthetic components.

Color-coded system for ease-of-use
All components of the NobelReplace Tapered implant system are color-coded by implant diameter (i.e., platform).

Color-coding is applied to implants, drills, screw-taps, implant drivers, cover screws and abutments. Surgical kits are also color-coded for simpler identification and use.

TiUnite® (oxidized surface)
NobelReplace Tapered comes with TiUnite, a highly crystalline and phosphate-enriched titanium oxide surface that is unique to Nobel Biocare. TiUnite is a patented Nobel Biocare biomaterial that has been documented to enhance osseointegration, and positively influence soft and hard tissue interfaces.[2]

A five-year study, released in 2007, reviewed immediately-loaded TiUnite implants in regions of soft bone. The study demonstrated a cumulative survival rate of 97.1% and supports the long-term performance of TiUnite.[3]

Groovy™ (macroscopic grooves)
Macroscopic surface grooves, or Groovy, are another Nobel Biocare innovation, which were developed to enhance the functionality of the TiUnite surface. In vivo testing has demonstrated that bone forms faster within the grooves on an implant surface, compared to implants without grooves.[4]

Implant body design
The implant design mimics the shape of natural tooth roots. The apical part is tapered and the coronal part is parallel. This allows placement of the implant in both extraction sockets and healed sites.

The tapered design allows for implant placement along the loading direction thus reducing stresses due to off-axis loading.

Coronal design
The coronal region of NobelReplace Tapered features TiUnite "all the way up" and Groovy, and was designed to improve the soft and hard tissue interfaces.

Starting users – the ideal implant to start with.

For clinicians just starting to place implants, the NobelReplace Tapered implant system is a solid foundation upon which they can build a thriving implant practice.

Color-coded system
All the components of NobelReplace Tapered are color-coded; this yields individual components that are easily identifiable during placement and restoration. The color-coding of the surgical kits helps to remove the guesswork about which drill should be used during the surgical procedure. Likewise, prosthetic components are color-coded for ease of restoration.

Step-by-step drilling protocol
The standardized step-by-step drilling protocol supports both flap and flapless surgical procedures, as well as immediate and/or delayed loading of restorations. Due to its versatility and simplified procedures, NobelReplace Tapered is often the only implant system many users continue to use in their practices.

Prosthetic versatility
New alternatives for profitability and satisfying patient's situations become available for general practitioners who adopt NobelReplace Tapered implants into their offering.

Instead of relying solely on conventional crown, bridge and denture work, dental professionals are able to offer their patients implant-supported prostheses, in situations where conventional dentistry is insufficient in restoring dental functionality.

Moreover, because it has only three positions, starting users find restoring the tri-channel internal connection very easy.

Experienced users – the implant for most indications.

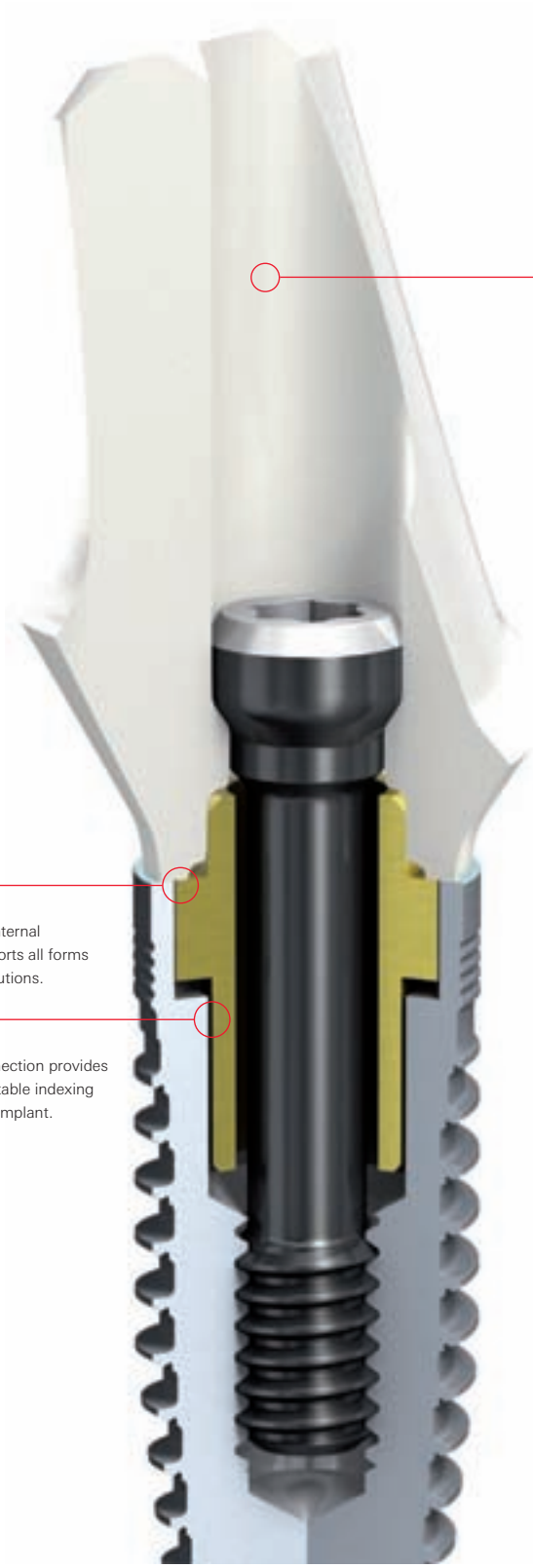
For experienced and advanced users, NobelReplace Tapered offers an all-around implant system that supports their entire implant offering.

Treatment predictability
Its ease-of-use, simplified drilling protocols, and consistent restorative outcomes make NobelReplace Tapered the implant of choice for the majority of the situations clinicians encounter daily.

The tapered implant design leads to optimal initial stability that provides predictable osseointegration results. In addition to its general use, NobelReplace Tapered can also be placed in more demanding indications, such as: between converging roots of adjacent teeth; anterior to the mesial wall of the maxillary sinus.

Clinical flexibility
As stated above, NobelReplace Tapered satisfies a broad range of indications: from single-tooth to fully edentulous restorations, as well as temporary solutions. Due to its tapered design, NobelReplace Tapered is also ideal for immediate placement in extraction sites.

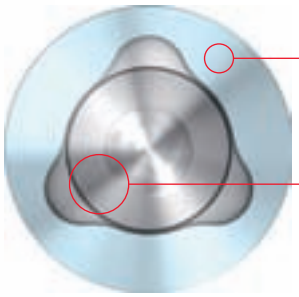
Prosthetic versatility
In retentive solutions, prosthetics on NobelReplace Tapered provide esthetics and functionality. The tri-channel connection supports all forms of restorative solutions and secure accurate prosthetic positioning. For all indications, Nobel Biocare produces implant-supported restorations, individualized prosthetics with its CAD/CAM dentistry solution NobelProcera. From customized abutments to full-arch implant level bridges and overdenture solutions, NobelProcera provides industrialized precision of fit, biocompatibility, and beautiful natural-looking esthetics.



NobelProcera™ Abutment Zirconia
CAD/CAM designed to meet the clinical requirements of the patient.

Versatile
The tri-channel internal connection supports all forms of restorative solutions.

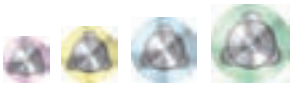
Accurate
The internal connection provides tactile and repeatable indexing of abutments to implant.



Color-coded system
For accurate and fast component identification.

Tri-channel internal connection
For secure and accurate prosthetic positioning.

Tri-channel internal connection for accurate and secure restorations.



NP RP WP 6.0

Color-coded system

NP	Ø 3.5 mm
RP	Ø 4.3 mm
WP	Ø 5.0 mm
6.0	Ø 6.0 mm

NobelReplace Tapered is indicated for a variety of indications. In turn, this versatility necessitated that NobelReplace has the restorative flexibility to enable the clinician to choose prosthetics that meet the requirements of a particular patient. To satisfy this flexibility, a tri-channel internal connection was developed for NobelReplace Tapered.

Accurate prosthetic positioning

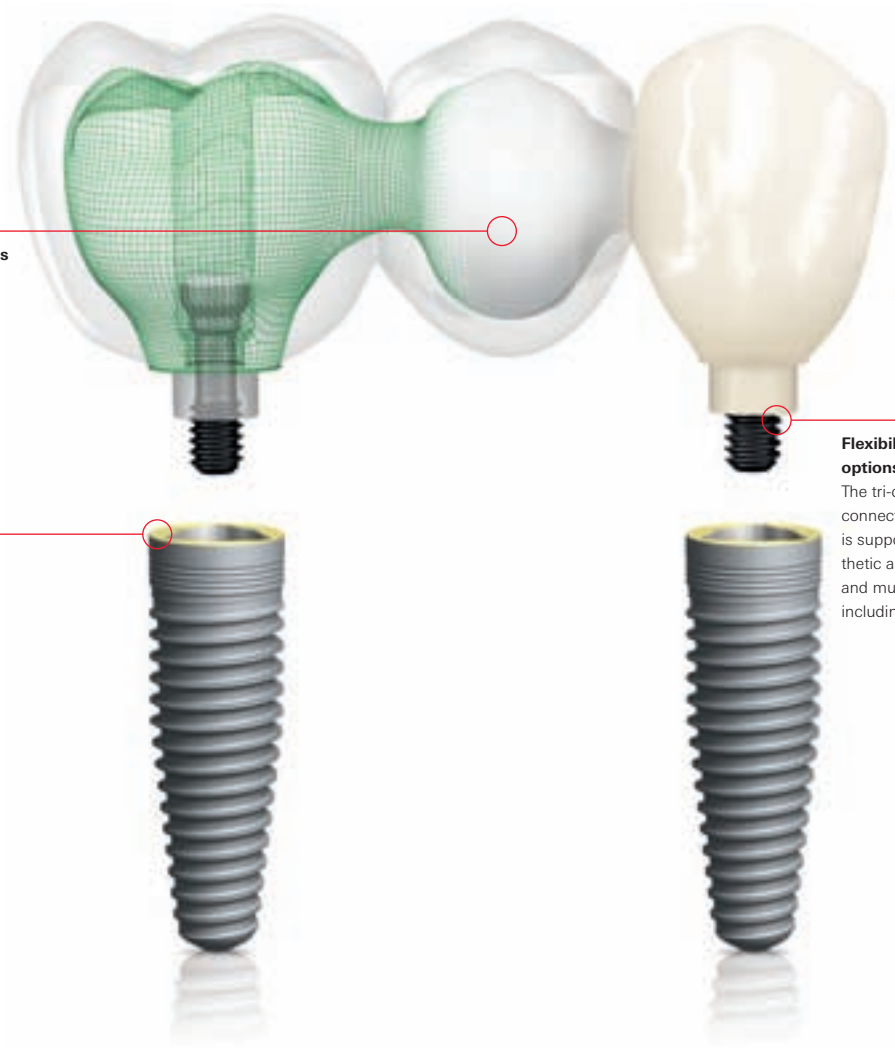
The internal connection of NobelReplace Tapered has three channels that provide accurate and repeatable indexing of abutment to implant, in 120° increments. When seating an abutment, a positive lock is immediately noticeable when the abutment is situated correctly in the connection. Once locked, the internal connection resists rotation.

Secure abutment placement

The three locking channels guide the placement of abutments. This design aides in the correct and secure placement of abutments in locations where poor visibility and limited inter-occlusal space may compromise the clinician's ability to manipulate the abutment.

Prosthetic versatility

The tri-channel internal connection supports all forms of restorative solutions. This prosthetic flexibility enables clinicians to grow their experience in restoring implants. From single-tooth to fixed partial denture restorations, from screw- or cement-retained solutions to customized NobelProcera Abutments in zirconia and titanium or pre-manufactured NobelProcera Esthetic Abutments; full-arch fixed, such as a NobelProcera Implant Bridge Zirconia, attached directly onto the implant or to abutments; and removable solutions attached to bar/bar abutment or Locator attachments.



Individualized prosthetic options with NobelProcera™
CAD/CAM designed to meet the clinical requirements.

Ease-of-use tri-channel internal connection
Supports all forms of restorative solutions and secures accurate prosthetic positioning.

Flexibility in restorative options
The tri-channel internal connection is easy to use and is supported by a broad prosthetic assortment for single and multiple unit restorations including temporary solutions.

NobelReplace™ Tapered – for all indications and users.

NobelReplace Tapered is an implant system that covers a broad range of applications and user skill levels – from soft to dense bone, and starting to experienced/advanced users.

Optimal initial stability
Tapered implants are shaped following the form of natural teeth. This design provides predictable osseointegration results and delivers optimal initial stability. The original tapered implant design (Replace) was introduced in 1997. Many substantial improvements have been made since that time, leading to the currently available NobelReplace Tapered Groovy implant, which was introduced to the market in 2005.

Step-by-step drilling protocol
The standardized drilling protocol developed for NobelReplace Tapered provides dental professionals with a step-by-step approach for preparing the implant insertion site. The protocol works in all bone types and supports all surgical modalities: one- and two-stage, flapless and flapped, and immediate and delayed loading.

Flexibility in restorative options
Due to the broad prosthetic assortment and ease-of-use of the tri-channel internal connection, NobelReplace Tapered is incredibly flexible with regard to restorative options. Both standard and individualized (NobelProcera) prosthetic options are available for use with NobelReplace Tapered, including temporary solutions for single and multiple unit restorations (see pages 12–15).

In practical terms, the system grows to meet the restorative needs of both clinicians and their patients: from basic implant restorations, such as two mandibular implants with an overdenture and four implants with fixed prosthetic, to advanced single-tooth anterior mandible restorations.

Complete prosthetic flexibility.

Individualized crowns and bridges

NobelProcera™ Crown
Alumina and Zirconia

NobelProcera™ Bridge
Alumina and Zirconia

Individualized abutments

Standard abutments

LOCATOR®

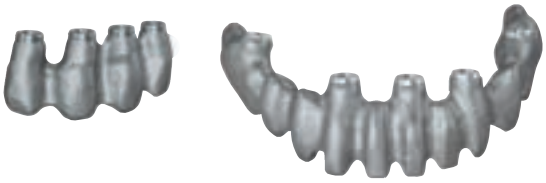
Ball
Abutment

Gold
Abutment Bar

GoldAdapt

Healing and temporary components

NobelProcera™
Implant Bridge Zirconia



NobelProcera™
Implant Bridge Titanium

NobelProcera™
Abutment Zirconia

NobelProcera™
Abutment Titanium

0°/17°/30°
Multi-unit Abutments™

Snappy
Abutment™

Narrow Profile
Abutment

Esthetic
Abutment™

NobelProcera™
Esthetic Abutment

Cover
Screw

Healing Abutment
(single and bridge)

QuickTemp™
Abutment Conical

Immediate Temporary
Abutment

Temporary Abutment
(non-engaging)

NobelProcera™ Crown
Alumina and Zirconia

NobelProcera™ Bridge
Alumina and Zirconia

NobelProcera™
Abutment Zirconia

NobelProcera™
Abutment Titanium

Flexibility in individualized restorative options.

For individualized restorative options, a comprehensive prosthetic range is available for NobelReplace Tapered – designed to work in harmony with the versatility of this implant system and its tri-channel internal connection.

Individualized abutments
As a perfect complement to its esthetic standard components, NobelProcera™ offers individualized prosthetics, such as NobelProcera Abutment Zirconia and Titanium.

NobelProcera abutments can be designed to practically any angle, taper, finish line, height, width, and cross-sectional form, thereby creating a natural tooth form and emergence profile.

NobelProcera Esthetic Abutment Selection Kits are also available. Abutments in these kits come in a range of predetermined sizes and shapes, based on thousands of existing restoration designs. These kits make selecting the appropriate abutment convenient and easy.

Individualized crowns and bridges
NobelProcera produces individualized crowns and bridges, and NobelProcera Implant Bridge Zirconia and Titanium.

Single crowns, multi-unit bridges, even full-ceramic restorations – all forms of final esthetics can be used with NobelReplace Tapered. For high esthetics, all-ceramic NobelProcera crowns[5], bridges and overdentures are optimal.

NobelProcera metal-free materials – alumina and zirconia – provide natural-looking restorations and remove the possibility of unsightly darkening at the gum line. Simultaneously, their high biocompatibility eliminates potential allergic reactions and promotes long-term soft tissue stability.[6–11]

Each NobelProcera Abutment and Implant Bridge is individually designed using the latest 3D computer-aided design software (CAD), and then milled from high-strength zirconia or titanium in a computer-assisted manufacturing (CAM) process.[12–14]

Flexibility in standardized restorative options.

Snappy Abutment™

The standardized prosthetic assortment for NobelReplace Tapered provides restorative clinicians a comprehensive selection of abutments and components, which facilitate all surgical and restorative situations.

Standard abutments
In situations where standard crown and bridge techniques are desired – from single-tooth replacements to full-arch restorations – standard abutments can be used. Included in this assortment is the Snappy Abutment, which is ideal for posterior, partially edentulous, and simple implant restorations. Its short profile also means there is little or no need to make any height modifications.

Healing and temporary components
When a particular clinical situation does not warrant immediate temporization, clinicians can use healing abutments in one-stage surgical procedures, and cover screws in two-stage surgical procedures. Healing abutments are available for use in single and multiple (bridge) restorations.

When the definitive abutment is not chosen at time of surgery, but a quick and convenient chair-side temporization is desired, there exist a number of temporary solutions. Included here are the Immediate Temporary Abutment and QuickTemp Abutment – both come with a pre-made plastic coping for use in fabricating a temporary crown or bridge.

Abutment and component screws
All abutment and component screws feature a Unigrip internal fitting, which tolerates high torque capacity and offers a screw carrying action for ease-of-use.

Additionally, screws have been coated with a friction-reducing surface – TorqTite – to ensure a long-term stable screw joint and help remove the incidence of screw-loosening.

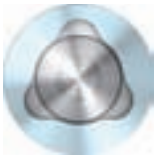
Immediate Temporary Abutment

Healing Abutment RP

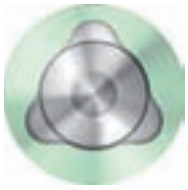
TorqTite

NP

RP



WP



6.0

Prosthetic Kit*

Surgery Kit*

* For simpler viewing, components have been removed from the kits.

Prosthetic and Surgery Kits – simplicity and clinical efficiency.

Color-coded surgery kit
The surgical kits for NobelReplace Tapered have been designed for simplicity and clinical efficiency. Kit layout is completely color-coded, and the drilling sequence is numbered for easy-to-follow protocols. Kits include one set of diamond-coated reusable drills for placing all diameters of NobelReplace Tapered. For implant placement, the NobelReplace Implant Driver improves visibility and versatility during implant insertion by eliminating the need for insertion mounts and several other instruments.

– Color-coded for easier component identification
– Each instrument has a clearly marked storage position
– Autoclave compatible
– Manufactured of anti-slip material for ease of handling

One common prosthetic system for maximum versatility
NobelReplace Tapered implants share a common versatile, yet simplified, line of color-coded prosthetic components for every function and esthetic need. Color-coding makes matching components easier, which facilitates communication within the dental team and simplifies ordering processes. Options are available for cement- and screw-retained restorations, and ball-, bar- or Locator-retained overdentures.

The ultimate esthetic solution
Today's patients expect excellent esthetic results from all types of restorations, including implants. Nobel Biocare offers two lines of restorative solutions for recreating missing dentition using implants: Standardized and Individualized abutments.

Standardized Esthetic Abutment Selection Kits are based on thousands of existing restoration designs. They come in a range of prefabricated sizes and shapes, thereby making the abutment selection process extremely convenient and easy. The abutments in these kits are also color-coded to match the particular NobelReplace Tapered platform used in the restoration.
Individualized NobelProcera Abutments offer the ultimate esthetic solutions.
All NobelProcera abutments, available in zirconia or titanium, are custom-designed in virtually any shape in order to create the most natural form and emergence profile.
For more information on NobelReplace Tapered Prosthetic Flexibility, see pages 12–15.

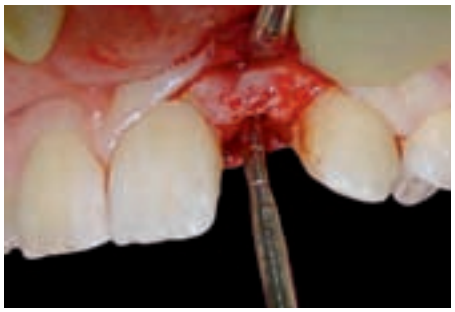
NobelReplace™ Tapered – excellent results.

Single tooth restoration
Young female in good overall health, non-smoker, with no parafunctional habits, with a persistent deciduous lateral incisor.

Intraoperative x-ray shows the narrow space conditions.

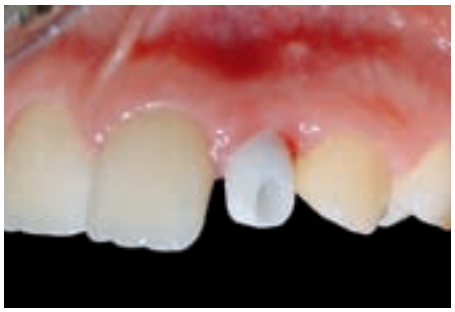
Control x-ray after two years, no bone loss and stable gingival conditions resulting in good esthetics.

Case courtesy of Dr Oliver Hugo (Germany).



Diagnosis
Missing lateral central incisor, limited space to adjacent teeth after extraction of the persistent deciduous lateral incisor and finalized Orthodontic treatment.

Treatment
Insertion of a NobelReplace Tapered NP implant, intraoperative x-ray shows the narrow space conditions, immediate loading with a temporary resin crown.



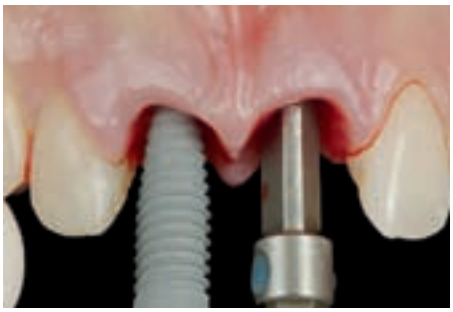
Products used
1 NobelReplace Tapered NP.
1 NobelProcera Abutment Zirconia.
1 NobelProcera Crown Alumina.

Results
Excellent esthetics and soft tissue response shortly after final prosthetic installed.

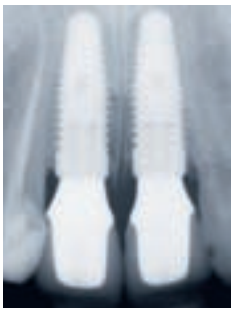
Multiple teeth restoration
Young female, came to clinic because of trauma to central incisors.

Diagnosis
Central incisors tooth/root fractures.

11 and 21 tooth/root fractures.



Atraumatic tooth extraction #11 and #21
Flapless immediate implant placement
2 NobelReplace Tapered, WP.



Case courtesy of Iñaki Gamborena (Spain).

Products used
2 NobelProcera Abutment Zirconia.
2 NobelReplace Tapered WP.
2 NobelProcera Crown Alumina.

Results
2 NobelProcera Crown Alumina (Graft for soft tissue thickness).

NobelReplace™ Tapered – clinicians confirm efficacy.

Dr Jack Hahn, DDS
Private practice limited to placement and restoration of dental implants, Cosmetic and Implant Dental Center of Cincinnati, Cincinnati, Ohio.

Dr Oliver Hugo, DDS, DMD
Joint general practice in Schweinfurt, Germany, and lecturer in implantology and ceramics.

Dr Bernard Touati, DDS, MS
Private practice in Paris and Visiting Professor with Hadassah Faculty of Dental Medicine, Jerusalem, Israel.

Dr Othman Shibly, DDS
Private practice limited to periodontology and implants, Clinical Assistant Professor at State University of New York, Buffalo, NY.

"I've placed over 5000 Replace implants with a success rate of approximately 97%. I especially like the tri-channel internal connection. To me, it makes the restoration process simple; you know the exact position because it can be only in one of three positions."

Dr Jack Hahn

"Besides increased primary stability, NobelReplace Tapered offers advantages in narrow spaces, due to its very slender tip. This design helps eliminate the danger of damaging the neighboring teeth or the buccal perforation."

Dr Oliver Hugo

"NobelReplace Tapered offers me numerous prosthetic options to fulfill my esthetic and biological expectations. Moreover, positioning of prosthetic components is unequivocal: no radiographic control is required and screw loosening almost never occurs."

Dr Bernard Touati

"NobelReplace Tapered is a unique implant that is easy to use. Its design and associated surgical kit have given me the opportunity to place the implant in relatively shorter times than any other system without compromising the strength of its initial stability."

Dr Othman Shibly

NobelGuide™ – digital precision for all indications.

Powerful indication-based diagnosis and treatment-planning platform.

NobelGuide is a complete treatment concept for planning and placing dental implants, developed to work in harmony with the requirements of the future prosthetic restoration. NobelGuide is the perfect partner – assisting the entire team in making the appropriate treatment decisions and executing the planned result with high predictability. The digital integration of a conventional diagnostic tooth setup and full 3D view of the patient's anatomy in the software offer a profound basis for evaluating and defining implant positions for long-term success.[40–42]

For all indications
NobelGuide is intended for all indications – from patients missing a single tooth to totally edentulous cases. Functional, esthetic and biomechanical prosthetic considerations are optimized during the implant treatment planning phase. In fact, dental professionals can decide all elements of the treatment path, including the stage of implant loading (immediate or delayed loading), far in advance of the surgical procedure.[43]

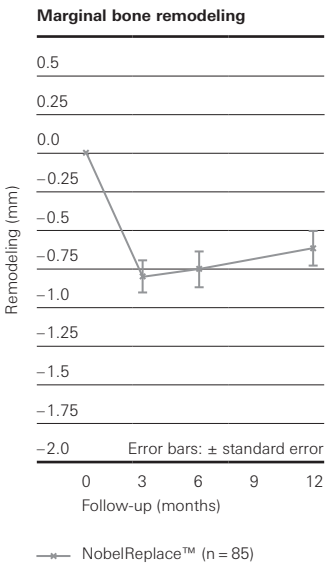
Prosthetic-driven planning
The NobelGuide workflow benefits from a prosthetic-driven, backwards-planning approach. Based on the proposed final restoration, and a clinically evaluated tooth setup, a radiographic guide is generated. This radiographic guide serves as a template for attaining the expected function and esthetics of the final restoration.

Integrated complete supply chain
Based on the planning, a surgical template is automatically designed and ordered via the Internet from a NobelProcera™ production facility. The surgical template is produced with consistent quality and shipped back to the dental professional within a few working days. In the same order, implants, anchor pins to secure the template, drills and prosthetic components can be included.

Minimally invasive
The surgical template guides all implant treatment steps from drilling to implant insertion, and allows for safe flapless surgical protocols, which help minimize patient discomfort as well as pain and swelling. NobelReplace is fully compatible with the surgical template – all specific NobelReplace drills (including Twist drill 2 mm) are designed to provide internal irrigation during surgery.

Safe and predictable treatment
Careful diagnostics, optimized assessment of bone and prosthetic considerations, allow for alignment of the entire treatment team, including the dental lab, and clear communication with the patient – all of which lead to a treatment that is optimized for safety and meeting the high esthetic demands of the patient.

The NobelGuide™ process.



Scientific research.

Science first

Nobel Biocare builds upon the scientific principles of Professor P-I Brånemark and bases all of its innovations on solid scientific research and evidence, which is backed by sound clinical experience.

NobelReplace™ Tapered Groovy

NobelReplace Tapered Groovy, introduced in June 2005, shares the same implant body as Replace Select Tapered, but features TiUnite on the entire surface of the implant, and Groovy on the threads and collar. A number of clinical studies on NobelReplace Tapered Groovy are ongoing and manuscripts are being prepared for submission.[15–18]

Ongoing research

Nobel Biocare is using NobelReplace Tapered as the control in a multi-center clinical study to validate the success, soft tissue maintenance and bone remodeling over time of a novel tapered implant design.[18]

The five-year randomized controlled prospective study is examining implants in both anterior and posterior regions of the maxilla and mandible. All implants placed were subjected to immediate temporization (i.e., patients received a tooth-like restoration within 24 hours after implant placement). Twelve centers, 177 patients, and 325 implants are included in the study. Patients were consecutively included (i.e., centers were not able to "pick and choose" patients). Of the 325 total implants, 126 were NobelReplace Tapered.

All implants were placed in healed sites (at least six months after extraction). No major bone augmentation at implant placement was permitted; only minor augmentation to cover exposed threads or interproximal/buccal grafting in deficient sites. The one-year cumulative survival rate for NobelReplace Tapered, placed in all sites and subjected to immediate temporization, was 97.6 %; marginal bone remodeling, averaged – 0.6 mm (see figure to left).

The papilla index improved over time in NobelReplace Tapered and novel implant sites. Soft tissue variables, plaque and peri-implant mucosa, were stable over time for both implant types.

Replace®

Replace External Hex is the original Nobel Biocare tapered implant design that was introduced in 1997.[19–27] TiUnite was added to the threaded portion in 2002 (the collar surface retained its machined surface). In published studies, in which one-stage surgery and immediate temporization were applied, Replace implants were often placed directly into extraction sockets. Results from such studies demonstrate high cumulative survival rates, between 97 and 100 %, up to 3 years following prosthetic loading.[28–39]

Strength and safety.

Material Tensile Strength (MPa)	
ASTM Grade 4	550 MPa
Nobel Biocare titanium	860 MPa

Strength and safety
In general, two mechanical parameters must be satisfied in an implant design: fatigue strength and torque strength. Of the two, fatigue strength is the more important for guaranteeing the lifetime safety and success of a given restoration.

Fatigue strength
Fatigue strength is the maximum force an implant/abutment combination can survive for a minimum of five million cycles. Nobel Biocare developed its protocol for testing fatigue strength in 1992. Today, the ISO 14801 international standard for single-post endosseous dental implants fatigue testing is used, which is very similar to the original Nobel Biocare protocol.

The ISO 14801 protocol includes:
– implant/abutment combinations mounted in 30° off-axis orientation
– cyclic force applied (frequency 14 Hz)
– 5 million cycle duration

Based on Nobel Biocare internal fatigue testing, the fatigue strengths for NobelReplace Tapered Groovy NP and RP implants are 197 N and 283 N, respectively.

Torque strength
Torque strength was an important design consideration in the development of the tri-channel internal connection. The goal was to have the largest margin of safety as possible for each of the implant diameters, above the 45 Ncm prescribed insertion torque for immediate temporization protocols. Based on torque testing results, the fracture strengths of the NobelReplace Tapered Groovy NP and RP implants were determined at 150 Ncm and 300 Ncm, respectively.

Material selection
The TiUnite surface on the implants is best made from c.p. titanium. The strongest of the standard grades of commercially pure titanium is ASTM Grade 4 with a 550 MPa tensile strength.

However, in order to benefit by a greater margin of safety, Nobel Biocare uses a cold-worked variant of Grade 4 titanium for all of its TiUnite implants.

This material more than adequately satisfies the fatigue and torque strength requirements of NobelReplace Tapered implants (see table to right).

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Sales, service and support.

Shop Online
The complete assortment of NobelReplace Tapered is available for ordering twenty-four hours a day, seven days a week, through the Nobel Biocare Shop Online website.

Once logged in to the site, customers can find products using a simple search tool, input the necessary quantities, and then add the products to a convenient shopping cart. Once the order is complete, customers simply check out. The products are shipped directly to the dental practice within a few days of ordering.

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For a more personal ordering experience, or if customers are unclear which NobelReplace Tapered products meet their specific needs, Nobel Biocare has Customer Service Representatives who can answer all questions regarding the NobelReplace Tapered implant system, as well as take product orders. Representatives can also help customers set up a Shop Online account, and demonstrate its use for all future orders, if requested. A customer representative can be contacted through any Nobel Biocare office (see Nobel Biocare Worldwide).

Training and education
Nobel Biocare offers a broad range of training courses and educational events that focus on teaching skills needed for successfully integrating the Nobel Biocare offer into a dental practice or laboratory.

Courses and programs are available from introductory to highly advanced levels covering both prosthetic and surgical protocols. The blended course curriculum is indication-based to provide optimal practical relevance. Online courses are available 24 hours a day; those held at clinics and seminars, afford attendees the opportunity to bring in their own cases for mentoring and guidance.

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Nobel Biocare provides supplemental support to all of its solutions through literature ranging from informative to instructional.

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