

STARGET

INTERNATIONAL MAGAZINE FOR CUSTOMERS AND PARTNERS OF STRAUMANN 1/2014

60 years of “Simply Doing More”

Straumann® PURE Ceramic Implant: esthetic, natural, strong

Straumann® CARES® Customized Prosthetic Solutions:
more efficiency – more connectivity – more options

YEARS
60

 **straumann**
simply doing more



Imprint STARGET – THE INTERNATIONAL MAGAZINE FOR CUSTOMERS AND PARTNERS OF STRAUMANN | © Institut Straumann AG | Peter Merian-Weg 12 | CH-4002 Basel | Phone +41 (0)61 965 11 11 | Fax +41 (0)61 965 11 01 | **Editors** Roberto González I Mildred Loewen | **E-Mail** starget@straumann.com | **Internet** www.straumann.com/starget | **Layout** WS Kommunikation AG | www.wskomm.ch | **Printing** Hofmann Druck | www.hofmann-druck.de

iPad This publication is also available for the iPad (English, German, Spanish, French and Italian). Visit the official App Store and download “STARGET for iPad”.

Legal Notice Exclusion of liability for articles by external authors: articles by external authors published in STARGET have been systematically assessed and carefully selected by the publisher of STARGET (Institut Straumann AG, Basel). Such articles in every case reflect the opinion of the author(s) concerned and therefore do not necessarily coincide with the publisher’s opinion. Nor does the publisher guarantee the completeness or accuracy and correctness of articles by external authors published in STARGET. The information given in clinical case descriptions, in particular, cannot replace a dental assessment by an appropriately qualified dental specialist in an individual case. Any orientation to articles published in STARGET is therefore on the dentist’s responsibility. Articles published in STARGET are protected by copyright and may not be reused, in full or in part, without the express consent of the publisher and the author(s) concerned. Straumann® and all other trademarks and logos are registered trademarks of Straumann Holding AG and/or of its affiliates. Third party corporate names and brand names that may be mentioned may be registered or otherwise protected marks even if this is not specially indicated. The absence of such an indication shall not therefore be interpreted as allowing such a name to be freely used. This version of STARGET is not intended for distribution or use in the United States. If you are a U.S. citizen, please contact our U.S. subsidiary, Straumann USA LLC, for a complimentary copy of the U.S. version of STARGET or visit www.straumann.us/starget for a PDF version.

Product availability Certain products and services mentioned in this edition of STARGET may not be available or not yet available in all countries. In case of doubt please contact your local Straumann distributor for information on product availability (addresses of Straumann branches can be found on the last page).

“Listen, investigate, improve, assist”



Thomas Straumann
Vice President of the Board
of Directors at Straumann
Holding AG

You can only achieve something big by starting small, and sometimes it is precisely the little things, unplanned and unexpected, that we realize in hindsight transformed our way of thinking and revolutionized our approach. When my grandfather Reinhard fell awkwardly while ski-jumping during the winter of 1925/26, and was subsequently forced to spend a considerable length of time in hospital, he was motivated as a committed engineer to actively investigate the biology of bone structure, as well as the healing process following a fracture. Soon afterwards, he also made contacts within the academic medical establishment where his contributions were received with great interest.

Would we still be in a position to celebrate the 60th anniversary of our company in this way today if my grandfather had not injured himself all those years ago and been newly-inspired as a result? That is something that we can only speculate about. What is true is that when he founded the Straumann AG institute thirty years later with my father Fritz in 1954, his contributions to fundamental research and the scientific contacts that he had established during the course of this work were crucial elements, on the basis of which the company was able to develop and thrive. For many years, the driving force for Straumann was the resulting osteosynthesis business, and following comprehensive restructuring, the dental business that was still new at the time. 60 years after this company was founded, dental implantology has become an established medical field. Straumann has made a decisive contribution in this regard, setting standards as a pioneer in the area of implant surfaces and materials, and with its innovations, continually redefining the boundaries of possibility. Current examples include Straumann Roxolid®, the high-strength material for dental implants, as well as the recently launched “Straumann® PURE Ceramic Implant”.

“Listen, investigate, improve, assist”, and in doing so, be prepared to be one step ahead – that’s our family philosophy, and it has made the company what it is today. Together with everybody who joined us along the way and supported us, I am delighted today to celebrate this success story “Made in Switzerland”, and would like to wish you, our valued readers, an enjoyable read with this anniversary issue of TARGET.

Best regards,

A stylized, handwritten signature in black ink, appearing to be 'T. Straumann'.

Thomas Straumann

Starget 01 | 14



60 Years of “Simply Doing More”

- 4 In 1954, Reinhard Straumann, drawing on his experience in the Swiss watch industry and engineering, founded the “Dr. Ing. R. Straumann AG Research Institute, together with his son Fritz”. 60 years later, having become a successful leader in the field of dentistry, the company continues to push the boundaries of innovation, while drawing on Dr. Straumann’s legacy of precision and scientific proof.



New: the Straumann® PURE Ceramic Implant

- 34 With the new Straumann® PURE Ceramic Implant, you will be able to expand your patient base with an innovative metal-free solution. Based on decades of experience, know-how and scientific evidence in implant dentistry, the expertise of Straumann is fully behind this product, which is as close to a natural tooth as an implant can be.



Straumann® CARES® X-Stream™

- 50 One scan, one design process, one delivery – experience the validated workflow with the X-Stream™ application which provides a single-tooth full prosthetic solution, with flexibility of use, to restore Straumann® implants.

Content

Focal point: 60 years of “Simply Doing More”	4	How it started
	10	60 years of “Simply Doing More”
	18	What we are today
	20	Birthday greetings from all over the world
	28	60 years of quality and innovation
<hr/>		
Straumann® PURE Ceramic Implant	34	More than PURE esthetics
<hr/>		
Straumann SCIENCE	40	Straumann® Roxolid® implants
<hr/>		
Short implants	42	Interview with Christoph Hämmerle
<hr/>		
Straumann® Bone Level Implant	44	Clinical case report by Riccardo Verdecchia
<hr/>		
Straumann® CARES® Solutions	48	Straumann® CARES® Customized Prosthetics Solutions
	50	CARES® X-Stream™
	54	3M™ True Definition/CARES®: clinical case report by Marcus Engelschalk
	58	The complete digital workflow with 3M Espe and Innovation MediTech
	60	Straumann® CARES® Guide
<hr/>		
Solutions for edentulous patients	62	New components for fixed screw-retained restorations
<hr/>		
Simply Doing More	66	The new Straumann eShop
	68	Innovation management with ideas@Straumann
	70	The Riegl method: Know how patients think and feel
	76	New science movie from Quintessence
<hr/>		
International Team for Implantology	78	ITI Online Academy
	82	ITI National Congresses/Education Weeks 2014
<hr/>		



In the beginning was a watch spring

“Listen, research, improve, help” was the mission statement of the Straumann Research Institute in the pioneering days 60 years ago, and Straumann is still committed to this approach today. The foundations for everything that Straumann now stands for were laid in the 1920s. The skiing accident of a young Swiss engineer and the innovative material he developed for watch springs played a significant role in the company’s growth from a small research institute in north-western Switzerland to the global market leader for dental implants.

The initial spark – a skiing accident

It all began in the winter of 1925/26: Reinhard Straumann (1892-1967) suffered a bad fall when ski jumping, which resulted in a long spell in hospital. The accident motivated the engineer, who worked in the watch industry, to extend his research on subjects such as the crystalline structure of metals to include studies on the organic structure of bones and how this changes as we age. For many years, the keen ski jumper had been researching the metallurgy of highly durable materials for chronometric precision. One of the most important innovations for mechanical watches was the metal alloy Nivarox (“Nicht variabel oxydfest” or “Non-variable non-oxidising”), which was developed by Straumann in the 1930s.

Basic research on osteosynthesis

Following his accident, Reinhard Straumann started looking at ski jumping from a scientific perspective, and tried to find ways to build safe ski jumps. Over time, he developed mathematical models for an optimal jump profile, an optimal outrun and the optimal position of the ski jumper’s body from an aerodynamic perspective. His work found its way into international safety and training standards for ski jumping. As part of the extension of his research to include medical issues, the Waldenburg-based institute worked with the Chirurgische Universitätsklinik Basel (Basel Surgery University Hospital) to investigate the crystalline structure of the inorganic bone substance using X-ray spectroscopy. At the time, little was known about the crystalline structure of bones, and the fact that the organic bone substance was also crystalline was a new discovery. Three widely acclaimed specialist articles, for which Reinhard Straumann was named as an author in addition to the established university professors, appeared in quick succession in 1932. Thirty years later, the basic research carried out enabled Institut Straumann AG to make this expertise available to the scientific world and develop alloys and models for osteosynthesis implants for the treatment of broken bones.



Reinhard Straumann
Dr. Ing.

Nivarox – the watch springs by Dr. Reinhard Straumann

The material Nivarox has been used since the 1930s to ensure that mechanical watches keep time accurately and are virtually temperature-resistant. Watch springs made of this material are wear-resistant, practically anti-magnetic and rust-proof, and have a very low coefficient of thermal expansion. These special characteristics made the complicated and expensive compensation balance wheel obsolete. Hairsprings made of Nivarox are still used today by many manufacturers of mechanical watches (particularly those at the higher end of the quality spectrum). Nivarox and Nivaflex, which was developed later, can be regarded as important building blocks (from a materials science perspective) for the subsequent success of the global company Straumann.

◀ *The Nivarox watch springs.*

1954: start of the “Institut Straumann” era

In 1954, Reinhard Straumann established the “Forschungsinstitut Dr. Ing. R. Straumann, Waldenburg” as a joint stock company with an initial 20 employees. His son Fritz Straumann, who had already followed in his father’s footsteps by pursuing a career as an engineer, was also actively involved in founding the institute. Fritz Straumann increasingly took over his father’s research activities within the institute and worked to develop non-magnetic, wear-resistant, breakage-resistant and corrosion-resistant metal alloys.

Advance into the field of medical technology

In the late 1950s, Fritz Straumann finally joined forces with representatives of the Faculty of Medicine at the University of Basel and with the Swiss Association for the Study of Internal Fixation (Arbeitsgemeinschaft für Osteosynthesefragen – AO), which was founded in 1958. These working groups set themselves the objective of optimizing and standardizing the technique of osteosynthesis (mending broken bones), monitoring the process with follow-up examinations and developing the necessary equipment for this. The development was hampered by problems such as corrosion and material fatigue, it was difficult to acquire the materials and technical support was needed for the experimental work. Institut Straumann was able to contribute the expertise it had built up over many years, and in 1960 it entered into an extremely effective collaboration with the AO and the company Mathys, based in Bettlach. The principles and results developed and gathered during this time are now an intrinsic part of modern traumatology.

The search for the perfect alloy

The work of the Institut gradually became more and more focused on researching the tissue compatibility of metal

and metal alloys and relevant corrosion products, and on the topics of “implant fatigue due to biomechanical stress” and “fracture healing”. The aim was to develop highly wear-resistant alloys that did not contain any toxic elements. The specifications developed by Institut Straumann for implant steel formed the basis for the international ISO and ASTM standards that apply today. From 1964, implants and instruments were finally sold under the “Synthes” brand and plates and screws were manufactured from the new metal titanium for the first time.

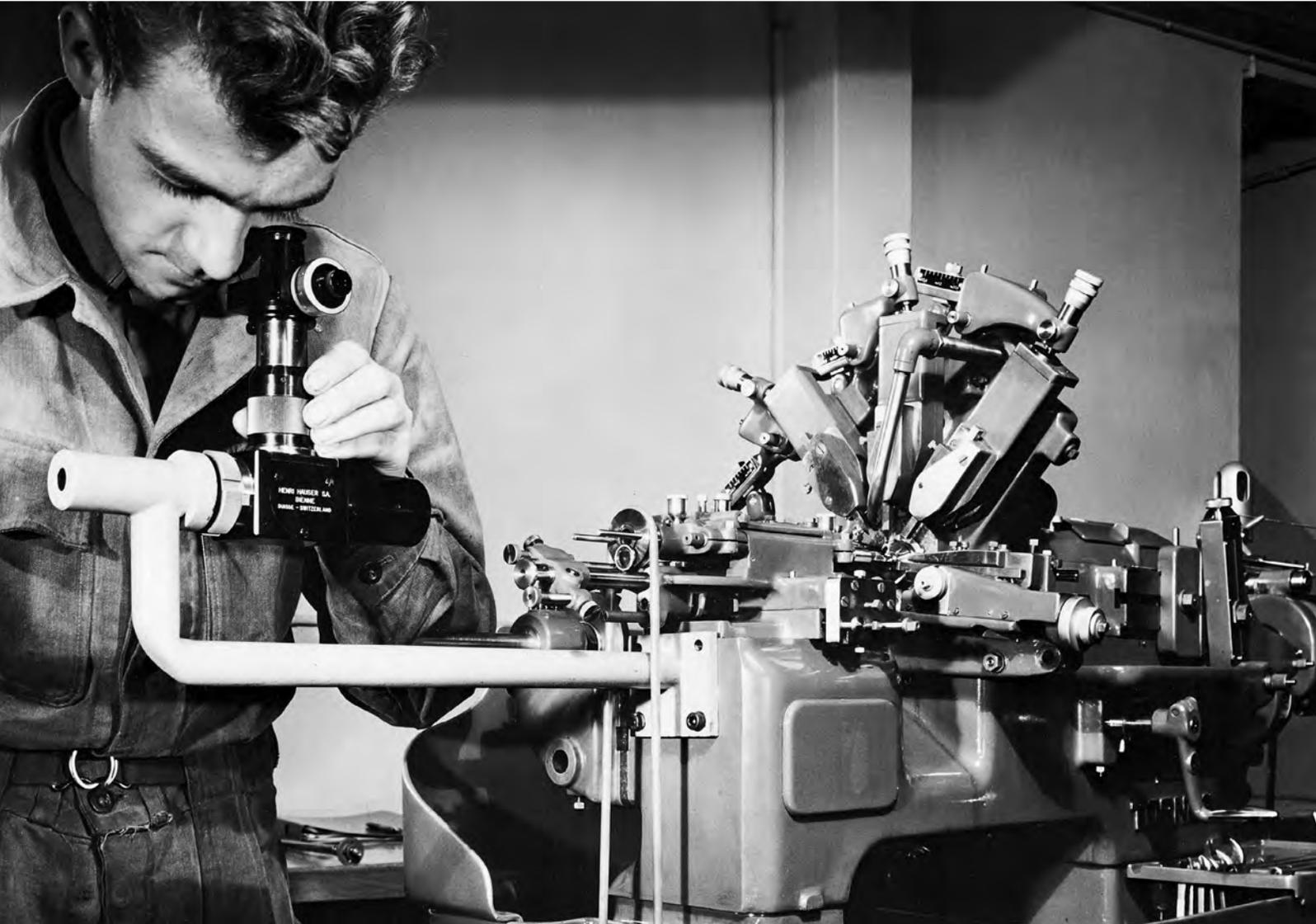
The beginnings of dental implantology at Straumann

In the 1960s, the Institut was tasked with carrying out its first dental research. A study on the corrosion of dental root pins carried out by University Hospital Zurich led to the development of dental root screws, which stood out due to their functional design and corrosion resistance. Additional university dental hospitals expressed their interest in metal implants, including the Zahnärztliche Institut Bern (Bern dental institute) headed by Prof. André Schroeder. The requirements for tissue compatibility and integration in the infection-prone jaw area were particularly demanding here.

1974: introduction of the first single-phase implant

The definitive breakthrough in oral implantology came in the 1970s. The first single-phase dental implants – which were then of the hollow cylinder type – were introduced in 1974 in collaboration with various dental university hospitals. This was made possible by the Institut’s expertise in the areas of biomechanics, tissue compatibility and material development. In November 1976, Straumann was asked to manufacture a screw-shaped dental implant. The experience gained from using various metals and alloys and from corrosion trials in vivo and compatibility tests in vitro resulted in the use of pure titanium as a basic material.

*The Waldenburg workshop in the 1950s. ▲
Working at the turning machine. ►*



Using the procedure developed by Straumann specifically for dental implants, it was possible to obtain an anchorage surface area that was six times larger.

The strong ankylotic connection between bone and implant – achieved through an optimal implant geometry and micromorphological surface finish – was clearly proven histologically.

This proof of osseointegration by Professor André Schroeder in Bern is the start of the success story of the Straumann® Dental Implant System.

And the rest, as they say, is history ...

A more detailed version of this article will appear in autumn 2014 in the anthology “Ingenieure bauen die Schweiz” (engineers build Switzerland), vol. 2, edited by Franz Betschon, Willy Schlachter and Stefan Betschon, Neue Zürcher Zeitung publishing house, Zurich.

► *Source: internal documents and annual reports of Institut Straumann AG and Straumann Holding AG, articles by Peter Fässler, Paul Gisin, Marcel Müller, Prof. André Schroeder*, Heinrich Stamm and Dr. h.c. Franz Sutter* for the publication marking the 60th birthday of Dr. h.c. Fritz Straumann (Liestal, 1985). Sutter and Schroeder partly from Swiss Dent vol. 4 1983 no. 6, Dr. Felix Wüst publishing house, Zurich.*

*Construction drafts from the 1970s. ►
Fritz Straumann (1921-1988) with his engineers. ▼*



STRAUMANN – 60 YEARS OF “SIMPLY DOING MORE”



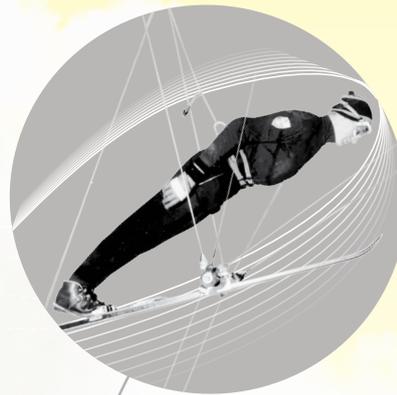
NIVAFLEX

Reinhard Straumann patents Nivarox (1935) and Nivaflex (1948), two special alloys for watch springs that are still used in high-quality Swiss watches today.

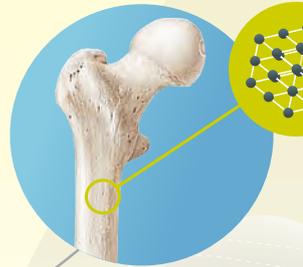


WATCH TESTING DEVICE

Institute Straumann develops its own testing devices and methods to achieve the required level of precision.



Reinhard Straumann analyzes the aerodynamics of ski jumping and improves techniques. He designs jumps and develops time measurement as a way of evaluating performance.



1954

1955

1956

1957



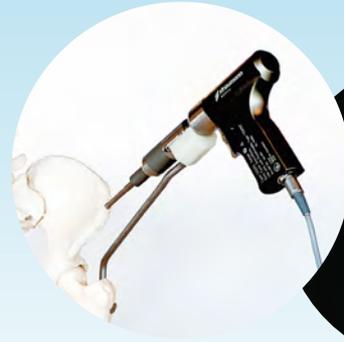
Reinhard Straumann establishes the Dr. Ing. R. Straumann Research Institute AG in Waldenburg.



SPEED METER

The speed meter was developed for timing sports events. It was then used by the police to measure vehicle speed on the road. Ironically, Reinhard Straumann was among the first motorists to be stopped using this new instrument.

DEVICE FOR EXTRACTING BONE AND BONE MARROW FOR BIOPSIES



OSTEOSYNTHESIS IMPLANT



Microradiography of cells restructuring bone.



Reinhard Straumann suffers a bone fracture. Using X-ray diffraction, he discovers that bones contain a crystalline mineral component that gives them their rigidity.



The company specializes in metallographic and physical analysis in addition to research and development of watch materials, testing devices and ski jumping.



1958

1959

1960

1961

1962

1963

The Swiss Association for the Study of Internal Fixation (Arbeitsgemeinschaft für Osteosynthesefragen – AO) asks Straumann to help solve technical problems.

First studies of osteosynthesis.

Institute Straumann expands and begins research and development on orthopedic surgery.

First experimental and clinical findings on physiological reactions to metals.



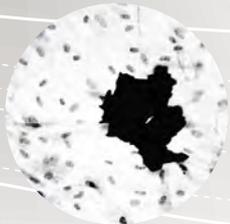
FRACTURE PLATE

Fracture plates, bone screws, dynamic hip screws and medullary nails, supplied by Straumann under the Synthes brand, are used worldwide in the surgical treatment of fractures and orthopedic corrections.

A host of innovations: Vagorec-5 for use in stomach operations, devices to relieve pain by nerve stimulation and other inventions like mini-jets for oil burners, sensors for measuring gas density in oil pipelines, and band-pass filters for controlling the Paris Metro. All demonstrate the trust placed in the company's expertise by clients from diverse fields, including physicians.



GAS DENSITY SENSORS



Cell proliferation around metal particles proves biocompatibility in tissue cultures.



1964

1965

1966

1967

1968

1969

1970

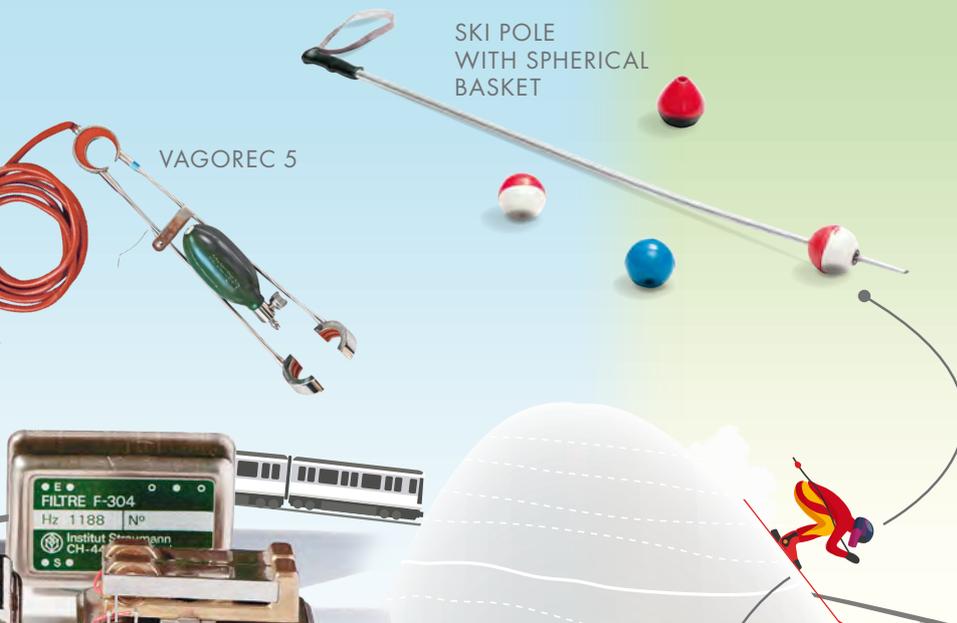
Straumann pioneers the first implants for treating fractures. In collaboration with the AO, the company becomes a leading manufacturer of implants and surgical instruments for osteosynthesis.

Titanium plates show excellent durability in clinical trials.

Fritz Straumann, son of the founder, takes over as head of company after his father's death.

First connection with dentistry in the context of tooth instability.

Establishment of the AO/VET for osteosynthesis in veterinary medicine (horses, cattle, dogs and cats). Osteosynthesis becomes established in veterinary medicine worldwide. Today, animal and human fractures are treated similarly. Fritz Straumann continues to support the AO/VET for the rest of his life.



SKI POLE WITH SPHERICAL BASKET

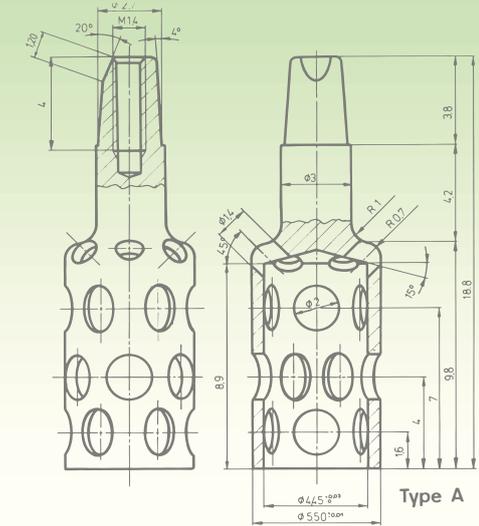
VAGOREC 5



BAND PASS FILTER

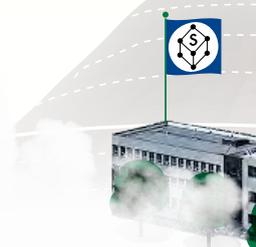


MINI JET FOR OIL BURNERS



Type A

Wind tunnel tests are extended to alpine disciplines, leading to aerodynamic improvements like ski poles with spherical baskets, which were used very successfully by Swiss ski racers.



1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983

Fritz Straumann continues the involvement with skiing. He optimizes ski jumping through wind tunnel tests and geometric calculations.

The first titanium hollow cylinder implant begins the continuing success story of the Straumann Dental Implant System.

Development of jaw reconstruction plates and titanium clamping screws.

Dr. h.c. Fritz Straumann, Prof. André Schroeder and others establish the International Team for Implantology (ITI) with the aim of further developing oral implantology. Straumann expands the dental business internationally opening its first subsidiary, in Germany.

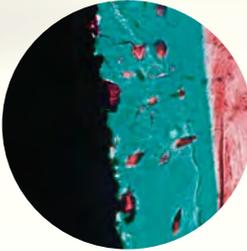
The biocompatibility of titanium, implant design and rough surface technology all contribute to osseointegration and therefore to the quality and success of dental implants.



HOLLOW CYLINDER DENTAL IMPLANT



Rough, titanium plasma-coated surface.



Bone-forming cells attach to the surface and anchor it in new bone (osseointegration).



Straumann's superconducting alloys set a world record for antimagnetic watches.



Expansion in Waldenburg.



Thomas Straumann continues the involvement with skiing. Improvements in wind tunnel simulation now enable ski-jump athletes to perfect flight techniques.



Further international subsidiaries established.



1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995

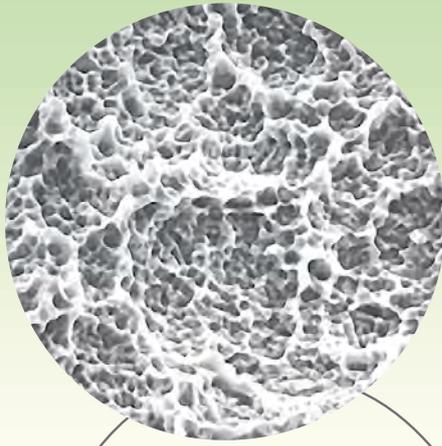
Dr. h.c. Fritz Straumann dies.

Management buyout of the osteosynthesis division.

Thomas Straumann, the founder's grandson, takes the helm of Institute Straumann, which is now focused on oral implantology.

Straumann acquires Affentranger in Niederdorf and thus gains a second production facility alongside Saint-Imier.

Straumann develops the SLA® implant surface, which cuts healing time in half.



SYNOCTA®
STANDARD
CEMENTABLE
ABUTMENT
1999

SOFT TISSUE
LEVEL IMPLANT
DESIGN 1986

SLA®
SURFACE
1997



1996

1997

1998

1999

2000

2001

Straumann goes public:
IPO supports further
growth of the company.

New factory opens in Villeret,
taking over production from
Saint-Imier and Niederdorf.



EMDOGAIN®



Emdogain® promotes the regeneration of periodontal and gum tissues and helps rescue teeth that have been damaged by periodontal disease.

BONECERAMIC™



Straumann develops BoneCeramic™, a fully synthetic, biocompatible material used in bone augmentation procedures.

CADCAM ABUTMENT 2010

VARIO-BASE™ 2013

BONE LEVEL IMPLANT DESIGN 2007

SLACTIVE® SURFACE 2005

ROXOLID® 2009



 **straumann**



KUROS

BIORA



etkon

2002

2003

2004

2005

2006

2007

2008

Straumann acquires Kuros Therapeutics and enters the field of biomaterials.

Acquisition of Biora, a pioneer in biologically-based regeneration of dental tissue.

After 50 years in Waldenburg, the company moves its headquarters to Basel.

Straumann enters the field of CAD/CAM dental prosthetics through the acquisition of etkon.



CAD/CAM



SOFT TISSUE
LEVEL CERAMIC
IMPLANT 2013

ZLA™
SURFACE
2013



Straumann® CARES® Digital Solutions, with state-of-the-art software, and high-performance CAD/CAM prosthetics simplify workflows and connect dental professionals across disciplines.



The central figure for Straumann is the customer. With more women training to become dentists than men, the face of dental care is increasingly female.



2009

2010

2011

2012

2013

2014

Acquisition of the dental business of IVS Solutions AG; entry into computer-guided surgery.

Straumann invests in Dental Wings to develop digital solutions and establish a standard open dental software platform.

In its largest acquisition to date, Straumann acquires 49 % stake in Neodent, the dental implant market leader in Brazil.

Straumann acquires stakes in Createch and Medentika, two fast-growing providers of tooth replacement solutions.

Straumann, SLA, SLActive, synOcta, CARES, Roxolid, ZLA, Emdogain and BoneCeramic are (registered) trademarks of Straumann Holding AG and/or its affiliated companies. The availability and indications of the products mentioned/illustrated vary according to country.

straumann
simply doing more

What we are today

More than simply doing more. A partner for life.



In 1954, Reinhard Straumann, drawing on his experience in the Swiss watch industry and the engineering field, founded the Dr. Ing. R. Straumann Research Institute AG. Over 60 years later, the company still draws on Dr. Straumann's legacy of precision, scientific proof and pushing the boundaries of innovation, and has become a successful global leader in the field of dentistry.

Every day, Straumann continues to work on solutions that address:

- Ease-of-use (handling, reduced number of components)
- Treatment and workflow productivity, procedure steps, chair time, costs
- Affordability
- Barriers to treatment
- Clinical outcome

Over 60 years of research and innovation

What we have learned in more than 60 years of research in different scientific fields has been the source of inspiration for our numerous innovations. Straumann has always been dedicated to designing high-quality products for various dental treatments, meeting restorative and surgical needs while respecting biological principles. Now a successful leading brand in the premium segment, Straumann's philosophy is to provide outstanding products and solutions supported by documented clinical evidence and service excellence.

REPLACEMENT	DIGITAL DENTISTRY	REGENERATION
Straumann® Dental Implant System	Straumann® CARES® Digital Solutions	Straumann® Regenerative System



Our surgical and prosthetic components are designed for long-lasting and esthetic tooth replacement solutions, providing user-friendly solutions to improve the standard of patient care.

Our digital solutions unite the dental community, offering immediate support and connectivity to the world's leading diagnostic, planning and design systems.

Why replace if you can regenerate? We support you in the regeneration of oral tissue, either to support implant procedures or to help preserve teeth after treatment of periodontal disease.

Latest innovations/product upgrades

- Straumann® Roxolid, full portfolio (see p. 40)
- Straumann® PURE Ceramic Implant (see p. 34)
- Straumann® CARES® X-Stream™ (see p. 50)

- Straumann® CARES® System 8
- Continuous improvement and extension of connectivity options

- Straumann® Emdogain 015

What we believe in and what we strive for

Despite the significant changes in the market, our vision, mission statements and core beliefs are still valid.

OUR VISION
To be the partner of choice in implant, restorative and regenerative dentistry.
OUR MISSION
Simply doing more for dental professionals.
OUR CORE BELIEFS
Reliability is our trademark. We deliver peace of mind. Our customers and patients trust us to provide consistent quality and service excellence.
Simplicity is our strength. In an increasingly complex world, we seek solutions that make life simpler for customers and patients.
Customers are our inspiration. We are dedicated to ensuring the success of all our customers. We always seek to understand their perspective and to deliver on our promises.
People are our success. Our success depends on skilled, caring, trustworthy and diverse individuals who work as a team and share our passion for innovative solutions and service excellence.
Achieving more is our future. We strive relentlessly to find better solutions and to create value for our stakeholders and always believe in our ability to achieve more.

What you can expect from us in the future

We believe that the strategic priorities we have identified and the steps we have taken in the past will enable us to succeed in our fast-changing environment. They will bring us closer to our vision of **being the partner of choice in implant, restorative and regenerative dentistry** and to extend our global leadership. We aim to bring significant, meaningful innovations to the market and to make them as widely available as possible. An important element is to provide education to the dental and medical communities about the available benefits, as well as providing clinicians with a comprehensive range of treatment options for their patients, whether for restoration, tooth replacement or regeneration. Part of our focus will also be on developing tools to help customers grow their businesses. In this context, we will continue the roll-out of our new eShop and online offering, as well as social media applications for reaching customers and patients. We also intend to expand our program for young professionals on a broader international scale. These initiatives, coupled with our ongoing investment in customer surveys and focus groups, will enable us to further enhance the quality of the products and services we provide.

► Scientific references of this article: www.straumann.com/stargetref

DID YOU KNOW?

Some key figures about Straumann

No. 1

Leader in the global dental implant market, by share of sales*

2217

Employees worldwide

26

Subsidiaries on 5 continents

70+

Countries, where Straumann products are available

6

Production plants in Europe and the USA

13'000'000+

Straumann implants that have been inserted worldwide to date

5'000'000+

Components produced each year in Swiss production plant

3'000+

Independent scientific publications

10+

Years of documented results¹

98,8 %

Implant success rate²

1200+

People who visit our production facility in Villeret or the labs at Basel HQ, Switzerland every year

* According to 2013 FX rates. Straumann estimates, based on MRG and iData, including 25 industrialized countries.

Birthday greetings from all over the world

► Note: the order of greeting is random and does not follow a specific sequence.



Luca Cordaro
Rome
Italy

«Great products, extensive research and dedicated people at both an international and

national level: that is what Straumann means to me. Working with this company for the past 20 years has helped our profession and patients to a great extent.»



Christoph Hämmerle
Zurich
Switzerland

«When I first entered the field of implant dentistry, Straumann already had the reputation of a very well-run company manufacturing products of high “Swiss Quality” standards based on sound research and innovative product development. In the past decades of collaboration, Straumann has been an excellent partner for our academic institutions. With joint efforts we have been able to develop innovative, well-documented and safe products as well as

improve clinical concepts and treatment protocols to enhance wellbeing and quality of life of our patients.»



Frauke Müller
Geneva
Switzerland

«A good product is convincing and speaks for itself. This is what has kept Straumann going for sixty years!»



Takayuki Takeda
Tokyo
Japan

«My congratulations on 60 years of business! I would like to express my

appreciation to Straumann, who, for many years, have not only produced constant innovations, but also many fine products that are widely trusted.»



Mario Rocuzzo
Turin
Italy

«In all these years in implant dentistry, Straumann’s excellent products and services have helped me to always provide a top quality treatment to my patients.»





He-Yong Yee

Bucheon
Republic of Korea

«For the past 15 years, I have been very happy to work with Straumann, which can be proud of its high success rates and long-term stability. Straumann has supported my efforts to help my patients achieve health and a better quality of life and I am looking forward to the future, with Straumann as my best business partner continuing to provide reliable, innovative and well-designed products.»



David Cochran

Austin, Texas
USA

«We are treating patients better because of what Straumann has done in these 60 years. It is an honor to be associated with this company, which has always been able to take pride in its innovations backed by science.»



Daniel Buser

Bern
Switzerland

«Becoming an excellent world-class company in the med-tech field with a 60-year history is very impressive. Stay in close

contact with your customers, listen to their needs, and you'll continue to be the leader in the field.»



Dieter Weingart

Stuttgart
Germany

«The partnership between the ITI and Straumann is a unique relationship for the development of optimal treatment solutions in implant dentistry for the benefit of patients.»



Arne Böckler

Halle
Germany

«Straumann's constant striving for the highest

possible quality and continuous improvement makes its products something special that I'm happy to use for my patients. The people behind the product are just as important, though, so here's to us continuing to work well together!»





Jae-Shin Lee

Seoul
Republic of Korea

«My congratulations on the 60th anniversary! Straumann has always kept the benchmark in quality and product development. I have always been very happy that the Straumann system enabled me to provide my patients with better and safer treatments. Cheers to the next sixty years!»



Kerstin Fischer

Falun
Sweden

«Straumann provides a genuine concept in implant dentistry and tissue regeneration that both the patient and the user can rely on. As a dentist, you can treat all your patients with products that would be also first choice if you had to treat a member of your own family.»



Dean Morton

Louisville, Kentucky
USA

«Congratulations on 60 years of productivity, reliability, friendship

and respect from those that use your products.

You should be very proud of Straumann's achievements and the position the company has risen to.»



Juan Blanco

Santiago de Compostela
Spain

«The name Straumann brings to mind such things as quality, development, innovation, but above all scientific evidence. I feel privileged to be connected to this company, not only at the clinical level but also in the field of research, and I have no doubt that the major beneficiaries are the patients. Another important aspect I'd like to stress is the concern they show about the future. They're not just interested in what they are but also in what they will be.»



Toshikazu Iijima

Chiba
Japan

«For many years, Straumann has been continuously providing products that are essential to ensure reliability in implant treatment.»





Frank Schwarz
Düsseldorf
Germany

«By its unparalleled involvement in research and development, Straumann is a company that has played a significant part in making oral implantology a valued element in healthcare and putting it on a firm foundation.»



Ronald E. Jung
Zurich
Switzerland

«During my years working with Straumann, I have developed a great deal of trust in their clinical and scientific expertise, so much so that I would have complete peace of mind when fitting a member of my own family with a Straumann implant.»



Ashley Byrne
Wheatley
United Kingdom

«Straumann has always been at the forefront of quality, with up-to-date designs. It has always been very ethical in its

approach to dentistry and that is why it is a leader in the field.»



Jörg Wiltfang
Kiel
Germany

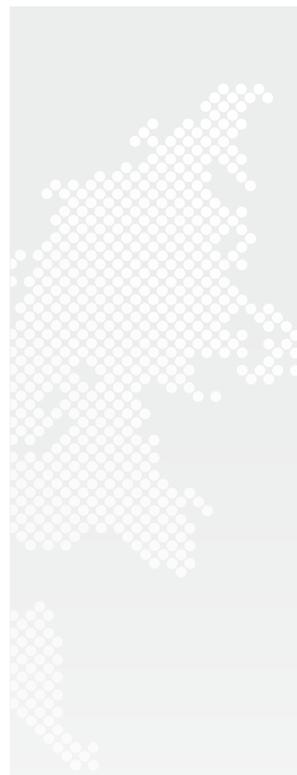
«It has been a pleasure working with Straumann over the past years. Keep on going with your excellent products and perfect support. Best wishes!»



Andreas Filippi
Basel
Switzerland

«I enjoy working with this system: the products are of incredibly high quality and they are consistent

with our profession's scientific principles as laid down in the ITT's Consensus Papers. Straumann keep coming up with more and more innovations, and, at the end of the day, the patients are still happy – what more could you want?»





Ola Norderyd
Jönköping
Sweden

«Straumann represents continuous development and knowledge within the field of dental implantology.»



Eiji Funakoshi
Fukuoka
Japan

«On behalf of Japanese Straumann product users, I would like to congratulate you on the 60th anniversary of your company. To the present day, I have always had complete confidence in your products. And I am sure this will also be the case in the future.»



Michael Gahlert
Munich
Germany

«My wish for Straumann is that the company remains faithful to itself by being trustworthy and relying on scientifically developed and medically sound product lines – if it does, I will continue to enjoy work-

ing with them as much as I have in the past.»



Steven Eckert
Minneapolis, Minnesota
USA

«Straumann's long history is a remarkable achievement. Let's look at the next 60 years as just another drop in the bucket, and keep on innovating, and working for the good of the patient.»



Robert J. Kelly
Farmington, Connecticut
USA

«From the very beginning of their involvement with dental implants,

Straumann developed and nurtured close and constructive ties with experts in academia. This led to the formation of the International Team for Implantology, benefiting the profession with support for research, scholarship, and intensive consensus conference activities worldwide and benefiting Straumann by helping to inform the development of consistently superior products and programs for implant dentistry.»





Enzo Vaia
Napoli
Italy

«I have always tried to offer the best treatment possible to my patients, with long-term predictable outcomes delivered by products from an efficient organization providing continuing education updates. This has been possible because Straumann and I share the same ideals.»



Guido Heydecke
Hamburg-Eppendorf
Germany

«By working with treatment concepts based on scientific evidence, we maximize the benefit to our patients. So, many congratulations on your 60 years!»



Sung-Hee Han
Uijeongbu
Republic of Korea

«My warmest greetings on Straumann's 60th an-

niversary! Since I started using the Straumann® Dental Implant System 25 years ago, my patients and I have always been really satisfied with the excellent quality and outcome provided and that's why I still adhere to Straumann from conviction!»



Matteo Chiapasco
Milan
Italy

«I had my first contact with Straumann in 1992 and have seen reliable research and excellent outcomes over these two decades, according to both my personal and the scientific community's experience. I am impressed of the system's evolution during these last decades, resulting in the huge amount of supporting literature and clinical performance.»



Stephen Chen
Balwyn
Australia

«In implant dentistry, we've seen lots of companies come and go. Straumann is showing signs of continuing strength, growth and endurance. So I would call it "60 years young" not "old". Keep up the good work!»





Luis Aracil
Madrid
Spain

«I am very happy to treat my patients with Straumann products. Straumann is a solid company that invests in research and the quality of their products, ensuring that my patients receive the best solution to replace their teeth. After 15 years of intense collaboration in the areas of innovation and teaching, I can only say: just carry on!»



Daniel Wismeijer
Amsterdam
Netherlands

«For me Straumann's 60 years can be summed up in two key words: Quality and Trust—the quality of the product and the trust of the people that work with it.»



Eugenio Romeo
Milan
Italy

«I have been working with the Straumann® Dental Implant System for more than twenty years now. The safety and reliability of this

solution allows me to work with a system that offers peace of mind due to its long-term high success rates.»



Gerhard Wahl
Bonn
Germany

«Early on in its 60-year history, Straumann started to concentrate on dental implantology based on scientific research and practical foundations; that has always given me the confidence to be able to recommend these tried and tested products for my patients' use. As well as manufacturing and developing reliable products, though, Straumann presents itself to the world through an efficient and reliable sales force, and that I see as underlining its high quality standard in an impressive way.»



Merete Aaboe
Copenhagen
Denmark

«The service and support by Straumann is excellent and makes daily life at the clinic easier.»





Bilal Al-Nawas
Mainz
Germany

«I have known Straumann as an industry partner since I was a student and am constantly impressed by its innovations, documented system and service relationships.»



Nils-Claudius Gellrich
Hanover
Germany

«Challenges appear when we go looking for them. Solutions are found when we work on them, and trust comes from challenges being resolved in such a way that both doctor and patient are satisfied: 60 years of reliability have made Straumann what it is now.»



Paul Stone
Edinburgh
United Kingdom

«I consider myself very fortunate to have benefited from 25 years of Straumann's products, expertise and outstanding customer service. Their on-going Research and

Development Programme ensures exciting times ahead for the next 60 years. Congratulations!»



Paul Fugazzotto
Milton, Massachusetts
USA

«Clinical materials and applications grounded in science and manufactured with the concern for both clinicians and patients as the overarching paradigm; a refusal to release products without appropriate in-house and field testing; a deep desire to communicate with scientists and clinicians at all levels; a willingness to listen, and address legitimate concerns; a constant striving to be better: in my experience these are the hallmarks of Straumann. What does this mean to me as a demanding and conscientious clinician? Simply stated, in my quest to maximize patient

treatment outcomes, to simplify therapies, to effect appropriate practice growth, and to have the greatest peace of mind possible, there is no choice but Straumann.»





More than an implant. A sense of trust.

When your patients need a restoration, you want to provide them with the best possible solution and exceed their expectations. The Straumann® Dental Implant System is designed to support you in this by improving treatment outcome with products and solutions built on a history of innovation and reliable scientific evidence.

More than evidence. A commitment to science.

Our dedication to research provides the information you need to know: our products work. In collaboration with leading clinics, research institutes and universities around the world, Straumann is committed to research in the field of oral implantology and tissue regeneration.

Every year since 2009, over 100 peer-reviewed publications have shown data on the performance of Straumann products. A five-year overview of studies and publications in the USA and Europe demonstrates Straumann's innovative capacity:

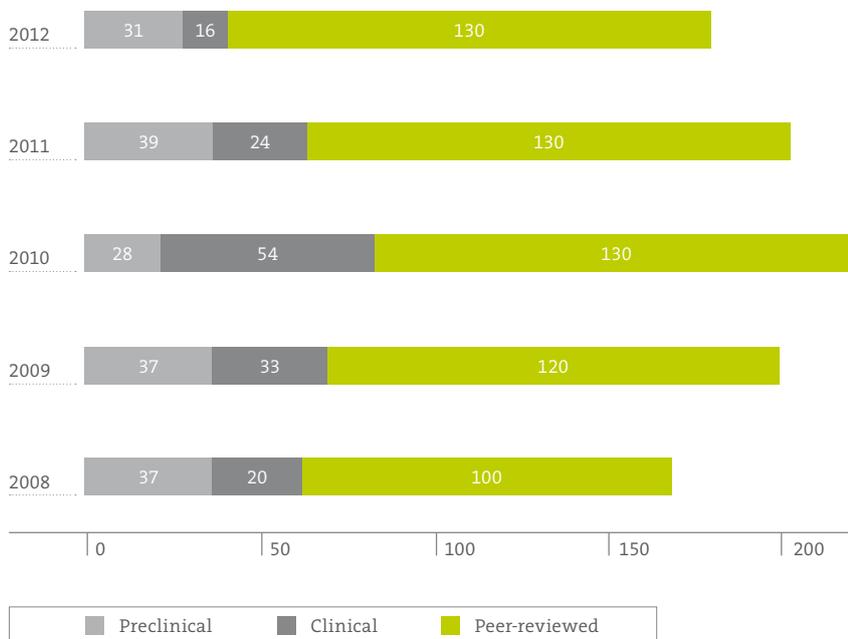


Fig. 1: Number of study publications and peer reviewed publications on Straumann products.



Trust based on 60 years of quality and innovation

The company has stayed true to the vision of its founders, drawing on Dr. Reinhard Straumann's (1892-1967) legacy of precision, scientific proof and pushing the boundaries of innovation.

What we have learned in more than 60 years of research in various scientific fields has been the source of inspiration for our numerous innovations. Our long and consistent history provides Straumann with the knowledge and experience to develop groundbreaking solutions of the highest quality.



One system – one kit – all indications

The Straumann® Dental Implant System was built on the basis of simplicity: One system – one kit – all indications.

These benefits are highly appreciated by clinicians worldwide, who have placed more than 13 millions implants. For both implant lines, Bone and Soft Tissue Level, Straumann offers a broad range of standard and CAD/CAM abutments in leading materials with a full application range – designed to create the optimal restorative result for virtually any situation.

Again, you need only one restorative kit for both implant lines for convenient component management – easy to master, simple to handle.

More than many possibilities. Simply freedom.

Enjoy the freedom to choose the implant which suits your treatment plan the best. You have the choice between the two implant lines of the Straumann® Dental Implant System: Bone Level and Soft Tissue Level. Each of these implant lines has its specific properties and respective advantages.



The **Straumann® Soft Tissue Level Implant** line was designed to simplify treatment. The one-stage surgical procedure allows you to save time and increase efficiency in your practice. You can cover a wide range of indications with three different implant designs: Standard, Standard Plus and Tapered Effect.



The **Straumann® Bone Level Implant** line is the implant of choice for those who prefer working with a “collar-free” solution. It provides great flexibility if you want to deliver an esthetically pleasing solution to patients with a natural look and feel.

More than technologies. Improved standard of care.

To develop innovative solutions with the aim to improve standards of care is part of our heritage and dedication. Within our portfolio you have access to various technologies such as the implant surfaces SLActive® and SLA®, as well as the implant material Roxolid®.

Straumann® SLA is one of the best documented implant surfaces in the world, with over 100 peer-reviewed published papers which demonstrate the excellent performance of this implant surface, including clinical data of 10 years of follow-up. When using an implant with this surface, you can rely on the scientific facts and the long-term experience which support its success.

With **SLActive®**, our next-gen hydrophilic surface, treatment predictability^{1,2} is significantly increased. It is designed to deliver:

- Higher security and faster osseointegration for every indication³⁻⁸
- Reduction of healing times from 6 to 8 weeks down to 3 to 4 weeks³⁻¹⁰
- Increased treatment predictability in critical protocols^{7,9}

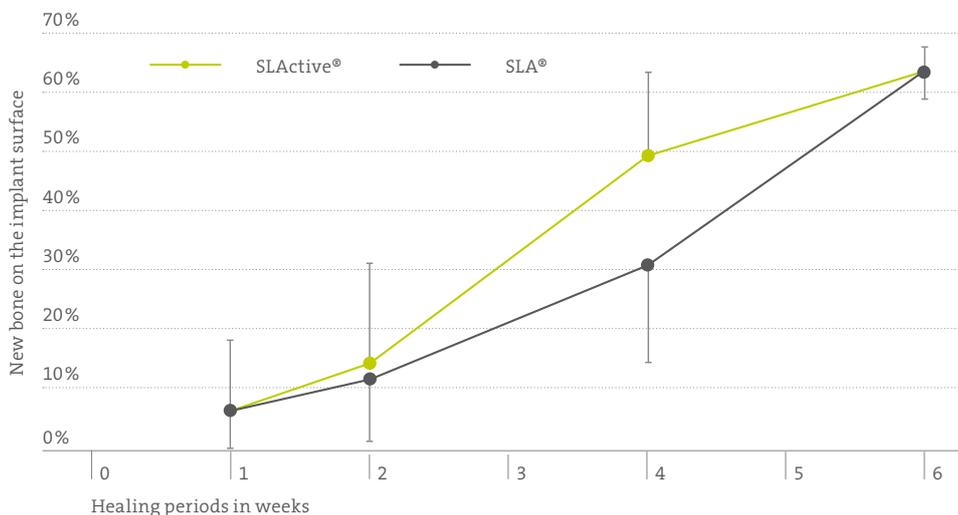


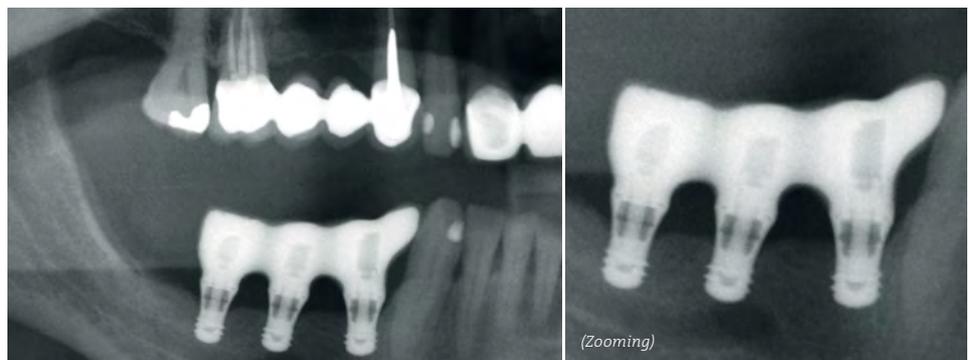
Fig. 2: Comparison of the osseointegration time of SLA® and SLActive®

Most implant failures occur in the critical early period between weeks two and four¹¹. Thanks to its hydrophilic properties, Straumann SLActive® provides a higher predictability and reduces the risks of early implant failures^{1,2}. Human histologies have shown for SLActive® a greater bone-to-implant contact (BIC) after two weeks and a significantly greater BIC after four weeks than SLA®¹⁰.

Straumann offers implants in two materials: grade four Titanium and Roxolid®, a titanium-zirconium alloy which is stronger than pure titanium^{12,13} and shows excellent osseointegration factors^{14,16}. The combination of these properties, high mechanical strength and osteoconductivity is unique in the market of implant dentistry.

More treatment options with smaller implants

Thanks to their outstanding biological and mechanical properties, Straumann® Roxolid® implants make it possible to cover more treatment options.



Case example: Case treated with Straumann® Standard Plus 4 mm Implants.

Depending on the specific situation, smaller implants can be used to preserve peri-implant structures and reduce or avoid invasive grafting procedures^{17,18}.

Could a bone augmentation procedure be avoided by using Straumann® Roxolid® 3.3mm implants¹⁷?

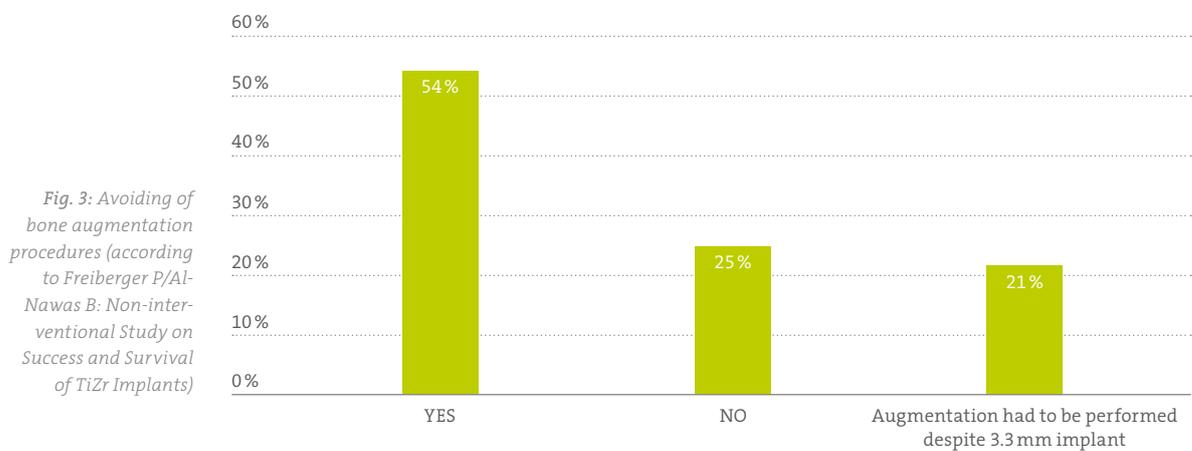


Fig. 3: Avoiding of bone augmentation procedures (according to Freiburger P/Al-Nawas B: Non-interventional Study on Success and Survival of TiZr Implants)

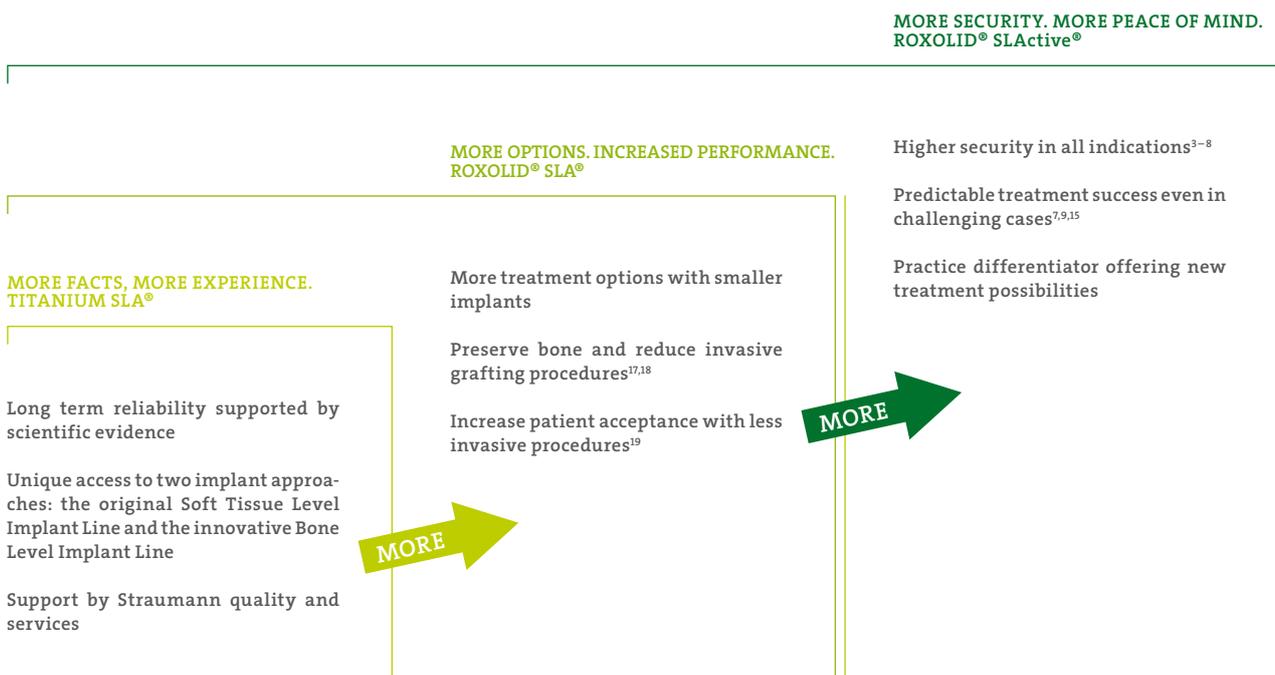
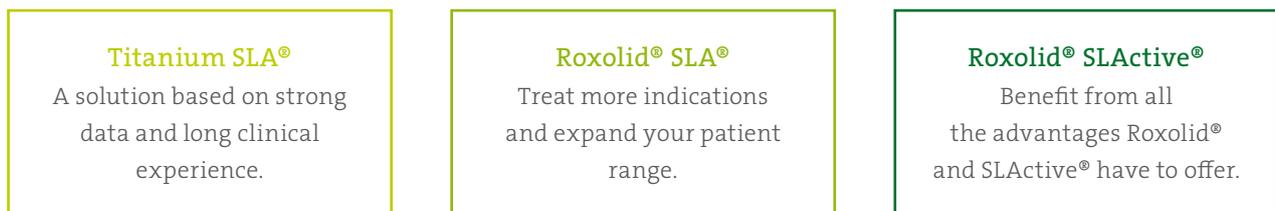
Increase patient acceptance with less invasive procedures*

Treating patients without invasive grafting procedures offers your patients a less traumatic, faster treatment at lower costs. These advantages have the potential to make dental implant therapy appealing to more patients than before.

** If a GBR procedure can be avoided.*

Choose the solution you need

Surfaces and materials by Straumann are offered in three different combinations in order to meet all clinical needs and support you in having the freedom to choose the solution you need.



► Scientific references of this article: www.straumann.com/stargetref



More than PURE esthetics. The natural and strong solution.

During recent months, there have been news and announcements about the new Straumann® PURE Ceramic Implant (see also STARGET 3/13). Now, the product has been officially launched at the ITI World Symposium 2014 (24 – 26 April) and is ready to be explored. There are various properties to appreciate about this implant, which comes as close as an implant can to a natural tooth, and, not least, the Straumann expertise behind it, which is based on decades of experience, know-how and scientific evidence in implant dentistry.

A high-end esthetic solution that makes the difference

The Straumann® PURE Ceramic Implant makes available a different esthetic solution to treat patients who have specific needs and demands. While some patients have a thin gingival biotype, which requires a different treatment approach, others express an explicit wish for a metal-free alternative.

Expand your practice with new treatment options

With the Straumann® PURE Ceramic Implant, you will be able to expand your patient base with an innovative metal-free solution. A patient survey conducted in Europe by Straumann¹ including more than 250 participants has shown that, given the choice, considerably more people would prefer a ceramic to a titanium implant (see Fig. 1). Clinicians can use this solution as an opportunity to increase their patient base and business.

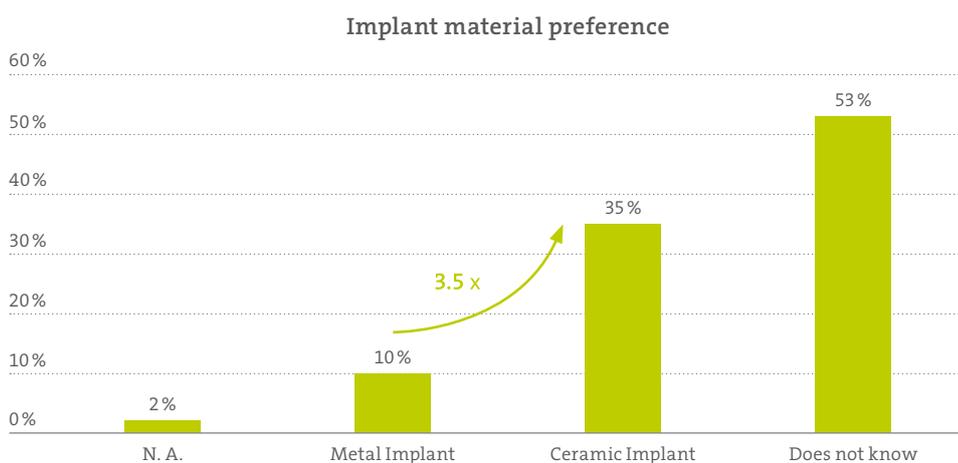


Fig. 1: Given the choice, 35 % of 250 patients would opt for a ceramic implant.

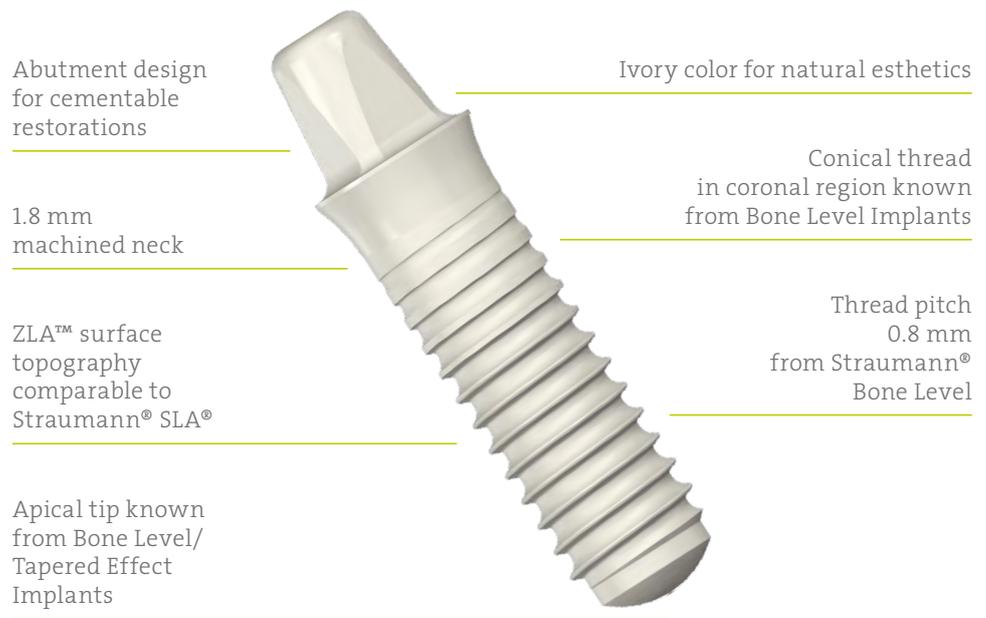
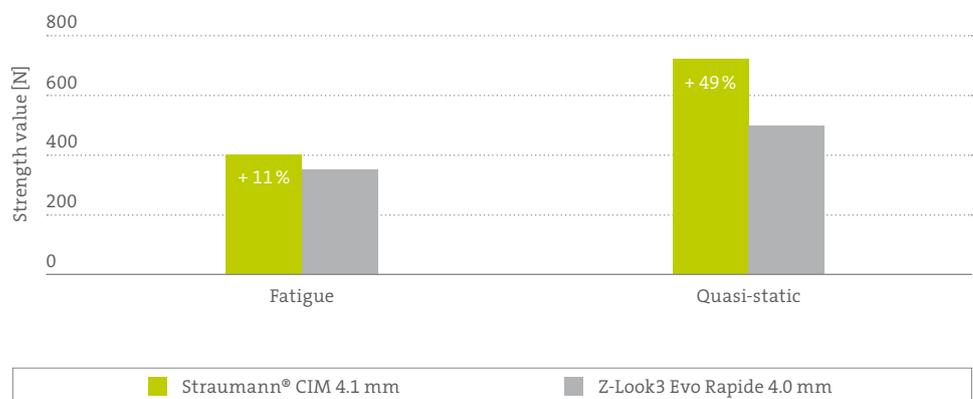


Fig. 2: Material and design properties of the Straumann® PURE Ceramic Implant

Based on decades of experience and know-how in implant dentistry

With the PURE implant line, there is now a new solution available which is backed by Straumann's decades of experience in research and product development. This means that it comes to the market with the supporting evidence and highest quality manufacturing standards that you can expect from a member of the Straumann® Dental Implant System.

Fig. 3: Compared to the current market leader in monotype ceramic implants (z-systems, Germany), the Straumann® PURE Ceramic Implant showed higher strength properties in mechanical tests².



- ➔ Revolutionary healing patterns based on pre-clinical studies^{3,4} indicate high predictability and allow comparison of ZLA, Straumann® PURE's implant surface, with Straumann's classic SLA® surface.
- ➔ Excellent soft tissue integration, as shown by pre-clinical data⁵.
- ➔ New levels of Straumann quality standards:
Every single Straumann® PURE Ceramic Implant that leaves the production facility has to pass a mechanical strength quality check before being delivered to the customer.

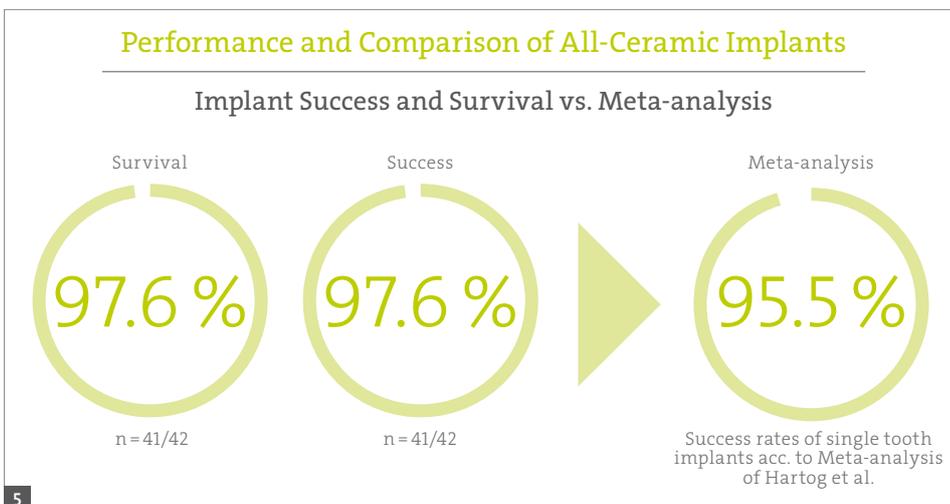
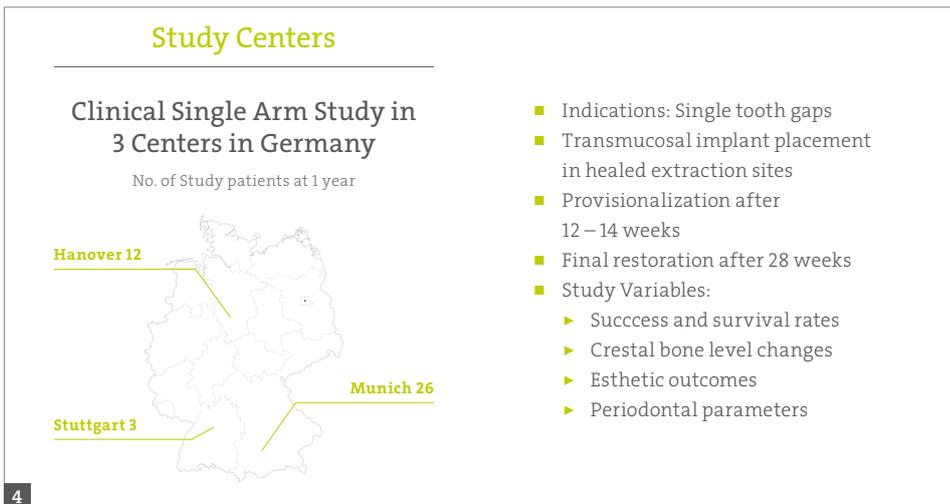


Fig. 4/5: Impressive results after one year follow-up of a clinical multi-center study.

Samples from the case series study

Case 1: Surgery and prosthetic reconstruction: Dr. Mario Rocuzzo, Periodontist with private practice in Turin, Italy.

Case 2: Surgery: PD Dr. Dr. Claude Jaquiéry, Dr. Stefan Röhling, Clinic for Cranial-Maxillofacial Surgery, University Hospital Basel, Switzerland. Prosthetic reconstruction: Fabienne Glenz, Dental Surgeon, Clinic for Reconstructive Dentistry and Myoarthropathy, University Dental Clinics, Basel.



Fig. A1: Tooth 25 had been lost due to caries; tooth 24 is an implant. The distally attached cantilever was removed a few days before surgery.



Fig. A2: The ceramic implant placed in position.



Fig. A3: The final crown was placed six months after surgery. The picture shows that ten months post-op, the mucosa has recovered impressively.

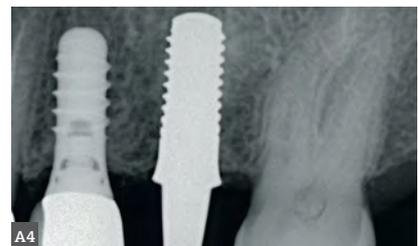


Fig. A4: Final X-ray.



Fig. B1: Initial situation: loss of the central left incisor due to trauma. Picture shows clinical situation prior to implant placement.



Fig. B2: Clinical situation 3 months after implant placement, prior to the temporary prosthetic reconstruction.



Fig. B3: Clinical situation after soft tissue management, with a long-term temporary restoration in full occlusion.



Fig. B4: Radiograph directly after implant placement.

Wide interest shown by clinicians in Central and Western Europe

During a preparative pre-launch phase, the Straumann® PURE Ceramic Implant was presented to a limited group of clinicians in Germany and Switzerland. The large number of customers who showed an interest in the topic indicated the increasing popularity of and need for a ceramic implant from Straumann.

In September 2013, more than 170 German Platinum Customers gathered together in Hamburg to be introduced to the product. The scientific lecture by Dr. Knhia and Dr. Gahlert – who have placed more than 150 Straumann Ceramic Implants in their practice in Munich – covered the specific properties of the Straumann® PURE Ceramic Implant and its surgical and prosthetic procedures, as well as the history, development and current status of all-ceramic implants in dental implantology. The lecture was followed by an academic exchange during which all questions about PURE were openly discussed. In Berne, the product was introduced to all Swiss Platinum and Gold customers at a similar event.

Additionally, a group of renowned opinion leaders from Western European countries were invited to the Straumann Headquarters in Basel in November, where they had the opportunity to get to know all of the “secrets” of the new implant and to delve into the new product.

► Scientific references of this article: www.straumann.com/stargetref



The Straumann® PURE Ceramic Implant in numbers:



of Straumann® PURE Ceramic Implants tested before delivery to the customer.



success rate with Straumann® PURE Ceramic Implants in a clinical study.

0 Straumann® PURE Ceramic Implants that have fractured after one year.

Fig. 6: Dr. Michael Gahlert sharing his experience with the Straumann® PURE Ceramic Implant, Straumann Headquarters, Basel, Switzerland.

Fig. 7: Participants in the Western European Introduction Event in Basel.

Fig. 8/9: Dr. Heinz Kniaha presents the PURE implant in Hamburg, Germany.

Straumann® Roxolid® SLActive® Implants



STRAUMANN
SCIENTIFIC REVIEWS

More Than Evidence – a Commitment to Science

The Straumann® Dental Implant System is one of the best documented systems in implant dentistry. Our dedication to research provides the information you need to know: **our products work**. What we have learned in more than 60 years of research in different scientific fields has been the source of inspiration for our numerous innovations. Scientific data provided by long-term studies confirm the reliability of Straumann products, and continue to drive the development of new quality standards.

Visit our Science section on:
www.straumann.com/science

Higher security in all indications

Roxolid® is a unique implant material combining both excellent biocompatibility and high mechanical strength. Roxolid® is a metal alloy composed of ~15 % zirconium and ~85 % titanium which leads to an increased mechanical resistance compared to pure titanium. A higher mechanical resistance of titanium-zirconium alloys compared to pure titanium has been reported by Kobayashi et al. 1995. Roxolid® Implants have an up to 40 % higher fatigue strength than comparable titanium implants (Bernhard et al. 2009). In addition, it has been shown that titanium-zirconium alloys have a better biocompatibility than titanium (Ikarashi et al. 2005).

Today, dentists and their patients expect not only a successful dental implant treatment but also a short and predictable healing time. Straumann® SLActive® is a chemically modified hydrophilic surface. In preclinical studies, it was shown that the osseointegration process of the SLActive® surface is accelerated compared to the SLA® surface (Buser et al. 2004, Schwarz et al. 2007). A shorter healing time does not only allow early implant loading but also increases the security by shortening the critical healing phase. Beyond that, Roxolid® Implants with the SLActive® surface showed osseointegration properties which were at least as good or even superior to those of titanium implants with the SLActive® surface (Gottlow et al. 2012, Bo Wen et al. 2013).

Also in human studies, it was proven that the osseointegration process is accelerated for implants with the SLActive® surface (Oates et al. 2007, Lang et al. 2011). Furthermore, it was demonstrated that implants with the SLActive® surface can successfully be used in immediate and early treatment protocols without compromising on performance or predictability of the implant therapy (Nicolau et al. 2013, Bornstein et al. 2010, Buser et al. 2013). These conclusions are supported by the preclinical findings of a shortened healing phase which indicates an increased security during this critical phase of implant therapy. Further clinical studies showed that Roxolid® SLActive® Implants are equally effective as titanium implants (Barter et al. 2012, Al-Nawas et al. 2012, Freiburger et al. 2012). In these studies Roxolid® SLActive® Implants reached success and survival rates of 97 % or higher after two years – similar as reported for titanium implants. Also crestal bone level changes of less than 0.2 mm per year following the year after implant placement have been documented for Roxolid® SLActive® Implants.

Predictable treatment success even in challenging cases

Many patients have difficult health conditions which could compromise the treatment outcome of the implant therapy. Especially in challenging indications, the use of an implant system which is clinically tested and for which the performance is documented in scientific literature is mandatory to minimize the risk of treatment failure.

Straumann® Roxolid® SLActive® Implants have been tested in very challenging indications and successful treatment outcomes were documented. Clinical studies have been performed in the following challenging clinical situations:

- Implant placement in the horizontally augmented maxillary sinus, 97 % survival rate after one year (Lindgren et al. 2010 et al.)
- Dehiscence defects after implant placement, 100 % survival rate after one year (Van Assche et al. 2013)
- Early implant placement in the posterior maxilla, 100 % survival rate after one year (Roccuzzo & Wilson 2009)
- Treatment of irradiated patients in the head and neck area, 100 % survival rate after 14 months (Heberer et al. 2011)
- Treatment of patients with poorly controlled type II diabetes, 98 % survival rate after 16 weeks (Khandelwal, et al. 2013)
- Immediate loading of overdentures supported by two implants, 99 % survival rate after up to 40 months (Stoker et al. 2011)
- Rehabilitation of atrophic maxilla supporting an overdenture, 100 % survival rate after up to 16 months (Cordaro et al. 2013)

These studies impressively document that SLActive® Implants can also successfully be placed in very challenging indications and patients with difficult health conditions.

Practice differentiator offering new treatment possibilities

Many clinicians routinely treat patients with a limited quantity of crestal jaw bone. In these situations, implants with a regular diameter or length can only be placed if reconstructive or regenerative techniques will be applied. These techniques can be very invasive for the patient as well as time consuming and expensive. Above all, there is also the risk that these treatments fail. Smaller-sized implants could overcome the need of reconstructive or regenerative therapies and are therefore an attractive alternative. Benic et al. 2013 compared Ø 3.3 mm Roxolid® Implants to Ø 4.1 mm titanium implants. In this study, it has been found that both implants performed equally successful, reaching 100 % success and survival rates after one year. Chiapasco et al. 2012 used Ø 3.3 mm Roxolid® Implants in the lateral posterior areas as an alternative treatment option to bone regeneration or reconstructions. In the study, 100 % success and survival rates were found after up to 19 months.

In a non-interventional study, which was performed in 40 centers in 7 countries, 603 Roxolid® Implants were placed in 357 patients (Freiberger et al. 2012). The study reported a survival rate of 98 % and a success rate of 97 % after two years. Clinicians also documented that for 54 % of the placed implants a bone augmentation procedure could be avoided by using Ø 3.3 mm Roxolid® Implants. Very short SLActive® Implants were used in a study by Slotte et al. 2012 in patients with atrophied mandibular ridges. In this study, 4 mm Straumann® Standard Plus Short Implants were used to avoid vertical augmentation procedures and an implant survival rate of 94 % after five years was documented. Roxolid® Implants offer a higher tensile strength compared to titanium implants and therefore can be used also in challenging indications. The hydrophilic SLActive® surface enhances the healing process compared to hydrophobic surfaces. The accelerated osseointegration process makes the implant also an excellent treatment option for medically compromised patients.

“Short implants often provide a completely different strategy for implant placement”



Christoph Hämmerle
Prof. Dr. med. dent.

Professor and Chairman of the Department of Fixed and Removable Prosthodontics and Dental Material Science and the Vice-Dean of the Medical Faculty for the Center of Dental Medicine, University of Zurich, Switzerland. Clinical focus on the comprehensive treatment of complex, partially edentulous patients. Main scientific interests: biological and prosthetic aspects of fixed reconstructions on teeth and implants. Numerous scientific publications. Reviewer of several scientific journals and member of various scientific organizations, notably the ITI. Board member of the SSRD, president of the Osteology Foundation and past president of the EAO.

An interview on short implants with Prof. Ch. Hämmerle (Switzerland), held 2013 at the 22nd Annual Scientific Meeting of the European Association of Osseointegration in Dublin.

Professor Hämmerle, looking at the recent publications in implant dentistry we see an increased interest in short implants. What can be considered a short implant and what do you think is driving the professional interest in these implants?

There are different definitions for short implants. The EAO consensus conference defined them as 8mm and less.

« The key interest is that with short implants you can provide less invasive treatments. Furthermore, short implants can lead to fewer complications and less morbidity. »

They decrease the costs, can deliver more predictable outcomes and are also easier to perform in many cases. With short implants sometimes you need less complex diagnostics and you run fewer risks. All these factors make short implants an attractive option, often providing a completely different strategy for implant placement.

You mentioned many cases where short implants make a difference. What do you see as indications that can be treated with a short implant?

Short implants would primarily be used in the posterior segment of the jaw, as in the anterior segment there is generally a sufficient bone height for a regular implant. In addition, in atrophic mandible and maxillary, where the vertical space is limited, short implants are also very valuable.

The latest improvements in implant materials and surfaces promise higher osseointegration and mechanical stability of the implants. Do you believe these properties can compensate for the smaller implant dimensions?

Yes, absolutely, this has clearly been demonstrated – medium-rough surfaces provide a better anchorage in the surrounding bone compared to smoother

type of surfaces. This property is the key that makes shorter implants possible. Previous studies have shown that short implants with 10mm or less had a lower rate of osseointegration and lower clinical success, but we don't see the same in implants with medium-rough surfaces.

I think advances in implant surface technologies offer the kind of anchorage that implants with more traditional surfaces could not achieve in the past. Hence, short implants can deliver a good anchorage nowadays in situations with limited bone height.

« As implant technology progresses, I expect to see more innovative solutions which provide less invasive, less costly and more straightforward type of treatments. I believe such progress is in the interest of the dentist, the patient and the industry. »

What kind of indications do you see as a challenge for this implant? Could a short implant be a good alternative to avoid vertical augmentation?

Most publications describe the use of the short implants primarily in the posterior region. Short implants are valuable in the maxilla to avoid sinus lift augmentation, while in the mandible they help to avoid vertical ridge augmentation.

A challenging indication could be a patient requiring a short implant because of a reduced bone height, but still needing an additional augmentation procedure due to the insufficient bone width. Alternatively, in the sinus area, in cases of soft bone, it would be difficult to get a good anchorage with a short implant. The healing time needs to be increased and implant loading delayed to ensure an undisturbed osseointegration process.

Do you have any additional comment about short implants?

As implant technology progresses, I expect to see more innovative solutions which provide less invasive, less costly and more straightforward type of treatments. I believe such progress is in the interest of the dentist, the patient and the industry.



Did you know...

...that Straumann has launched a new line of short Implants? With only 4 millimeters of endosteal length, they are the shortest tissue level implants on the dental market and they have been specifically developed to treat patients with vertical anatomical restrictions. Furthermore, Straumann® Standard Plus short implants are backed by 5 years of clinical evidence in the posterior severely resorbed mandible*, featuring the proven Standard Plus design, the new Loxim™ snap-shot transfer piece, and compatibility with the entire SynOcta® portfolio¹. The implants can be placed in accordance with the standard surgical procedure of the Straumann® Dental Implant System, by using the newest instruments that have been adjusted with a 4mm laser mark.

** Only straight abutments recommended.*

► Scientific references of this article:
www.straumann.com/stargetref

Periodontal and peri-implant tissue management in the esthetic zone

Riccardo Verdecchia, Italy

Initial Situation

A 38-year old male patient with non-remarkable medical history presented for a vertical fracture of the maxillary left central incisor (21). The patient showed a synergy of risk factors which had led to the fracture: absence of ferrule effect, short posts, bruxism and an occlusal overload due to premature contacts during protrusive movements (Figs. 1-3).

Treatment Plan

Based on the clinical and radiographic examination, the esthetic risk profile was determined to range from “moderate” to “high” on the Esthetic Risk Assessment (ERA). Horizontal and vertical bone defects were detected with a distance of 6 mm from bone level to the contact points (Fig. 4). A delayed implant placement (Type 2)

was planned in order to achieve complete healing of the soft tissues before the GBR procedures and implant placement. To minimize the number of surgical appointments and reduce the overall morbidity, a simultaneous approach of periodontal and implant surgery was preferred. The periodontal tissues of 11 were modified simultaneously with implant surgery on regio 21 with two different objectives: a) increase the ferrule effect and move the mid-facial soft tissue margin slightly more upwards to improve the harmony of the scalloped mucosal line (Fig. 5) b) hide the dark shine-through of the root with a connective tissue graft (Fig. 2). The initial phase involved the removal of the fractured 21 utilizing a periosteal elevator. The extraction socket was filled with a collagen plug to achieve stabilization of the blood clot during the initial healing of the soft tissues. A Maryland bridge was cemented the same day and modified to avoid interferences during protrusive movements (Fig. 6).



Fig. 1



Fig. 2

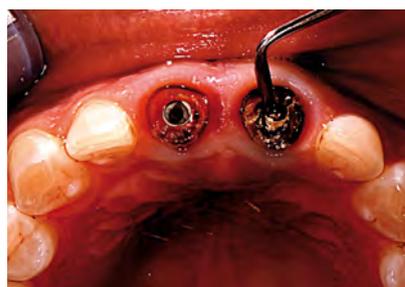


Fig. 3



Fig. 4

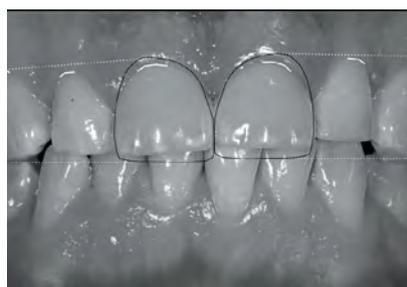


Fig. 5



Fig. 6

Procedure

First surgical procedure. Six weeks later, periodontal and implant surgery was performed. A mid-crestal incision was executed on the implant site. At this stage, scalloped incisions were applied on the palatal and buccal sides of 11. Afterwards, bucco-oral osteotomies on the root were executed for the previously described goals. The tiny interproximal bone peak was treated with due respect and left untouched (Fig. 7).

Subsequently, a Straumann® Bone Level implant (Ø 4.1, SLActive® 12 mm) was inserted in a correct three-dimensional position to replace the missing 21 (Fig. 8) Shortly afterwards, autogenous bone chips were harvested locally and applied to cover the dehiscence-type defect. A layer of Straumann® BoneCeramic (400-700 µm) was placed to overcontour the external surface of the facial bone.

The grafting material was covered by a non-cross-linked collagen membrane in accordance with GBR principles (Fig. 9). A “double-layer” technique was used to improve the stability of the membrane. Once perfused with blood, the membrane could be easily adapted to the alveolar bone crest and did not require any additional fixation. Tension-free primary wound closure was achieved with horizontal mattress sutures after splitting the periosteum at the base of the flap (Fig. 10). The ovate pontic was ground to avoid pressure on the tissues below. The provisional bridge was then cemented again (Fig. 11).

Second surgical procedure. The stability of the provisional bridge allowed an extended interval (4 months) in order to check the final flattening of the ridge contour due to remodeling of the alveolar bone. A roll-flap technique was then regarded as adequate to compensate a mild horizontal discrepancy on 21 (Figs. 12, 13). Meanwhile, a



Fig. 7



Fig. 8



Fig. 9



Fig. 10



Fig. 11



Fig. 12

very thin (1 mm ≥) connective graft was harvested from the premolar area of the palate and inserted with a tunnel technique in a supra-periosteal pouch with the purpose of hiding the dark aspect of the nearby root of 11 (Figs. 14, 15). In both surgical appointments, vertical papillary incisions, which had been deemed as not being necessary, could be avoided.

Prosthetic procedures. A screw-retained provisional crown remained in situ 6 months on the implant waiting for maturation and stabilization of the peri-implant soft tissues contours. During this period, modifications in form, contour and outline were applied to improve the esthetic outcome using a light curing composite material (Fig. 16). Proper implant placement allowed achieving an optimal subgingival final contour (Fig. 17). A customized impression coping was then fabricated to capture and record the transition zone contour generated by the

provisional restoration. For the final restoration, a CAD/CAM zirconia abutment was selected and Straumann® CARES® CAD/CAM technology was used to fabricate the frameworks (Figs. 18, 19). The screw access position allowed the use of a one-piece restoration. The abutment was veneered using a pressable ceramic system. After the try-in and color correction by the lab, the final crown was delivered to the patient and tightened with 35 Ncm. The access hole was sealed with gutta-percha and a light cured composite resin.

The prosthetic procedures on root 11 involved the delivery of a longer golden post in order to reduce the risks of root fracture. For the same purpose it was mandatory to perform a prosthetic preparation on the palatal aspect of the gold abutment to create 1.5 - 2.0 mm of space for the zirconia framework and pressable ceramic. The final goal was to avoid interferences during protrusive movements.



Fig. 13



Fig. 14

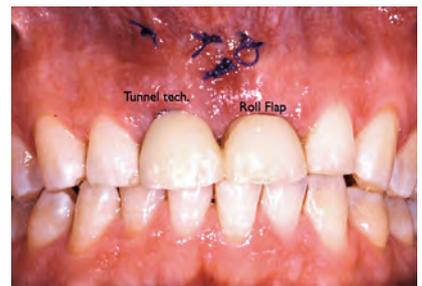


Fig. 15



Fig. 16



Fig. 17



Fig. 18

Conclusion

The surgical and prosthetic challenge in this clinical case was to develop a natural scalloped mucosal line on the upper central incisors and to obtain a good esthetic outcome of the prosthetic crowns, despite the various existing dental/skeletal asymmetries and the bone defect on the implant site.

Of utmost importance was the knowledge of hard and soft tissue remodeling around the implant 21 and around the root 11 after the surgical steps.

Benefits resulting from the conservation of root 11 consisted in the maintenance of the interproximal height of the tiny bone peak which provides support of the papilla mesial to the implant.

This approach was highly beneficial to the natural appearance of the prosthetic crowns (Figs. 20, 21). The peri-apical x-ray (2 years of follow-up) shows stable crestal bone levels around the implant (Fig. 22).



Fig. 19

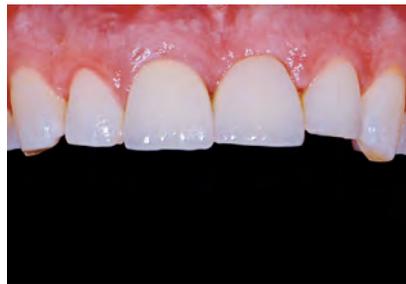


Fig. 20



Fig. 21

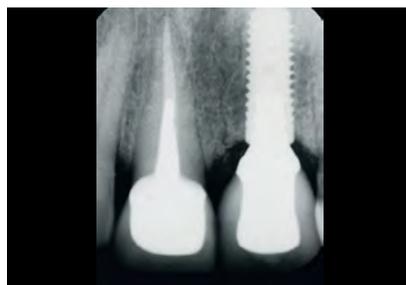


Fig. 22



Riccardo Verdecchia
D.M.D.

Private practice in Rome/Italy with a focus on Periodontology, Implant Dentistry and Fixed Prosthodontics. Member of the ITI and the Italian Society of Periodontology (SIDP).

riccardoverdecchia@hotmail.com

More efficiency – more connectivity – more options

As we see the trend in prosthetics increasingly move towards digitalization, every dental lab nowadays faces the challenge of having to deliver faster and cheaper restorations. Digital dentistry is here to stay and will strongly develop in the forthcoming years, as CAD/CAM prosthetics and digital impression-taking are becoming increasingly popular. Straumann cares about what matters to you and your business and we are committed to adapting our service and products to your clinical and professional needs.

The dental workflow is rapidly evolving

Digitalization will have a fundamental impact to the dental workflow as processing steps will be optimized or removed in the digital environment and the importance of standardization will increase. In this context, dental professionals will increasingly value time and solutions that focus on simplicity, efficiency, and time/cost saving. As the market for dental restorations is developing at fast pace, labs are constantly challenged to make the right decision when it comes to fulfilling their primary product needs of high efficiency, cost effectiveness and long-term reliability.

Are these the issues weighing on your mind?

- I need a solution that addresses price sensitivity while securing the original implant-abutment connection.
- I want to reduce the steps needed to finalize a restoration.
- I want to have a free, easier and simpler access to the Straumann® CARES® portfolio.

Everything you need: Straumann® CARES® Customized Solutions

Straumann® CARES® Customized Solutions provide you with everything you need in your practice or laboratory. We are excited to introduce our newest solutions, intended to further drive efficient workflows and provide cost-effective restorations for your dental laboratory.



CARES® X-Stream™, the one-step prosthetic solution, with extended portfolio including the solid but flexible Straumann® Variobase™ Abutment. See p. 50.



CARES® Abutment, TAN with anatomic shape allowing for direct veneering and faster finalization of your restoration.



CARES® Screw-retained Bridges and Bars on abutment level and the new bar design CARES® Milled Bar for removable prosthetics.



Easy access to Straumann® CARES® prosthetics without any additional investment in CAD/CAM equipment thanks to the connectivities to the the 3shape Dental System.

Why? The advantages at a glance

Efficiency	<p>The CARES® X-Stream™ solution offers new options when combining the Straumann Variobase™ Abutment, the full-contour crown or coping of zerion®, IPS e.max CAD, coron® and polycon® ae. Labs with connectivity to CARES® X-Stream™ can enjoy the benefits of “one scan, one design and one delivery”.</p>
	<p>With the CARES® abutment, TAN, labs with experience in the veneering of titanium can waive the coping and can rapidly finalize restorations.</p>
	<p>In addition to the CARES® Prosthetic App for eligible Dental Wings and 3M Lava users (see note on availability below), a new interface provides connectivity for 3Shape users who want to have access to CARES® customized abutments and other applications¹. No extra training is needed and the existing system can be used.</p>
	<p>Labs working with the Straumann® Prosthetic System can use our CARES® Scan & Shape service to obtain CARES® prosthetic components¹. With additional offerings and a revamped web platform, the service offers great convenience without having to invest in additional CAD/CAM equipment.</p>
Cost-effectiveness	<p>The new options provided by our CARES® X-Stream™ solution offer strong incentives for price-sensitive labs that are facing price pressure, or which use non-Straumann titanium bonding bases, and are looking for access to the original Straumann abutment portfolio.</p>
Precision	<p>Straumann implants with Straumann prosthetics are the perfect match in every respect. We know the dimensions, tolerances and material properties of our components – to the last detail. What is your benefit? Peace of mind through working with high-tech components designed to harmonize optimally. It is therefore no surprise that the Straumann® original implant-abutment connection showed a 97%¹ success rate in long-term clinical performance.</p>

Note on availability: Connectivity options and product offerings can vary by country. Please contact your local Straumann representative for further information.

► Scientific references of this article: www.straumann.com/stargetref

The one-step prosthetic solution

Efficiency – the key to competitiveness

Development in the field of digital dentistry today is shaped by exciting, fast-paced innovations. For Straumann, the key to competitiveness and improved profitability lies in an efficient digital workflow, streamlining clinical steps and simplifying long processes, while ensuring thorough validation of the Straumann® CARES® workflow to deliver high-quality prosthetic results.

CARES® X-Stream™ is an innovative example of this guiding principle: this application provides a single-tooth full prosthetic solution, with flexibility of use, to restore Straumann® implants. With only one scan and one simultaneous and adaptive prosthetic element design, all required prosthetic components (e.g. abutment and corresponding crown) are manufactured in the validated Straumann environment and arrive together in a single delivery with excellent fit of the components.

With the release of the Straumann® CARES® Visual software version 8.8 in Q2 of 2014, we will extend our CARES® X-Stream™ offering with further streamlined prosthetic solutions.

In addition to the one-piece CARES® Abutments made of titanium and zirconium dioxide, we will provide a broad range of product combinations with the Straumann® Variobase™ Abutment.

Thanks to its minimal body size combined with an optimal force distribution¹, the Variobase™ abutment is a strong foundation for highly flexible prosthetic restorations.

It is now available within the CARES® X-Stream™ solution with numerous restorative options (see Fig. 2), namely:

CARES® customized coping: efficient hybrid abutment solutions

As an example, the combination of the coron® cobalt chromium coping with the Straumann® Variobase™ abutment offers a highly cost effective and venerable hybrid abutment solution.

CARES® customized full contour crowns: highly cost effective prosthetic restorations

The association of the zerion® zirconium dioxide (available in nine LT² shades and four HT³ shades) or IPS e.max® CAD lithium disilicate glass-ceramic⁴ (available in 40 shades) full contour crown with the Straumann® Variobase™ abutment allows drastic simplification of the prosthetic processing steps for pleasing esthetic results.

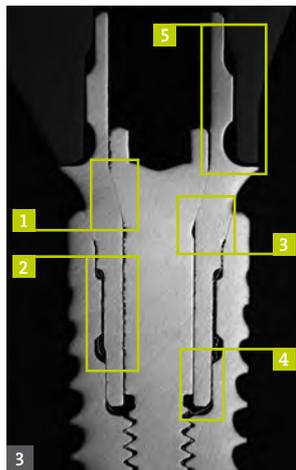
Naturally, all CARES® customized copings and full contour crowns are available with a screw channel hole, specifically adapted to the Straumann® Variobase™ Abutment, ensuring easy, guided placement.

The copings or crowns also demonstrate an even load distribution and very limited rotational play while allowing a flexible cement gap.

¹ Patent pending for the engaging mechanism between the Straumann® CARES® Variobase™ Abutment and the corresponding coping or crown – ² LT: Low Translucency – ³ HT: High Translucency – ⁴ Manufactured by Ivoclar Vivadent AG.



Fig. 1: CARES® X-Stream™ – the complete implant-based single-tooth full prosthetic restoration in one step: one scan, one design and one delivery.



- 1 Avoiding peak stresses with conical screw head
- 2 Providing precise guidance at assembly with radial contact surfaces (screw and abutment)
- 3 Assuring a sealed connection with tight conical implant-abutment interface
- 4 Giving high stability with deep implant abutment engagement
- 5 Patented³ engaging mechanism between Straumann® CARES® Variobase™ Abutment and Coping

Figs. 2+3: The original Straumann® implant-abutment connection, for a validated long-term performance (Fig. 3: View from CT scan).

Our customers will further benefit from all advantages of the current CARES® X-Stream™ product combination solution:

- Validated long-term performance with the original Straumann® implant-abutment connection (see Fig. 2)
- Higher productivity thanks to one design, one order and one delivery of the prosthetic components required for a patient restoration case
- Increased efficiency due to the highly precise prosthetics ensuring best fit between components

Additionally, when using CARES® customized abutments or the Straumann® Variobase™ abutments with their dedicated coping, the design can be customized for a patient-specific emergence profile. The cement line for the crown can also be optimally placed to ensure easy cementation management and ideal soft tissue support.

Fig. 4: The CARES® X-Stream™ family



Fig. 5: CARES® X-Stream™ restorative options as of April 2014

		Full contour crown or coping					
		3M™ ESPE™ Lava™ Ultimate ⁴ (resin nano ceramic)	zerion® (zirconium dioxide)	IPS e.max® CAD (lithium disilicate)	coron® (cobalt chromium)	ticon® (titanium)	polycon® ae (PMMA)
CARES® Abutment, zirconium dioxide ¹		✓	✓	✓	X	X	✓
CARES® Abutment, titanium ²		✓	✓	✓	✓	✓	✓
Straumann® Variobase™ Abutment ³		X	✓	✓	✓	X	✓

¹ Not available for the Soft Tissue Level NNC and WN platforms; all copings or crowns are available without screw channel holes – ² Not available for the Soft Tissue Level NNC platform; all copings or crowns are available without screw channel holes – ³ Not available for the Soft Tissue Level NN platform; all copings or crowns are available with or without screw channel holes – ⁴ Only available for full contour crowns

3M™, ESPE™ and Lava™ are trademarks of 3M or 3M Deutschland GmbH. Used under license in Canada. IPS e.max® is a registered trademark of Ivoclar Vivadent AG, Liechtenstein.



More than efficiency.
Cost-effective
workflow solutions.



What does efficiency mean to your business?

- Newly introduced one-step and cost-effective implant restorations, titanium base and full-contour crown were added to Straumann® CARES® X-Stream™'s 1 scan, 1 design and 1 delivery
- Directly venerable TAN Abutment for a quick path to your final restoration
- New CARES® Screw-retained Bridges and Bars increase treatment flexibility
- Ability to connect your CAD/CAM system to Straumann® CARES® Prosthetics – no additional investment or training required, visit: www.straumann.com/connect2cares

60 YEARS

 **straumann**
simply doing more

Intraoral scan with 3M™ True Definition, realization with CARES®

Marcus Engelschalk, Germany

Introduction

The combination of intraoral scans and CAD/CAM-based restorations is today regarded as a standardized procedure in conventional prosthetics. The basis is formed by investigations on the accuracy of the scanning methods employed^{1,2} as well as the resulting models^{3,4} and restorations^{5,6,7}. The question that then arises is the realization of this workflow in implant prosthetics. However, the special requirements profile of implants for intraoral scanning have led to changes in the information to be transferred as well as the principles of present implant workflow. This needs to be observed and realized when developing a scanning protocol for implant-borne restorations.

Initial situation

A 48-year old female patient presented with a gap which had been left untreated for many years following ex-

traction of tooth 46. The adjacent teeth had been restored prosthetically, were free of caries, and, in the sense of single tooth reconstruction, it was decided to abstain from a bridge restoration and to provide restoration with an implant. Due to lack of loading, bone resorption had already commenced in buccolingual direction. The soft tissue conditions were healthy and displayed a broad region of keratinized gingiva.

Procedure

Treatment planning: an implant-borne single crown was planned to reconstruct the lost tooth 46 in terms of a cemented full ceramic reconstruction on a titanium abutment. The patient did not wish to have possible augmentation measures in the bone area.

Surgical procedure: implant placement in regio 46 was performed with a crestal incision only, while maintain-



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6

ing the papillae in regio 45 and 47. As planned, a Straumann® Standard Regular Neck (RN) implant (Ø4.8mm, SLActive® 12mm) was inserted in central position. Healing was submerged for 2 months and after uncover, a healing cap was left in situ for 4 weeks for soft tissue healing (Fig. 1).

Prosthetic procedure: for the intraoral scan, the healing cap was replaced by an intraoral Scanbody (CARES® RN Mono Scanbody, D 4.8mm, H 10mm) (Fig. 2). Here, the occlusal inclined section was aligned buccally on the implant. Drying of the mouth situation was performed with OptraGate (Ivoclar Vivadent GmbH) and the entire area to be scanned was powdered slightly (Fig. 3).

With the aid of the 3MTM True Definition Scanner both the mandible could now be imaged with the Scanbody as well as the maxilla as opposite jaw (Figs. 4, 5). For digital bite registration, the scan of habitual intercuspitation,

the Scanbody was unscrewed again as the standard height of 10.0 mm did not allow unimpaired occlusion in this case (Fig. 6).

This was followed with checking the digital image of the Scanbody in regio 46 for complete image capture of all surfaces as well as the approximal areas of the adjacent teeth. The occlusal surfaces as well as the antagonist relationship of the opposite jaw and bite registration, could now be checked prior to defining the precise reconstruction area regio 46 with appropriate marking of the different data volumes for later transfer (Figs. 7, 8). As part of the order to the laboratory within the software navigation of the 3MTM True Definition, the implant data were described next to the patient data, for example, information on the position of the tooth, abutment material (titanium/zirconium dioxide), implant platform (WN, RN, NN, RC or NC) as well as the type of restoration (abutment and/or super-construction).



Fig. 7



Fig. 8



Fig. 9



Fig. 10



Fig. 11



Fig. 12

The generatively fabricated dental model was produced by Innovation MediTech GmbH following online transfer via Straumann® CARES® on the basis of the STL files. Then the appropriate repositionable Straumann® RN implant analog was placed in regio 46 (Figs. 9, 10). In parallel, the planned abutment, customized via Straumann® CARES® X-Stream™, and the corresponding zirconium dioxide coping were fabricated and transferred to the model situation (Figs. 11-13). Veneering of the crown cap was performed using appropriate veneering porcelain (Figs. 14-16).

For integration purposes, the CARES® titanium abutment was screw-retained firmly intraorally in the implant, and after try-in and adaptation of the peri-implant gingiva this was followed by the definitive cementing of the crown using RelyXTM Unicem (3M ESPE) (Figs. 17, 18).

Conclusion/discussion

The success of implant treatment does not only depend on correct implant surgery. In fact, prosthetics can contribute to avoiding peri-implantitis and to the long-term success of an implant by additionally creating an optimal emergence profile. In this context, the individual abutment is to be regarded as the basis for successful implant prosthetics. The intraoral scan and related dispensing with plaster models ensure that the digital prosthetic workflow is integrated right from the start.

This leads to significant simplification of the fabrication steps at increased precision and avoids sources of error. Individual abutment shapes can thus be designed and fabricated optimally on a CAD/CAM basis together



Fig. 13



Fig. 14



Fig. 15



Fig. 16



Fig. 17



Fig. 18

with the corresponding restoration. In addition, this procedure enables less changing of screws and manipulation on the implant, which can lead to a reduction of peri-implant bone resorption^{8,9}.

Dental technicians and prosthodontists should be aware of the importance of an emergence profile at the time of temporary and definitive prosthetics. It should therefore be the goal of any fixed implant restoration to come as close to these requirements as possible via customized reconstructions.

Maintaining gingival dimensions and health are a decisive factor for the long-term success of implant reconstructions, after all, a healthy and functional peri-implant gingiva forms a border and barrier against the penetration of micro-organisms and bacteria. This enables long-term preservation of the peri-implant bone if one disregards bone resorption induced by malfunction or overloading.

► *Scientific references of this article: www.straumann.com/stargetref*

3M™ True Definition Scanner



Marcus Engelschalk

Dr. med. dent.

Degree in general dentistry with a focus on oral surgery and implantology. Own practice in Munich, Germany, since 2000. Affiliated dentist at the Arabella hospital in Munich since 2002. Focus on oral surgery and implantology, as well as fixed prosthetics with particular consideration to esthetics. Master of Science in Laser Dentistry, post-graduate program at the Rheinisch-Westfälische-Technische-Hochschule (RWTH) in Aachen in 2007. Regular speaker at national and international conferences, author and editorial board member.

Joint practice for periodontology and implant dentistry
Dr. Marcus Engelschalk
and PD Dr. José Gonzales
Frauenplatz 11
D-80331 Munich

info@dr-engelschalk.de

A complete digital workflow through collaboration with 3M ESPE and Innovation MediTech



Connectivity is the key

State-of-the-art intraoral scanning systems allow to prepare, execute and control the restoration workflow on a completely digital basis – from impression through design to manufacturing. The connectivity between the Straumann® CARES® System and intraoral scanners improves the patient treatment workflow (through the combination of digital technologies used by dentists and labs) as well as accuracy, simplicity and productivity. With the interface to the 3M™ True Definition Scanner, Straumann expands its range of scanners with connection to the Straumann® CARES® System.

Direct access to Straumann CARES® customized restorative solutions

The 3M™ True Definition Scanner is the 2nd generation device for intraoral scanning from 3M. The built-in 3D-In-Motion video technology provides a true replica of the oral anatomy in extraordinary detail. The small and ergonomic scanner has the familiar feel of a hand piece and its size also allows for one-handed scanning.

According to 3M, 99.84%¹ of restorations made from a 3M™ True Definition Scanner digital replica are successfully placed without requiring a remake.

Indications with Straumann® CARES®

- CARES® X-Stream™ – the one-step single tooth implant based prosthetic solution:
1 scan, 1 design and 1 delivery
- Single tooth abutments
- Crown and bridge restorations
- Inlays, onlays, veneers



Thanks to the Straumann® Validated Workflow, dentists using the 3M™ True Definition Scanner will be able to send scanned data directly from chairside to dental labs using the Straumann® CARES 8.6 system.



3M™ True Definition Scanner

The 3M™ True Definition allows to communicate treatment information between dentist and CARES lab such as:

- Overall patient situation
- Restoration preparation
- Restoration definition and order
- Adjacent teeth information
- Occlusion information



Straumann® CARES® System 8.6

The benefits

The digital workflow

- Design and ordering of Straumann® prosthetic components for customized restorations with the original Straumann® abutment-implant connection
- Validated workflows and connectivity

Straumann® CARES® customized restorations

- High-quality prosthetic restorations
- Broad range of applications²
- Large choice of materials³
- CARES® X-Stream™ provides a single-tooth implant-based full prosthetic solution with only one scan and one simultaneous and adaptive prosthetic element design (see p. 50 for more information)

3M™ True Definition Connectivity

Improvement of communication between dentist and dental lab

- Digital impressions are quickly available to the technician
- They contain more visual information than conventional impressions
- They can be saved and discussed between dentist and dental lab during the restorative process

Easy to use through “plug & play” approach

- No additional installation or setup required
- Connection and data flow is validated (i.e. ready to use and tested by 3M™ and Straumann®)⁴
- CARES® users can operate with the familiar CARES® Visual software without additional training

Note on availability: The solutions and services described in this article are available in those countries where the 3M™ True Definition Scanner is also already available.

¹ Based on 3M ESPE field evaluation which produced 1015 clinical cases from 23 systems in the U.S. and Europe, April-December 2012. – ² Inlays, onlays, veneers, full anatomic crowns, copings, bridges, customized abutments. Only the Straumann® Mono Scanbody can be used for CARES® Abutments. CARES® SRBB are currently not possible from intraoral scan sources. – ³ 3M™ ESPE™ Lava™ Ultimate Restorative (Resin Nano Ceramic), zirconium dioxide, IPS e.max® CAD lithium-disilicate glass-ceramic, IPS Empress® CAD leucite glass-ceramic, VITA BLOCS® Mark II and VITA BLOCS® TriLuxe, feldspar ceramic, titanium, cobalt-chromium, polyamide, PMMA-based acrylate resin. – ⁴ Same setup and process as with the iTerm scanner from Align Technology, Inc., Orchard Parkway, California.



A Dreve Company



“Virtual Model Builder” for a seamless workflow and significantly reduced turnaround time

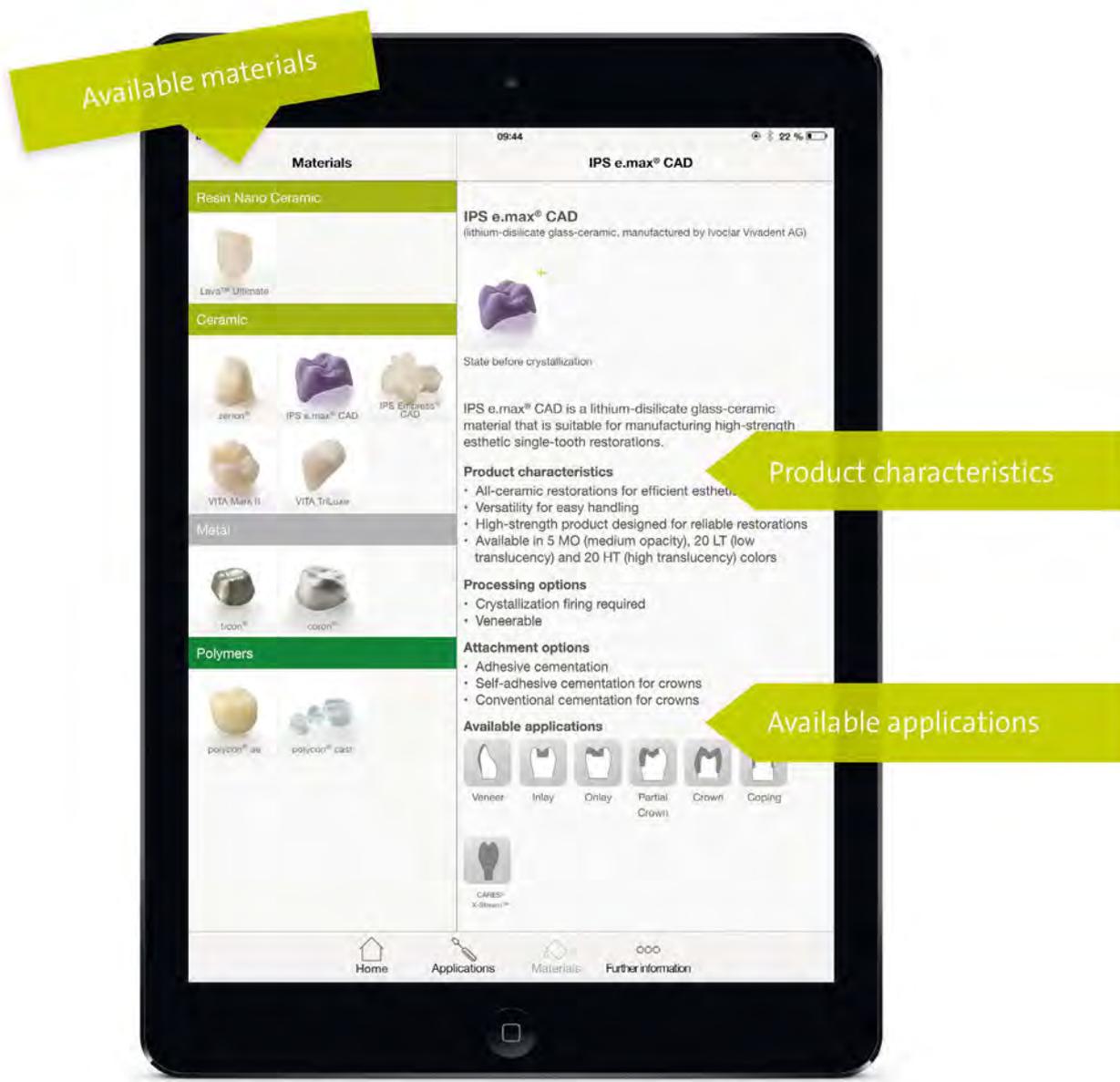
With the “Virtual Model Builder”, a DWOS software module in CARES® 8.6 for a fully digital model creation process, labs can order the corresponding high-precision resin model from Innovation MediTech. As a key feature, the Innovation MediTech model provides a proven socket for a Straumann® repositionable implant analog which holds the implant restoration precisely and securely in the model while the lab technician finalizes the restoration. Generatively manufactured dental models have to meet the highest demands regarding precision, haptics, optics and processability – for which the FotoDent® LED A. model materials are particularly well suited.

Your reliable guide to Straumann® CARES®

Find the right Straumann® CARES® prosthetic solution!

Straumann® CARES® has a broad range of applications and a leading material offering. But how do you find the right tooth- or implant-borne prosthetic solution for your current indication?

The easy-to-use, intuitive Straumann® CARES® Guide – available as an App or web application – can help. The Straumann® CARES® Guide is constantly updated to ensure that you are kept informed about the latest products available.





Straumann® CARES® Guide App for iOS

The Straumann® CARES® Guide App helps you to find the right Straumann® CARES® prosthetic solution directly on your mobile iOS device*. In addition to giving an overview of the available tooth- and implant-borne prosthetic solutions and their corresponding materials, the Straumann® CARES® Guide App also provides you with more detailed information such as processing instructions and image galleries.

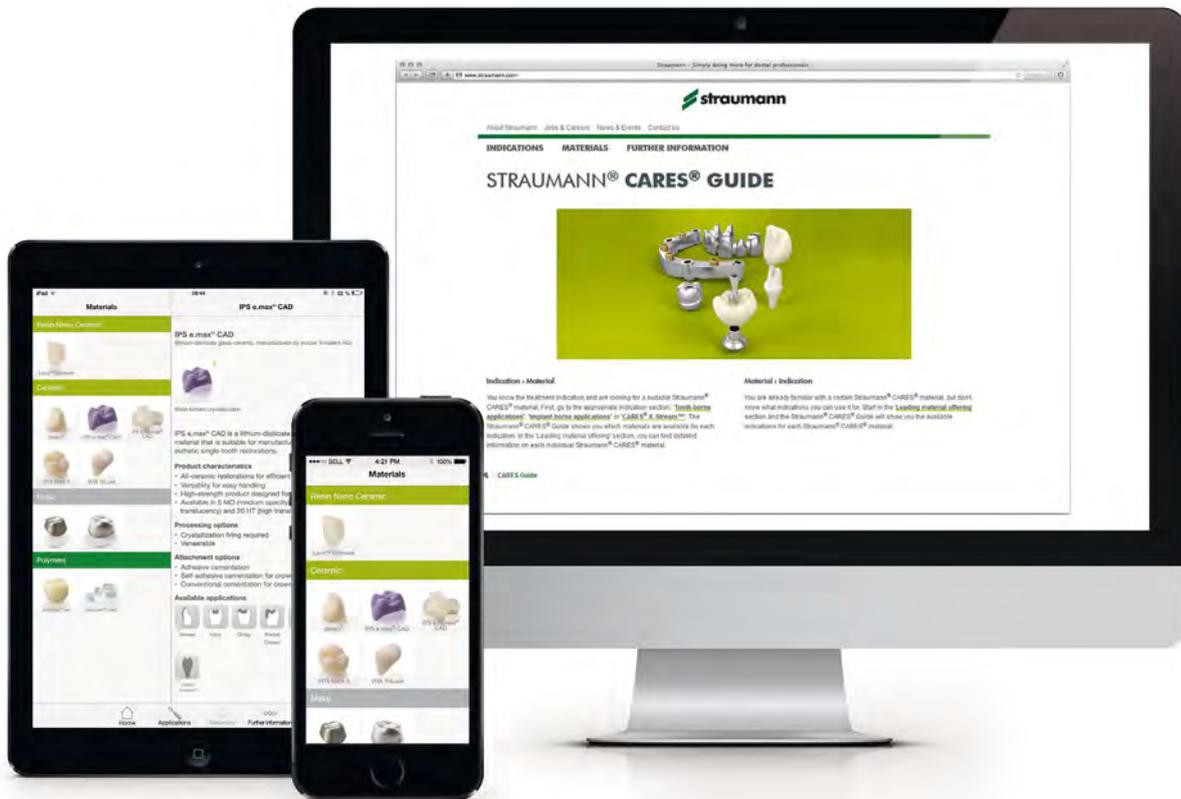


Straumann® CARES® Guide web application

The Straumann® CARES® Guide is also available as a web application, offering the same options as the App version.

www.straumann.com/cares-guide

*iPad®, iPad® mini and iPhone®



Availability: Switzerland, Germany, Austria, Netherlands, Belgium, USA, UK, Canada, Sweden, Norway, Denmark, Finland, France, Italy, Spain, Hungary, Czech Republic, Australia and New Zealand.



New components for fixed screw-retained full-arch restorations

Straumann's aim is to support you in providing prosthetic components which help you to meet your patients' specific needs.

Increasing patient expectations are challenging dental professionals to find new treatment options

Patients suffering from impending loss of teeth or edentulism are no longer willing to compromise - and they don't have to. When removable dentures are not the preferred option, dental professionals are challenged to provide a fixed denture that is stable, esthetic and fully functional. In addition to this, patients want to have the solution quickly and working in a short time.

First Phase: Optimization of the Straumann® Bone Level Prosthetic line

In the initial phase, the prosthetic portfolio for screw-retained full arch restorations is optimized, introducing the new Straumann® Screw-retained Abutment Portfolio and combining it with the scientifically proven Straumann® Bone Level Implant line.

The sleek abutment design offers increased prosthetic flexibility for fixed screw-retained restorations, even in challenging clinical situations where tilting the implant is necessary. Furthermore, Straumann will introduce new custom-milled framework components for final fixed prostheses (on implant- as well as on abutment-level).

Benefit from outstanding product properties

Roxolid® SLActive implants. Roxolid® SLActive is Straumann's outstanding material/surface combination. Roxolid® has been specifically designed for the use in dental implantology and offers unmet mechanical strength¹. This allows dental professionals to use reduced diameter implants preserving bone and reducing invasive grafting procedures².

In combination with the **unique SLActive® surface**, Straumann implants offer increased predictability even in challenging protocols^{3, 4, 5, 6, 7, 8, 9}, broader treatment possibilities even for patients with compromised health^{10, 11, 12, 13, 14, 15}, and safer and faster treatment, from six to eight weeks down to three to four weeks in all indications^{16, 17, 18, 19, 20, 21, 22, 23, 24}.



Shaping your patients' quality of life

When it comes to treating edentulous patients, Straumann offers a broad range of options: removable or fixed, budget-friendly or premium, straight-forward or complex. However, treating edentulous patients is more than just combining different technical components: these patients are looking for a solution to enhance their current situation. They want to be able to chew and enjoy food, feel self-confident and attractive, and avoid any pain. Therefore, dental professionals actually improve their edentulous patients' quality of life when they treat them successfully – high quality and scientific evidence are just one part of the equation.

Fixed screw-retained restorations with the new Straumann Screw-retained prosthetics and CARES® custom-milled frameworks

Straumann® Screw-retained Abutments were designed to achieve excellent esthetic and functional results. The abutment dimensions allow for fixed screw-retained full arch restorations according to the patients' individual clinical situation, even in cases where tilted implants are inevitable. Furthermore, the portfolio allows conventional immediate temporization. For final dentures, Straumann CARES® Visual will provide custom-milled frameworks on implant- as well as abutment-level.

Straumann® Screw-retained Abutments

The new Straumann® Screw-retained abutments are designed to provide flexibility when treating edentulous patients with Straumann® Bone Level implants. These new abutments are available with different angulations and gingiva heights (see list below). The abutment connector can be used for either multi or single-unit restorations; it has the same geometry throughout all platforms which allows for a small component portfolio.



Material	TAN
Implant compatibility	CrossFit® connection
Abutment features	Ø 3.5 mm and Ø 4.6 mm platform, three angulations (0°, 17° and 30°), three gingiva heights (1 mm, 2.5 mm, 4 mm)
Availability	April 2014

Straumann® CARES® custom-milled frameworks on implant- as well as on abutment-level

The Straumann® CARES frameworks are designed for treating edentulous patients and satisfying high demands in reliability and esthetics.



Material	Titanium Gr 4 and coron® (CrCo)
Implant compatibility	Straumann® Soft Tissue Level RN & WN synOcta® connection and Straumann® Bone Level NC & RC CrossFit® connection, available on 2-10 Implants
Abutment compatibility	Straumann® Screw-retained Abutment, available on 2-10 Abutments
Availability	May 2014

► Scientific references of this article: www.straumann.com/stargetref



4 Straumann® Bone Level Implants placed in the maxilla, 2 posterior tilted with RC 30° Straumann® Screw-retained abutments, 2 anterior abutments NC straight. ▶

The new Straumann eShop

Tailored to your needs

Thanks to the new Straumann eShop, you can order our products round-the-clock and benefit from a large number of attractive advantages.

What does the new eShop offer?

Simplified order process and navigation:

- Simple, filter-based product search
- Modern navigation
- Practical ordering function (e.g. order templates)
- Simple check-out procedure
- Overview of all your orders

All relevant product information at a glance:

- Product description
- Technical information
- Recommended supplementary products
- Current availability
- List price

Only online:

- Special offers for Straumann eShop clients
- Extended payment options
- Free postage*

How do I register?

You already have a Straumann eShop user account?

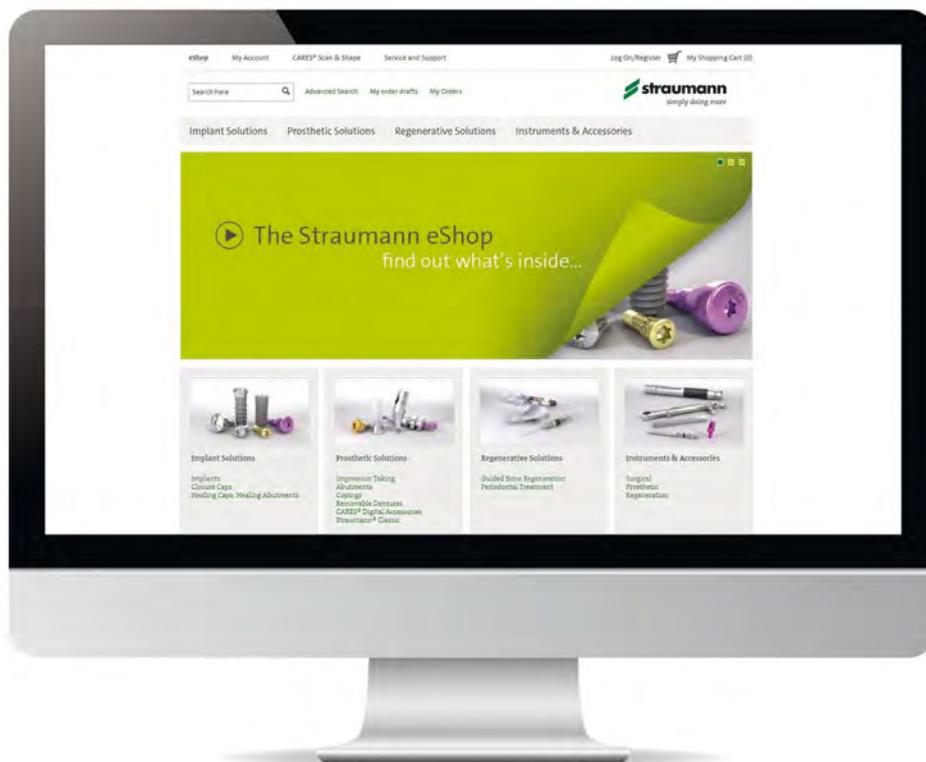
In this case, you can log in directly with your existing user account and access all the new functions.

You are already a Straumann client, but have never visited our eShop?

Please sign up directly in the eShop-website (www.straumann.com/eshop) to apply for a user account.

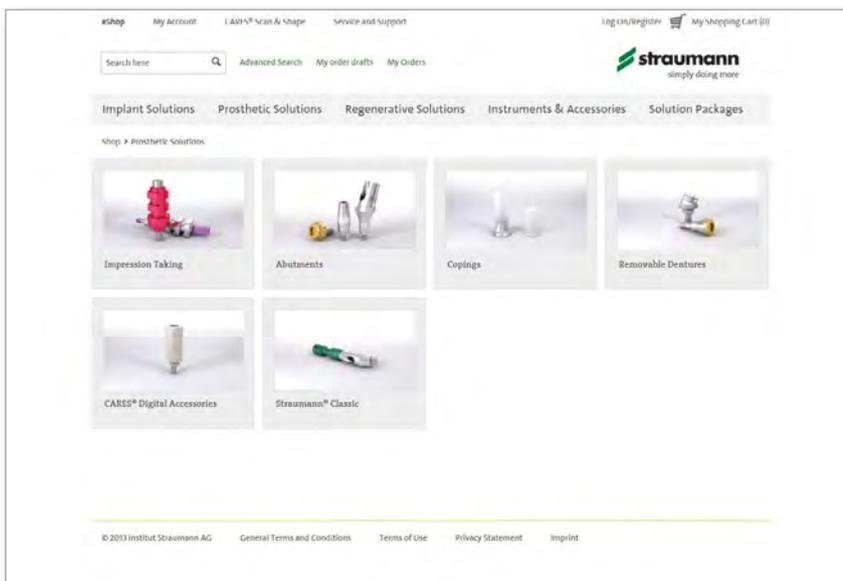
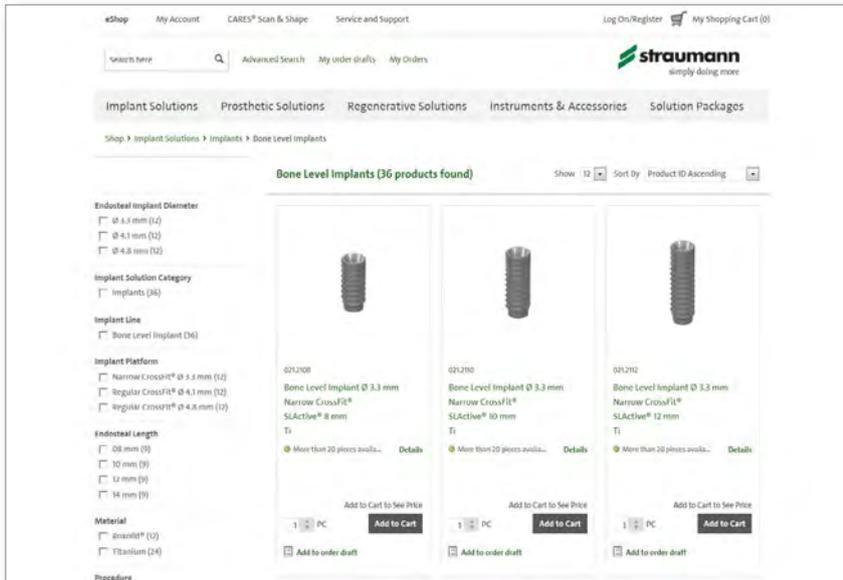
We will contact you soon afterwards. In the meantime, you are free to use the eShop as a product catalogue.**

If you have any questions, please consult the **Service & Support** page or contact your local **Straumann customer services**.



* The criteria for free postage may vary from country to country.

** You will not be able to access prices and order functions until you are registered.



Now log in to shop from our entire product portfolio and to benefit from our special eShop introductory offers.

Availability

The new Straumann eShop is available in the following countries: Switzerland, Sweden, Norway, Denmark, Finland and the United States. The following countries will be added in the coming months: United Kingdom (May), Germany/Austria/France/Italy (June), Australia/New Zealand (July), Japan (August), Canada/Spain/Portugal (September).

Languages

German, English, Spanish, French, Italian and Japanese.

We look forward to serving you in the Straumann eShop!

www.straumann.com/eshop

Recognizing and implementing innovation potential at an early stage



The Straumann Idea Portal – turning ideas into innovations

Sometimes good ideas come by chance and sometimes by dint of hard work. However, they rarely come just when you need them. So how do companies manage to find the necessary flash of inspiration to turn a multitude of ideas into new, marketable products and services? Straumann is the first company in the sector to set up a global, web-based innovation platform. Since January 2014, the Straumann Ideas site has been available for clients, researchers, clinicians and employees to pass on their innovative ideas to us. After approving the legal conditions for data transfer, interested parties are guided through the three-part idea registration process. The sender then receives a concluding confirmation e-mail including the reference number and the estimated processing time. This triggers the internal evaluation process.

ideas.straumann.com

An interview with Marco Gadola.

Mr Gadola, what is the role of innovation at Straumann?

Innovation has always been the core of Straumann's corporate philosophy. To quote Steve Jobs: "Innovation distinguishes between a leader and a follower." Roxolid® and SLActive® are two Straumann technologies that have significantly influenced the field of dental implant technology. The introduction of the first clinically approved ceramic implant in October last year underlines our aim of extending our lead in the field of innovation.

It is important to take an unbiased, open-minded approach toward new methods and possibilities. It would be arrogant to assume that everything that previously guaranteed success will continue to do so in the future.

What does Straumann hope to achieve with its new innovation platform?

Our industry is currently in a state of change. In the future, growth drivers in the premium segment will include sales processes, innovative solution concepts and incremental product improvements at a very high level. It's essential to recognize and implement this innovation potential at an early stage.

The new ideas website will thus play a key role in registering ideas and, in particular, in communicating them. Even internal employees will be able to submit their ideas via this website and related processes.

Once someone has input an idea, what happens next at Straumann?

Our newly created innovation forum will evaluate all the submitted ideas every month. If an idea has commercial potential and/or if it matches our strategic portfolio planning, it will be followed up systematically.

If not, one of the innovation experts from the forum will personally contact the sender by letter or telephone to notify them that their idea has been rejected. We consider it to be of utmost importance to give rapid, competent feedback to the senders of ideas.

Do idea senders need to worry about protecting their intellectual property rights when they use the website?

No, of course not. Only information classified as “not confidential” is entered via the platform. Anyone with an idea that is not legally protected, for example, by a patent should only complete the general descriptions and classifications. If there is general interest in the idea, the innovation forum will arrange for our legal department to draw up a confidentiality agreement to protect the idea sender.

Will Straumann also use modern media to generate ideas?

Yes. From the ITI World Symposium 2014 onward, interested parties will be able to find out about Straumann’s current innovation campaigns via our social media channels Facebook, Twitter and YouTube, with the “Straumann Ideas” website as the central communication platform. We consider this kind of modern communication with the outside world to be essential for innovative collaboration with our current and future customers.



Marco Gadola
CEO Straumann Group

The members of the Straumann innovation forum, from left to right: Holger Herweg (Head of Customer Experience Center), George Raeber (Head Product Management SDIS), Andreas Nitschke (Head Product Management Digital), Francisco Faoro (Head of Product Development), Christopher Appert (Head Research Group), Florian Kirsch (Head of Portfolio Management) and Stefan Kugler (Senior Product Manager). Not shown: Dirk Probst (Head Product Management Regenerative) and Paul Delgado (Head Customer Solutions).



Know how patients think and feel

Gerhard F. Riegl

Heighten success with data from patient research

Success hinges not only on knowing how your target group thinks, but also needs to take account of emotional factors. The major Internet players are already living proof of a trend that going forward is also expected to establish itself in dental practices offline: today, when they visit the world wide web, customers of Amazon, Google, Ebay & Co are better recognized and understood and provided with more individualized support than they are in “real”, non-virtual life thanks to big data in real time and learning systems.

If a dentist wants to promote their strengths as a highly qualified specialist, they would be well advised to draw upon the valuable findings of patient research. Surveys conducted in line with state-of-the-art scientific standards offer the best access to a holistic understanding of the “patient” target group in this regard. The insights provided by these surveys then form the basis for a new method of dealing with patients that can help dental practices set themselves apart from the competition in the long run. Such surveys also play a crucial role in shaping patient demand in practices.

Fig. 1: Patients feel before they think, and emotional criteria such as the feeling of security play a crucial role in how they rate a practice. ►

Nowadays, people's attitudes are changing even faster than dental treatment options. The first lapse in judgement dental experts traditionally make when dealing with their patients is that they already know everything about the target group since they work with them on a day-to-day basis.

Long-term research provides a picture of important trends over recent years

For six years Straumann has been collaborating with the Prof. Riegl Institute in Augsburg/Germany to offer its customers market-intelligent patient and referrer surveys in eleven European countries (since 2013, also in the USA). The long-term scientific patient research (2006-2014), based on 20,000 surveys in more than 500 German dentist practices, reveals some very interesting trends over the last four years.

Soft factors are becoming more important for patients

While modern-day patients are increasingly well informed, they still need support to help them make a decision and put the wide range of information available in a proper context. The criteria many patients use to evaluate their primary dental practice have changed considerably over the past four years (see Fig. 2). The key unique selling proposition in terms of patients' emotional perception is a feeling of security - that is, the feeling that they are in good hands at the practice they have chosen. Dental practices must provide tangible “Excellence in Humanity” and actively offer patients the feeling of security they are looking for.



What is better at my dental practice compared to other practices that I know or have heard of.

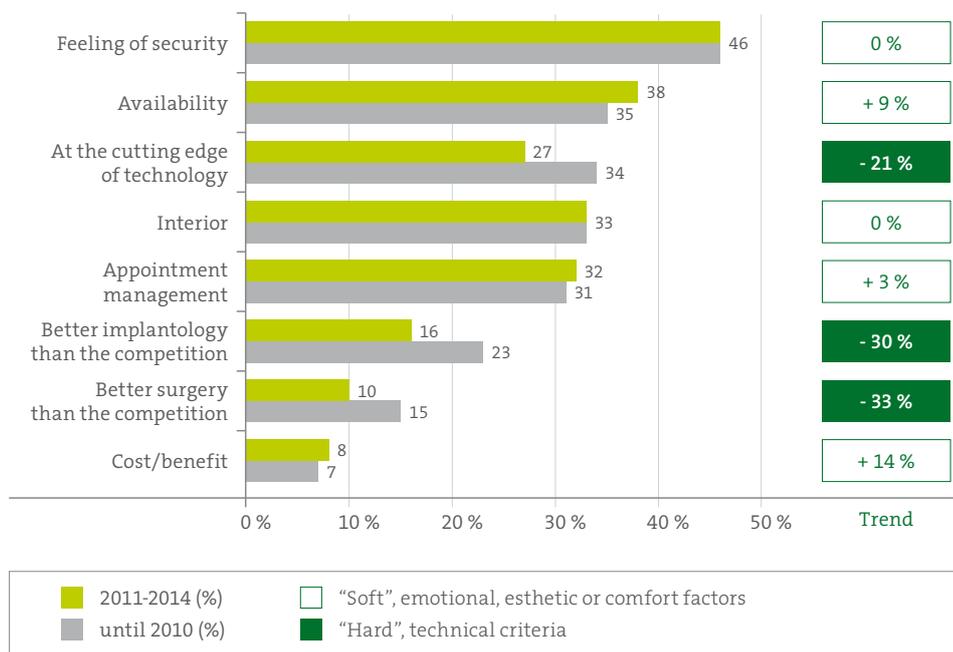


Fig. 2: Unique selling propositions for dental practices from a patient perspective, trend 2010-2014

The list shows that the soft and ultimately rather vague criterion “feeling of security” is the undisputed front-runner. Meanwhile, technical evaluation criteria (“The practice must be technically superior to the competition”) have become considerably less important since 2011. Indeed, even a cursory glance reveals that secondary criteria such as availability, interior aesthetics and flexible appointments appear more decisive to many patients than “Better implantology” or “Better surgery”.

Specialist expertise as key unique selling proposition is no longer enough

Dentists have continually expanded their specialist expertise over recent years. As our studies have shown, however, it is precisely this aspect of specialist expertise - one which, for understandable reasons, is held in esteem by practitioners - that is losing its appeal among patients as an evaluation, differentiation and profiling criterion. In other words, due to the generally higher level of specialist expertise, it is becoming more difficult for dentists to gain a true competitive edge by focusing on quality aspects alone. At the same time, soft factors that have a direct impact on the patient experience such as practice organization and availability are starting to play an increasingly crucial role in helping patients identify with their practice.

The Prof Riegl benchmarking method: market-intelligent patient surveys

Surveys are conducted in a convenient, unbureaucratic and patient-friendly manner with empathy effects

150 professional patient questionnaires per practice as an analysis and advertising tool for the practice. Survey objective: *“We want you to want us”*.

5 questionnaires for teams and line managers for motivation and professional development as brand ambassadors of the dental practice

Individual and confidential report on practice qualities, opportunities and gaps with unique benchmark comparison with practices in the region

Practice benefit: Valuable findings to foster the acquisition of self-empowered patients and provide guidance on how to better deal with patients, as well as to help exploit efficiency, profiling and growth potential – all professional blinkers removed. Increase in patient demand for implant treatments thanks to better explanations.

Quality remains a key prerequisite

This shift is due not to the inadequate “layman” appreciation on the part of patients for the quality of work done by their dentists, but rather to the extremely high quality demands that are placed on dentistry as a profession. What boils down to is this: high-quality and impeccable services by dental specialists are simply taken by patients as a given. From a patient perspective, today there are just as many good dentists to choose from as there are good car brands. Specialist expertise is thus no longer perceived as a scarce commodity. As far as patients are concerned, if one dentist doesn't meet their needs, they can just move onto the next one.



You are more likely to get lost if you believe you already know the way. *Chinese wisdom*



Emotional factors form the basis for patient decisions

The findings of brain researchers and behavioural economists can provide us with a more detailed explanation of the reasons behind these changes in perception: namely, that the theoretical concept of homo oeconomicus - where behaviour is always based on logical and rational criteria - does not really exist in empirical reality. “People feel before they think” should thus also be the new solution for dental practices. It follows from this that your practice must be “felt” better than others. If a patient has a good feeling about your practice from the outset and they do not have any personal experience to go on in terms of specialist expertise and quality of service, then it is soft factors such as comfort and convenience that will drive their decision and ultimately their satisfaction. Thus, the selective perception of the practice in the form of positive preconceptions becomes a self-fulfilling prophecy.

Changed perception by patients

The perception of implant therapy and the role played by the dentist carrying out the procedure are changing as well. Our studies indicate that today patients are increasingly including the partners referred by their primary dentist in their evaluations (see next page).

Statement that is agreed with	Proportion 2011-2014 (%)	Trend since 2010
I regard it as positive that the implants are inserted directly by my dentist and not by a surgeon (or I am at least indifferent to this fact).	67	- 7 %
Implant therapy places a large financial strain on me.	68	0 %
It is important for me to know about the implant system and the type of materials used.	45	+ 7 %
The diplomas and certificates hung on the walls of the practice form my main professional basis for assessment.	43	- 13 %
I also base my opinion of the professional quality of my practice on the surgeons my primary dentist refers for implant treatments.	23	+ 22 %
I rate my general knowledge of dental implants as "good".	38	- 10 %

Fig. 3: The perception of implant therapy and the role played by the dentist carrying out the procedure are changing.

The Internet as a source of information for dental issues: important, but still potential for growth

While more and more patients are using the Internet as a source of information on practices and potential methods of treatment, our studies show that today a maximum of "only" 29 % of patients on average use the Internet to find out about dental issues. Here, the proportion differs according to age group.

For example, senior citizens aged 60-69 - an especially important age group for implant therapy - are relatively active users of the Internet in this regard at 22 %, an increase of 47 % compared with 2011. The more information that is in circulation, however, the more people lean on personal acquaintances and trustworthy experts when making important health decisions, and do not want to rely solely on information on the Internet or their dentist's homepage.



Gerhard F. Riegl

Prof. Dr. rer. pol.

Lecturer at University of Augsburg, specializing in Marketing Management International. Founder and scientific director of the Institut für Management im Gesundheitsdienst in Augsburg/Germany. Trailblazer of systematic dental practice marketing in German-speaking countries. Analyst for various sectors of the healthcare industry. Expert in benchmarking in the field of dentistry and healthcare. Author and speaker in the pharmaceuticals and healthcare sector.

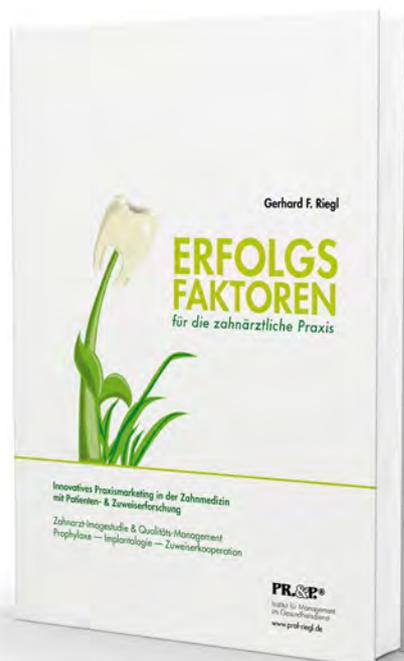
www.prof-riegl.de

► *Note: All of the findings and conclusions contained in this article are based on data arising from surveys and studies carried out by Prof. Dr. Gerhard Riegl at the Institut für Management im Gesundheitsdienst and do not necessarily have to converge in every respect with the opinions of Institut Straumann AG, Basel.*

Conclusion: “Excellence in Humanity” paves the way for “Excellence in Dentistry”

The way your patients feel and think are more inextricably linked than may appear at first glance. Previously partially neglected soft factors should be seized as an opportunity to build trust and influence profiling. Word-of-mouth and personal recommendations among patients, acquaintances and friends - something that is supported and indeed promoted by practices - is also becoming more and more important.

Patients can also be motivated to engage in word-of-mouth advertising by means of questionnaires. Thus, the question as to whether the patient is satisfied with their practice and would recommend it to others triggers the word-of-mouth advertising itself; this is one of the questions that is an integral component of the Prof Riegl patient survey.



Further reading (available in German only):

Riegl, G.F.: *Erfolgsfaktoren für die zahnärztliche Praxis, Innovatives Praxismarketing in der Zahnmedizin mit Patienten- & Zuweiseforschung Zahnarzt-Imagestudie & Qualitätsmanagement, Augsburg 2010, ISBN 978-3-926047-18-2.*



Kaltzimmer

Beispiel für praktische Stromversorgung

BOSCH

“Cell-to-Cell Communication – Periodontal Regeneration”

Interdisciplinary series: “Cell-to-cell communication”

The publication “Periodontal Regeneration” published in 2014 in cooperation with the Institute Straumann is the 3. issue in the interdisciplinary series “Cell-to-Cell Communication” of the Quintessenz publishing house. This new film/book genre under the scientific supervision of PD Dr. Dr. Bernd Stadlinger and Prof. Dr. Dr. Hendrik Terheyden makes the invisible visible with a fascinating visualisation of the biodynamic and intercellular processes in the scientific world of dentistry. With the cooperation of the international advisory board with Prof. D. Cochran (USA), Prof. S. Jepsen (Germany), Prof. A. Sculean (Switzerland), Prof. Y. Izumi (Japan) and Prof. D. Bosshardt (Switzerland), the new film focuses on periodontal regeneration. This innovative film/book genre opens up new avenues in further education for the transfer of knowledge between research, teaching and practice, and also actively supports dental consultation with the supplementary patient version of the film.

Format: DVD video with hard cover, Deluxe Edition incl. Expert and Public Version · language: English · order number: 5792 · ISBN: 978-1-85097-267-9

The exceptionalism of teeth

As compared with bone, the human teeth are not subject to remodeling, in other words, continuous regeneration and degeneration. This resistance of our teeth to physiological restructuring processes is remarkable. The reason for this phenomenon can be found in the periodontium and the tooth cementum. The new scientific 3D film “Periodontal Regeneration” visualizes the mechanisms acting there and displays the regeneration of the tooth retention apparatus consisting of gingiva, alveolar bone, periodontium and tooth cementum in case of disorders.

Content structure: phases 1-4

Phase 1 looks at the development of the cementum which covers the root of the tooth and is interspersed with Sharpey's fibers which connect it to the alveolar bone via the root sheath (**Fig. 1**). Certain properties of the periodontal hard tissue are the cause behind the comparatively resistance of the tooth root against resorption which is described in **Phase 2**. A build-up of pressure due

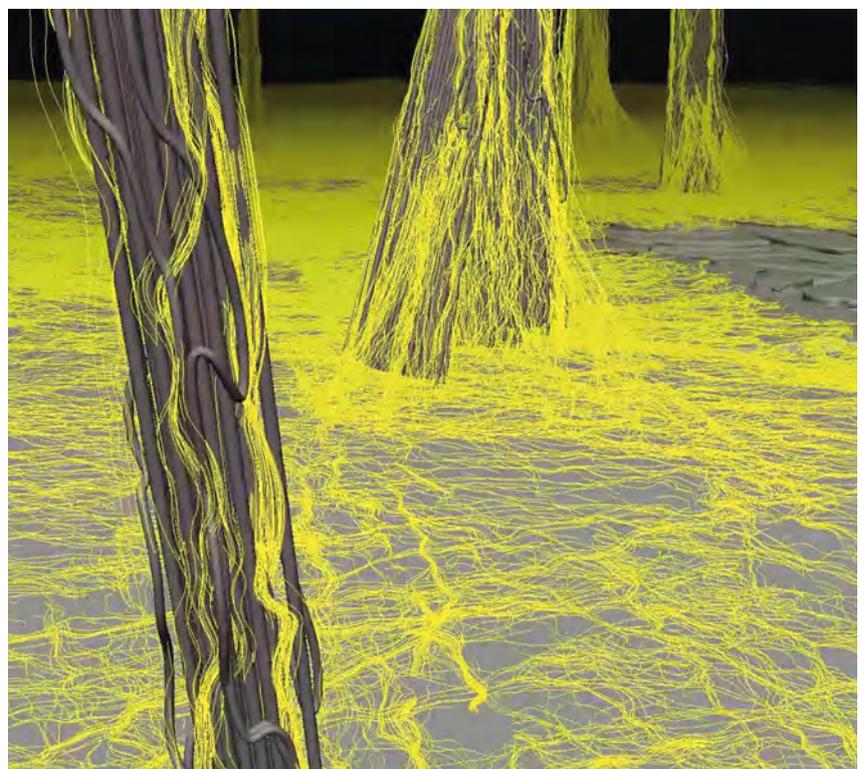


Fig. 1: Sharpey's fibers

to orthodontic tooth movement results in degeneration of the bone without remodeling the teeth per se. The complex biodynamic processes involving osteoclasts (Fig. 2), messenger substances and other cell types are illustrated effectively. If the periodontal protective shield of the teeth is penetrated, for example through dental trauma, the body's intrinsic repair mechanisms are activated as a rule.

However, if the damaged area is too large, the protective cement layer cannot be regenerated. As explained in Phase 3, this leads to an ankylosis. Improvement of cementum regeneration and thus restoration of a fully functional attachment, is shown in Phase 4 (Fig. 1). The protein amelogenin (Fig. 3) plays the decisive factor as part of periodontal regeneration. As in the natural embryonic tooth development phase, exogenous provided

amelogenin can lead to improved cementum regeneration, and thus to regeneration of the periodontium.

Cellular processes at macroscopic, microscopic and sub-microscopic levels

“Periodontal Regeneration” again presents the viewer with an impressive demonstration of the cellular processes at a macroscopic, microscopic and sub-microscopic level. Among others, electron micrographs (Figs. 4 and 5) are used as templates for the main and supporting actors in this film. The new three-dimensional perspective offers spectacular insights into a world of details, and allows experiencing “well-known” knowledge within the captivating context of dental treatment in a didactic motivating and very comprehensible manner for this highly complex topic.

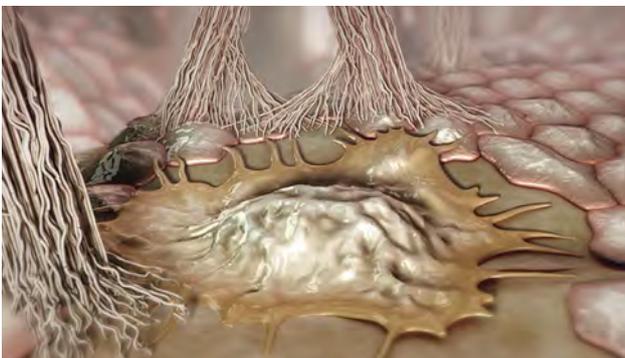


Fig. 2: Bone surface with Sharpey's fibers and osteoclast



Fig. 3: Cells of the root sheath synthesize amelogenin



Fig. 4: Macrophages on glass 800x SEBSE (source: Eye of Science)



Fig. 5: Fibroblast 1800x (source: Eye of Science)

Redefining e-learning in implant dentistry



Stephen Chen
MDS/PhD

Periodontist in private practice in Melbourne, Australia. Senior Fellow in the Department of Periodontology at the University of Melbourne. Master of Dental Science/PhD from Melbourne University. Fellow of the ITI and Chairman of the Education Core Group.

The Online Academy is the ITI's newest and most significant educational offering to date. 24/7 global access to all matters education in implant dentistry in a format that we have never had before. And there is something for everyone:

- Education – access a wealth of knowledge in various educational formats
- Evaluation – assess your knowledge and track your progress
- Documentation – archive and share your own clinical cases

With a global membership of over 16,000, the ITI needs to provide implant education that is readily and widely available and also addresses implant practitioners at every level. The Global Forum of our membership platform ITInet, launched in 2010, has shown that there is a high level of interest in clinical knowledge, expertise and education. E-learning is the obvious answer to address this need and in keeping with the ITI reputation for high quality education the aim is to have the most innovative and complete e-learning offering available worldwide.

In the tradition of the ITI, the educational material for the Online Academy is produced by the ITI community of Fellows and Members and subjected to peer review. All educational material complies with the ITI philosophy of evidence-based treatment for the benefit of patients. The Online Academy runs on a platform that is specifically designed, developed and controlled by the ITI for you.

What does the ITI Online Academy offer?

The ITI Online Academy is designed to adapt to you. Unlike other platforms it learns your preferences and needs and thereby directs you to the most relevant information.

Initially the content comprises:

- Learning Modules providing the theoretical foundation for implant dentistry
- Assessments that allow you to test your knowledge
- Clinical Cases and Videos illustrating the application of clinical concepts
- Lectures from international ITI congresses with renowned clinicians and researchers

Why is the ITI Online Academy different?

You are the focus

First and foremost the Online Academy is focused on you and your educational needs in implant dentistry. This is achieved through free access to dynamic and flexible Assessments that can help identify strengths as well as weaknesses/gaps in your knowledge. Based on these findings the Academy guides you towards learning content specifically suited to your requirements.

Free lifelong access

Anyone can register at no cost for an Online Academy account, explore the curriculum and try out various elements free of charge. In addition, any acquired content will always remain accessible to you and updates to that content are provided free of charge.

Core curriculum

A fundamental aspect of the Online Academy is its unique core curriculum of learning modules that covers implant dentistry in its entirety. The core curriculum is in effect a living textbook in implant dentistry. And in contrast to a textbook its digital format will allow it to be continuously updated and expanded.

Knowledge for all

Online Academy learning modules can be purchased. But they can also be unlocked with “Academy Points” earned from, for example, taking assessments. This is a specific feature designed to ensure that those keen to learn and acquire essential core knowledge for the correct use of implants in dentistry are rewarded for their efforts. It also ensures the Online Academy stays true to the ITI mission “to promote and disseminate knowledge on all aspects of implant dentistry” and the ITI’s status as a non-profit organization that champions the correct utilization of implant dentistry for the benefit of the patient.

Free consensus tool

The Online Academy will feature a searchable database of all the ITI Consensus statements and clinical guidelines from the 3rd, 4th and 5th ITI Consensus Conference that is available for anyone to access free of charge. This is a fantastic and swift route to instant guidance on the comprehensive topics covered by the Consensus Conferences.



Charlotte Stilwell
DDS

Specialist in prosthodontics in private practice in Harley Street, London. Graduate from Royal Dental College, Copenhagen, Denmark. ITI Fellow, Member of Education Core Group and Education Delegate for ITI UK and Ireland.

Free new version of SAC assessment tool

As a new development, the SAC tool will be able to do a combined restorative and surgical assessment. It will also be able to create a separate esthetic risk assessment (ERA) for your cases for comprehensive documentation in your Online Academy case library.

Free online case library

The documentation and presentation of clinical cases is at the heart of professional discussion. With the Academy Case Library, the ITI offers a free cloud-based service that lets you do exactly that. Based on a quick and easy-to-use documentation workflow, you can establish your own library of clinical cases that will be accessible to you from any place connected to the internet.

Supported by the reworked SAC assessment tool, the case library offers you an evidence-based and highly standardized means to establish a comprehensive repository of clinical reports that you can share with other users of the platform. In addition, the case library provides you with the option to submit your own clinical work for review and inclusion in the official ITI Online Academy content.

Your contribution

The Online Academy editorial board will welcome and actively seek your contributions to the official education content available in the Academy. Guidelines for submission of content and criteria for acceptance are already in place. The editorial board will consider clinical videos and case presentations from anyone who wishes to contribute their own clinical documentation to the ITI Online Academy.

Who can use the Online Academy?

The Academy is available to all, that is, Fellows and Members of the ITI as well as non-Members. It provides

(‘Know’ and Know how’) education with assessments through a comprehensive and solid curriculum. It is applicable to all levels of education in implant dentistry including newcomers, practitioners with experience, specialists and post-graduates.

It is aimed at supporting and complementing other education in implant dentistry as part of blended learning including self-directed learning pathways and pre-structured education courses.

What are the educational principles of the Online Academy?

The consensus recommendations of the 2nd ADEE Workshop¹ (Association for Dental Education in Europe) were to ensure that implant dentistry is taught against a background of comprehensive, multidisciplinary patient assessment and treatment planning. This is particularly important as implant dentistry is a fairly recent discipline for most practitioners and its remit overlaps with a number of specialties.

Throughout the Academy, structured, comprehensive patient assessment and treatment planning are clearly in evidence. The ITI SAC Classification² for assessment of patient case complexity underpins an emphasis on safe treatment aimed at predictable and stable long-term outcomes.

The ITI SAC Classification was accepted by the 2nd ADEE Workshop as a best practice reference for case complexity and education with the aim that competencies in implant dentistry should be mapped against it.

The Online Academy has also been designed to have clear, predefined learning objectives mapped to the needs and levels of the learner and offers CPD credits through verifiable assessments.



Fig. 1: Landing page of the ITI Online Academy.

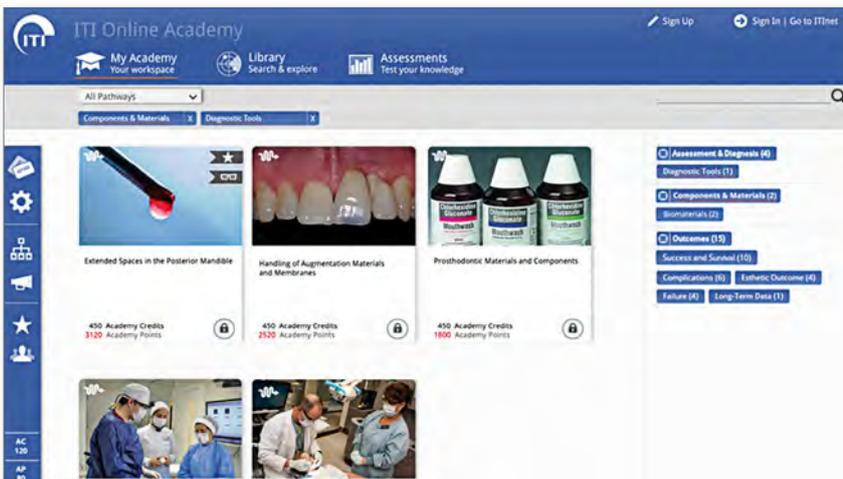


Fig. 2: Finding the content that is right for you is easy and intuitive.

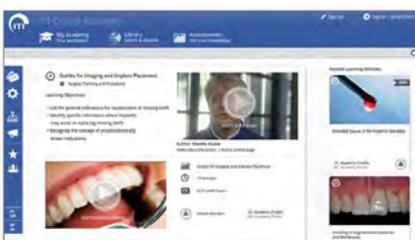


Fig. 3: Detail page of an ITI Online Academy Learning Module.



Fig. 4: A look into a Learning Module.

These screenshots are at beta stage and may be subject to change.

Online Academy and the future

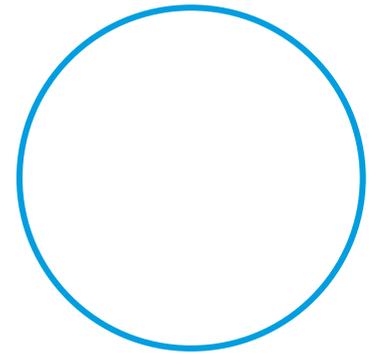
The ITI recognizes that the Online Academy in isolation cannot teach competency in implant therapy but it is ideally placed to form part of blended learning in combination with online events such as webinars, taught practical courses and one-to-one mentoring in implant treatment procedures.

To complement the initial educational formats, the ITI Online Academy will gradually expand its offering to include other formats.

With the launch of the ITI Online Academy the ITI has embarked on a very ambitious journey to provide learners worldwide with the most comprehensive and sound educational offering available in implant dentistry.

References

1. Implant Dentistry University Education: Opportunities and Challenges. *European Journal of Dental Education* 2014; Vol. 18 (Issue Supplement s1): 1–69
2. ITI SAC Classification in Implant Dentistry. Dawson and Chen 2009



ITI
National
Congresses
2014-2015

Network Knowledge Credit points

Catch up on the latest in implant dentistry at one of our national congresses

ITI Congress Mexico	October 9 – 10, 2014	Mexico City, Mexico
Congrès ITI Francophone	November 7 – 8, 2014	Marrakech, Morocco
ITI Congress UK & Ireland	March 6 – 7, 2015	London, UK
ITI Congress Brazil	March 19 – 21, 2015	Gramado, Brazil
ITI Congress Germany	April 17 – 18, 2015	Dresden, Germany
ITI Congress Iberia	April 17 – 18, 2015	Madrid, Spain
ITI Congress Japan	May 9 – 10, 2015	Tokyo, Japan
ITI Congress Switzerland	May 9, 2015	Bern, Switzerland
ITI Congress Finland	September 11 – 12, 2015	Helsinki, Finland
ITI Congress Greece	September, 2015	Athens, Greece
ITI Congress Middle East	October 15 – 16, 2015	Dead Sea, Jordan

More details at www.iticongress.org

ITI International Team for Implantology | Peter Merian-Strasse 88 | 4052 Basel | Switzerland | www.iti.org

ITI Education Weeks 2014

ITI Education Weeks are the ideal place to refresh and extend skills associated with implant dentistry. They offer:

- Up to the minute evidence-based teaching
- Top lecturers at state-of-the-art facilities
- Continuing education credits
- Participation in treatment planning
- Surgical and prosthetic sessions: live and hands-on

The courses are delivered by leading academic institutions around the world in partnership with the ITI – an independent academic organization dedicated to all aspects of implant dentistry.

JUNE 9–13: ITI Education Week Boston

Harvard School of Dental Medicine & Tufts University School of Dental Medicine, USA

JUNE 16–21: ITI Education Week London

UCL Eastman Dental Institute, UK

JULY 16–20: ITI Education Week Pretoria

Oral and Dental Hospital, University of Pretoria, South Africa

AUGUST 25–29: ITI Education Week Bern

University of Bern, School of Dental Medicine, Switzerland

SEPTEMBER 7–13: ITI Education Week Hong Kong

University of Hong Kong, Prince Philip Dental Hospital, PR China

OCTOBER 22–25: ITI Education Week Toronto

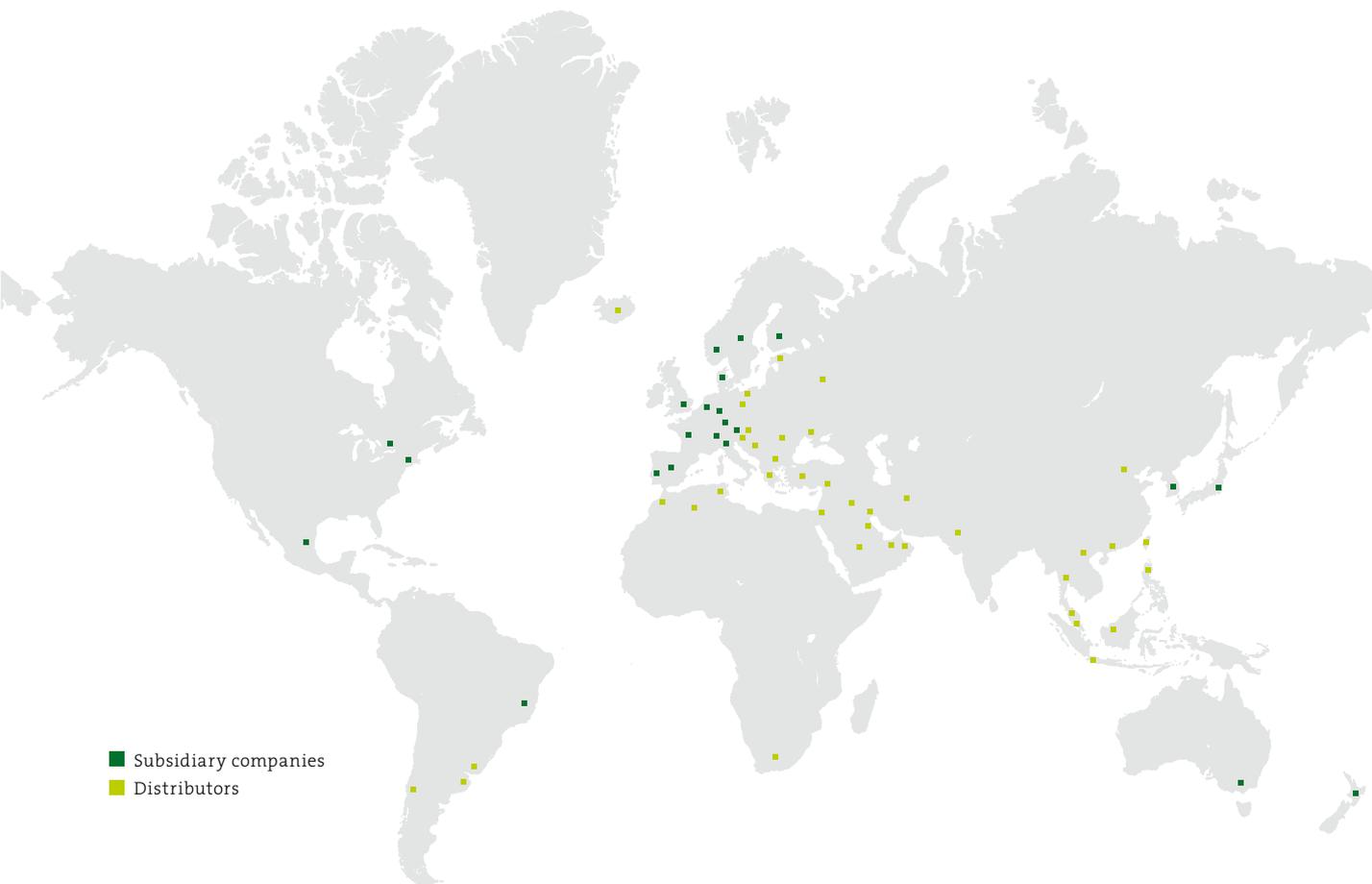
Holland Bloorview Kids Rehabilitation Hospital, Canada

NOVEMBER 3–7: ITI Education Week Porto Alegre

Hospital Moinhos de Vento, Brazil

For more information go to: www.iti.org/educationweek.





■ Subsidiary companies

■ Distributors

HQ Switzerland

Institut Straumann AG
Peter Merian-Weg 12
4002 Basel
Tel. +41/61 965 11 11
Fax +41/61 965 11 01

Subsidiary companies:

Australia/New Zealand

Straumann Pty. Ltd.
7 Gateway Court
Port Melbourne 3207
Victoria
Tel. +61/39 64 67 060
Fax +61/39 64 67 232

Austria/Hungary

Straumann GmbH Austria
Florido Tower
Floridsdorfer Hauptstr. 1
1210 Wien
Tel. +43/12 94 06 60
Fax +43/12 94 06 66

Belgium

Straumann
Belgicastraat 3
1930 Zaventem
Tel. +32/27 90 10 00
Fax +32/27 90 10 20

Brazil

Straumann Brasil Ltda
Rua Funchal 263
04551-060 São Paulo
Tel. +55/11 30 89 66 83
Fax +55/11 30 89 66 84

Canada

Straumann Canada Ltd.
3115 Harvester Road
Suite 100
Burlington/ON-L7N 3N8
Tel. +1/905 319 29 00
Fax +1/905 319 29 11

China

Straumann (Beijing) Medical Device Trading Co., Ltd.
1103, Tower B,
Jianning Centre, No. 27,
Dongsanhuan Beilu,
Chaoyang District,
Beijing 100020, PRC
Tél. +86/10 57 75 65 55

Czech Republic

Straumann s.r.o.
Na Žertvách 2196
180 00 Prague 8
Tel. +420/284 094 650
Fax +420/284 094 659

Denmark

Straumann Danmark ApS
Nyårds plads 21
2605 Brøndby
Tel. +45/46 16 06 66
Fax +45/43 61 25 81

Finland

Straumann Oy
Fredrikinkatu 48A 7 krs.
00100 Helsinki
Tel. +358/96 94 28 77
Fax +358/96 94 06 95

France

Straumann France
3, rue de la Galmy – Chessy
77701 Marne-la-Vallée cedex 4
Tel. +33/164 17 30 00
Fax +33/164 17 30 10

Germany

Straumann GmbH
Jechtinger Straße 9
79111 Freiburg
Tel. +49/76 14 50 10
Fax +49/76 14 50 11 49

Great Britain

Straumann Ltd.
3 Pegasus Place, Gatwick
Road
Crawley RH109AY,
West Sussex
Tel. +44/12 93 65 12 30
Fax +44/12 93 65 12 39

Italy

Straumann Italia s.r.l.
Viale Bodio 37a
20158 Milano
Tel. +39/02 39 32 831
Fax +39/02 39 32 8365

Japan

Straumann Japan K.K.
Sapia Tower 16F, 1-7-12
Marunouchi, Chiyoda-ku,
Tokyo, 100-0005 Japan
Tel. +81/352 18 26 00
Fax +81/352 18 26 01

Mexico

Straumann México SA de CV
Rubén Darío # 281 int. 1702
Piso 17
Col. Bosque de Chapultepec
11580 México DF.
Tel. +52/55 5282 6262
Fax +52/55 5282 6289

Netherlands

Straumann B.V.
Postbus 338
3400 AH IJsselstein
Tel. +31/30 60 46 611
Fax +31/30 60 46 728

Norway

Straumann AS
P.O.Box 1751 Vika
0122 Oslo
Tel. +47/23 35 44 88
Fax +47/23 35 44 80

South Korea

Straumann South Korea
(formerly: B.I. Trading Co. Ltd.)
1467-75, Seocho3 -Dong,
Seocho-Gu, Seoul
Tel. +82/72 265 8777
Fax +82/72 265 8797

Spain/Portugal

Straumann S.A.
Edificio Arroyo - A
Avda. de Bruselas, 38
Planta 1
28108 Alcobendas (Madrid)
Tel. +34/902 400 979
Fax +34/913 449 517

Sweden

Straumann AB
Fabriksgatan 13
41250 Göteborg
Tel. +46/31 708 75 00
Fax +46/31 708 75 29

USA

Straumann USA, LLC
60 Minuteman Road
Andover, MA 01810
Tel. +1/800 448 8168
+1/978 747 2500
Fax +1/978 747 2490

STARGET DIGITAL



STARGET for iPad

With video functionality and context-relevant extra material. Available free in the App Store in German, English, Spanish, French and Italian language.



STARGET on the screen

Browse STARGET comfortably on the screen like a printed version: www.straumann.co.uk/starget, select option "interactive version" there.



STARGET as PDF

STARGET can also be downloaded as PDF version from our website: www.straumann.com/starget

straumann® Pure
Ceramic Implant



More than pure esthetics. The natural and strong solution.

The Straumann® PURE Ceramic Implant is based on decades of experience and offers you a unique esthetic solution to treat patients with specific needs.

- Expand your patient pool with an innovative solution
- High predictability with revolutionary osseointegration features equivalent to the established SLA® surface
- 100% proof test ensuring reliable implant strength
- High end esthetic solution thanks to ivory-colored material.

www.straumann.com/pure



60 YEARS

 **straumann**
simply doing more

04/14 152.500/e