

INSIGHT

THE PUBLICATION FOR THE DENTAL IMPLANT TEAM

6:1

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Introducing the Direct Abutment

As simple as crown and bridge



Three simple steps. Page 4

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Publisher

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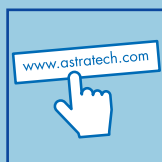
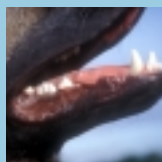
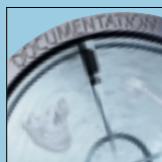
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Cover: The Direct Abutment System allows for conventional crown and bridge technique to be used with cemented constructions.



The Future Belongs to Us

Astra Tech of today is a company undergoing dynamic development. All over the world our sales are growing rapidly, and at a rate at least double that of our major competitors. We are currently building our organization in order to meet this increasing demand and to ensure a high level of service for our clients.

Astra Tech is part of the AstraZeneca group. AstraZeneca is one of the world's leading pharmaceutical companies; it has over 54,000 employees and has products marketed in over 100 countries. Importantly, AstraZeneca invests USD 10 million every working day in research and development activities.

Astra Tech is the only company within the AstraZeneca group which specializes in the field of medical devices. Our close connection to the pharmaceutical industry has a significant impact on the way we develop and market our products. We have an extensive international program for clinical investigations and follow the same strict protocols that are applied in pharmaceutical trials in order to base our marketing claims on solid documentation. This has made the Astra Tech Dental Implant

System one of the best-documented implant systems in the world.

Our design, originating in the early 1980s, has excellent performance and we have seen one competitor system after another trying to copy our results. With over 20 years of experience from our Conical Seal Design™ and more than 10 years from our rough surface TiOblast™ and the unique MicroThread™, it is rewarding to see the former leaders within the field now falling in behind us.

Our product development does not blindly aim to increase our revenue and cut costs but rather to enhance the performance of our system, proving ourselves worthy of the trust of our clients. The ongoing launch of the Fixture MicroThread is supported by over 10 years of experience and 5 years of published clinical data. The aim is to establish

the Astra Tech Dental Implant System as the new gold standard within dental implantology.

We want to offer our clients a "total product" consisting of our well-designed system, support from competent and dedicated staff, solid documentation and high quality training and education. This offer, in combination with serious and ethical marketing is for us, the key to success. ■



Photo: Sören Sjöberg

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The Direct Abutment

– as Simple as Crown and Bridge

The Direct Abutment System was developed for cemented constructions and provides esthetic solutions in most cases without the need for customization.

The Direct Abutment System offers a simplified restorative protocol for implant-supported constructions. This gives the clinician the unrivalled possibility of recreating the patient's natural smile and appearance.

Conventional prosthetic procedure

The Direct Abutment is a pre-prepared solid core abutment designed to allow for conventional crown and bridge procedures, but easier. The coronal and restorative margin mimics the configuration of prepared natural teeth in different positions. The abutments are available in four vertical heights from the fixture to the restorative margin (0.5, 1, 2.5 and 4 mm) and three widths at the shoulder

(4, 5 and 6 mm). This offers a unique freedom to choose an ideal size for natural esthetics.

In total, there are 12 different kits each containing a Direct Abutment with carrier, Impression Pick-up, and two Healing Cap/Burnout Cylinders. The kits provide control of the inventory and the components follow the patient through the restorative process.

Design features

The Direct Abutment System has several features which make it a convenient standard procedure. The Direct Abutment is designed with:

- **Pre-prepared configuration** which fits the majority of cases.

- **Snap-on groove** situated directly over the restorative margin – providing retention for the Impression Pick-up, Healing Cap/Burnout Cylinder.
- **Laser-etched indication** at 1 mm from the top – allowing for customization via occlusal reduction.
- **Hex hole** at the top – giving options for carrying, seating and retrieval.
- **Flat surface** – providing indexing and anti-rotation of the crown. There are also two ST-types of Direct Abutments providing anti-rotation in the 4.5/5.0 fixture.

Snap-on for easy handling

- **The Direct Abutment Carrier** is designed for friction fit to the abutment. It offers tight connection, easy carrying and quick seating of the abutment. It is designed with vertical grooves providing grip for the new Torque Wrench.

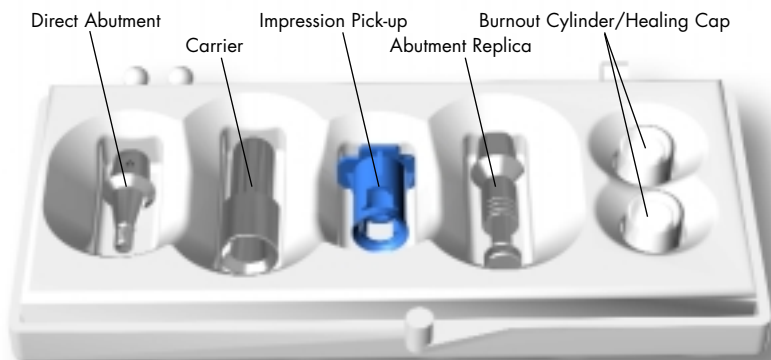
- The Snap-on function of **the Direct Abutment Impression Pick-up** makes impression-taking very simple and accurate. It provides distinct seating and perfect capturing of the restorative margin. The raised dot indicates



Summary

A system with pre-prepared abutments allows for conventional crown and bridge technique when performing cemented constructions. The 12 different abutments vary in height and width covering most clinical situations and rendering excellent esthetic results.

The simple-to-use Process Kit contains all necessary parts for the dentist and technician: Direct Abutment, Carrier, snap-on Impression Pick-up, Replica and Healing Cap/Burnout Cylinder.



the indexing flat surface of the abutment. The Pick-ups are color-coded.

- **The Direct Abutment Replica** contains a laser-etched indication allowing for occlusal reduction.
- **The Direct Abutment Healing Cap/ Burnout Cylinder** functions as tissue support and protection during healing with a snap-on function and can be used as a base for temporisations. It is also used as a wax-up and burn-out coping.
- **The Process Kit** contains all necessary components and no additional instrumentation is needed.

Restorative protocol

The restorative protocol is very simple and mimics conventional crown and bridge technique. The first step is to measure the soft tissue height (Fig. 1), and decide which abutment to use, taking into account the width and cervical height. The abutment is mounted with the carrier either by hand (Fig. 2) or by using the Torque Wrench. The snap-on Impression Pick-up is seated on the abutment (Fig. 3). The impression is taken using a closed tray and elastomeric impression material (Fig. 4), and is sent to the laboratory together with the replica and the Burnout Cylinder.

The dentist completes his work by placing the Healing Cap or by using it as a base for a provisional. In the laboratory, the final construction is completed following conventional laboratory protocol.

As mentioned before, this system offers the possibility of reducing the height by 1 mm by preparing down to the laser-etched indication that is available on both the abutment and the replica. For more extensive individualization, we recommend use of our customized abutments such as Profile BiAbutment or Cast-to Abutment. If you choose to do preparation on the Direct Abutment, it is, of course, possible with conventional impression technique without using the Pick-up.

The Direct Abutment System will give you the possibility of performing your cement-retained implant restorations using conventional crown and bridge technique. The wide variety of heights and diameters makes this the ideal system using pre-prepared abutments. ■



1. Measure the thickness of soft tissue with the Tissue Depth Gauge mm. Use the gauge which matches fixture 3.5, 4.0 ST and 4.5/5.0 ST, respectively.



2. Deliver the abutment to the fixture and tighten firmly. Apply 15 Ncm using the Torque Wrench.



3. Align the flat surface of the abutment with the raised dot on the Impression Pick-up and seat firmly until snap.



4. Use a closed tray and elastomeric impression material. Note: Impression Pick-up cannot be used when occlusal reduction is more than 1 mm, or the tapered aspect or shoulder have been customized.

Interview performed by PR-team, Astra Tech Inc.

Keeping the Simple Case Simple

Development and Clinical Experience of the Direct Abutment

Dr Mastrovich has experience with the Astra Tech Dental Implant System since the early 90s. Over the years, Dr Mastrovich has provided valuable information and novel ideas, which played an important role in the development of the Direct Abutment System.



Dr Charlie Mastrovich
Prosthodontist
Escondido, CA, USA

Unique freedom to choose the ideal size for natural esthetics.



1 What is the key to simplifying implant treatment?

There are several key factors in attaining this coveted designation of “easy”. First and foremost, as in other phases of dentistry, often times the clinical situation dictates the level of complexity because not all cases are created equal. Practitioner education and experience can pre-identify case complexity allowing for properly diagnosed and coordinated case planning from initial consultation through treatment execution.

Of course, simplicity is not just case-dependent but also system-dependent. Working with Astra Tech

in the development of the Direct Abutment, I have been impressed with how much effort is directed toward delivering components with a range of functionality and procedural simplicity without sacrificing clinical stability or over-complicating the system. I believe the Direct Abutment System will now meet this requirement of *helping to keep the simple case simple* by providing a very stable platform for cement-retained restorations when there is no specific need for custom abutment fabrication. In other words, let’s do the preparing in the machine shop whenever possible.

Summary

Dr Mastrovich explains his views on how to simplify prosthetic procedure and minimize the need for customized abutments with the Direct Abutment System. Easy abutment insertion and dimensional flexibility in vertical and horizontal

aspects result in a standardized crown and bridge protocol, which is easier and more cost effective.

2 *You have been involved in the development and clinical evaluation of the Direct Abutment System. Which clinical aspects have been the focus and have been incorporated into the design?*

The primary mission in development was to create an easy-to-use cement-retained abutment system, which could alleviate the need for customized abutments in many cases when a cement-retained option was preferable. The application would of course save precious chair time and expense, plus provide for expanded clinical functionality as in immediately provisionalized or loaded cases.

Along the development road, there have been many clinical aspects, which have driven the design of this new abutment system. To address the numerous aspects involved, I would like to describe the clinical and laboratory phases illustrating the points with photographs from three cases.

The first case restores the *easy abutment insertion*, without fear of tissue impingement. Until experienced, the profound simplification this has on everyday implant dentistry is hard to appreciate (Figs. 1 and 2). The array of Direct Abutments gives the clinician *dimensional flexibility in vertical and horizontal aspects* to control abutment height and emergence diameter for maximum flexibility, without having to resort to custom prepared or wax-and-cast options (Fig. 3). The simplicity of the transfer system (Fig. 4), with identically sized abutments and replicas, translates into identical snap fits for both impression taking and replica insertion.

When there is no indication for temporary replacement, a snap-on Healing Cap is provided for tissue control and patient comfort (Fig. 5). If provisionals are needed, the cap

doubles as a provisional base. By picking up the Healing Cap in a pre-fabricated provisional shell or vacuum form matrix, the fit and margin detail will automatically be complete*. This leaves only the refining of emergence contour to efficiently complete the provisional. In the laboratory, wax-up on the other Healing Cap/Burnout Cylinder can proceed immediately once the master cast is articulated. No die spacing is necessary, as this space has already been built into the tolerance fit of the Burnout Cylinder. Once the restoration is cast, the metal copings do not require internal relief, as the retentive features of the abutment are not engaged in the waxing sleeve. Both of these features save time for the technician, and truly make implant supported crown fabrication in the laboratory as straightforward as any other PFM restoration. Once delivered, the crown will have the same feel on the abutment as it did on the replica in the lab (Fig. 6).

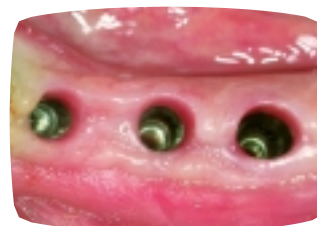
* There are two Healing Caps in each kit and one is used as a Burnout Cylinder.

3 *Is there any other feature or clinical aspect that you believe should be highlighted?*

Without shifting the focus away from the main topic of installing and impressing abutments simply without preparing, there are scenarios when some modification to the abutment will expand its clinical usefulness. I see these modifications falling into two basic categories: modifications involving the margin, and those that only involve the abutment above the margin. If the modification is confined above the margin, as when a limited vertical space dictates a shorter clinical abutment height, the abutments (and replicas) can ►



1. The case as returned from the surgeon with standard healing abutments in place.



2. Healing abutments removed, prior to abutment insertion.



3. Direct Abutments installed.



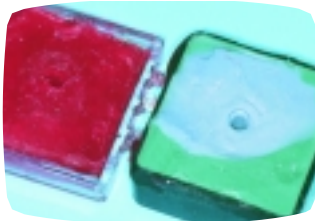
4. Intraoral view of transfers in place prior to impression.



5. Intraoral view of Healing Caps/Burnout Cylinders installed.



6. Completed crowns seated on the master cast.



7. Extraoral box impression of modified abutment.



8. Transfer seated intraorally on modified Direct Abutment 4.



9. Epoxy die generated from extraoral impression.



10. Epoxy die inserted into full arch impression as a custom replica.

easily be reduced using the laser line guide. This allows use of the same transfer system (avoiding needless duplication of additional components). If the need arises for angulation or draw modifications, either clinically or in the laboratory phase, the previously described protective caps also double as pre-made reduction copings. Modification of the margin to adapt accurately to tissue contour introduces the need to transfer this information into the lab. I have used two techniques to accomplish this quite easily: the preable Profile BiAbutments, and the Cast-to-Abutments. In the first technique, the modified abutment can simply be captured with standard impression techniques, bypassing the transfer coping. In the second technique, I recover the modified abutment and impress for a die extraorally (Figs. 7 and 8). The abutment is reinserted and a full arch impression is completed, generally without the impression coping. However, in the illustrated modified Direct Abutment 4 in Fig. 8, the impression was created with the transfer, and an epoxy die was poured and inserted into the impression as a custom replica (Figs. 9 and 10). Initially this technique sounds complicated. However, due to the ease by which abutments can be inserted, tissue packing avoided and impressions attained with fast-set polyvinyl, the technique takes no more chair time than an intraoral impression.

4 What is your clinical experience of the current Direct Abutment line and clinical concept?

Of course, I have a rather biased opinion, clouded by a significant amount of experience with the various prototypes and prototyping

steps generated to create the current Direct Abutment line. This system allows me to choose abutments and easily restore when the clinical situation allows. I have found a very high percentage of the posterior cases adapt easily to the Direct Abutment, but a lower percentage in the anterior region where tissue contour tends to be more scalloped, especially in single tooth scenarios. That is what is great about the system: a fixture level impression can be made as easy as an abutment level impression. If necessary, a custom abutment can be fabricated, using laboratory time in lieu of additional clinical chair time.

5 What restorative protocol can please all parties involved – surgeon, restorative dentist, technician and patient?

I don't think I can be specific exactly in those terms. I believe the case should drive the restorative protocol. With that said, when there is a treatment planning choice, generally simple is better than complex. The Direct Abutment System with its clinical flexibility is a good example of confining an implant case to a standard crown and bridge protocol that is easier and more cost effective. ■

Johan Roos
Medical Manager, Dental
Astra Tech AB

Chronicle of Documentation-CD

Astra Tech's ambitions include intense front-line research to provide the best solution for each patient. Implant treatment has become the first choice for a growing number of indications and we know that we can further improve the quality of life of our patients by continuous research.

Research results are made public in many ways, the most common and important being through publication in scientific journals. Our experience is that sometimes much of the scientific literature is difficult to get to. Therefore, the design of a tool for the presentation of scientific documents is a delicate task. For the active researcher, it is evident that there is much to find in the documentation and so we have tried to extract the essence of our articles into brief summaries to highlight important matters.

Simple and factual

Today, the majority of researchers have access to computers which is why we wanted to use this new technology to present our documents. We have created a CD, a Chronicle covering the documentation of Astra Tech Implants. The literature has been categorized and summarized for the convenience of the user. We have endeavored to produce a simplified process and stepwise categorization of documents while trying to create a mind map to help navigate the flood of facts.

Easy navigation

Behind the door to the vault where we keep the Documentation, with a mouse click, you will find documentation on a variety of topics. Each topic provides a list of references and the individual scientific article is summarized in a one-page printout. The navigation map looks like a tree, one stem with four major branches: Methods, Indications, Particular Topics and the System Key Features. Each branch then has a number of twigs with more sub-groups on the

branch topic. The user can navigate up and down the tree as he or she pleases.

The Chronicle of Documentation is a pioneer production, please do enjoy it!

To get your Chronicle of Documentation on CD, please contact your local Astra Tech representative!

Summary

The CD Chronicle of Documentation is a new powerful tool of scientific documentation on implant treatment. Topics include various aspects of Astra Tech Implants and are presented in a simple

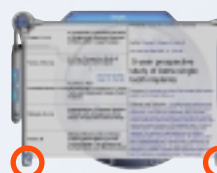
and easy-to-navigate manner. The Chronicle allows fast access to scientific literature and will be very useful for busy researchers and clinicians.



1 Root Menu for Indications, Methods, Key Features and Topics.

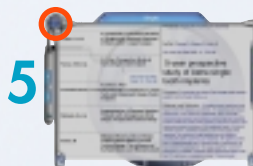


2 Example of a submenu for Indications (Single, Partial or Edentulism).



3 To print out the current abstract, use the button at hotspot 3.

4 To print out a list of references, use the button at hotspot 4.



5 To return to the Root Menu, use the button at hotspot 5.

Man's Best Friend

Utility Dog Rehabilitated with Implants

A young German shepherd, Taiko, is the first documented utility dog in the world to receive a crown on a dental implant for rehabilitation. The successful treatment received medial acclaim in Denmark, as the treatment with Astra Tech implants on dogs that have lost a tooth may turn out to be revolutionary. This case report is a summary of an article to be published in the Journal of Veterinary Dentistry.



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Private practitioner
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Jens Ruhnau, DVM,
Veterinarian and animal
dentist at several clinics
in Denmark and Sweden.

Summary performed by
Hilda Zollitsch Grill

Taiko, a male utility dog in training, lost his first molar tooth in the right mandible when he was 9 months old. This carnassial tooth is essential for chewing, and if it is missing Taiko will primarily chew with his teeth on the opposite side. This means that dental plaque will be accumulating on the remaining teeth on the side of the missing tooth, increasing the risk of developing periodontitis.

A crucial factor to the owner as well as the dog is that the missing tooth reduces Taiko's value as a utility

dog. It will be difficult for the dog to retain the decoy during protection training, which often means early retirement of the dog. There is no doubt that Taiko enjoys the training activities very much and that his quality of life would be reduced if he no longer could take part in them. It was therefore decided that Taiko be treated with an Astra Tech implant replacing the lost molar, to examine whether Astra Tech implants could successfully be used in rehabilitation in dogs.

Summary

A young German shepherd trained as a utility dog, regains full value and enjoys his training after having been rehabilitated with Astra Tech dental implants. After extraction, three implants were placed, a customized abutment attached and a PFM crown cemented.

21 months later, the dog functions normally. This revolutionary case may prove to be a new field of treatment.

Dogs have previously been used as models¹⁻⁴ but there are no known studies where the dog subsequently has been exposed to normal loads such as those seen in play and intake of food. As the first in the world, the authors want to demonstrate the durability of the implants in a dog that uses his teeth actively for protection training. The teeth are thereby subjected to extreme loading and to excessive wear.

Canine teeth

As is the case in man, dogs have both primary and secondary teeth. The full permanent dentition has 42 teeth. Each quadrant has three incisors, one canine, four premolars and two molars in the maxilla but three molars in the mandible. The

carnassial teeth have both shearing cusps and a smaller surface for occlusion. With the carnassial teeth, the dog tears and shreds his food into smaller pieces, and will chew with one side at a time. The chewing pressure in a big dog like the German shepherd is 2–3 times that of a human^{5,6}. The axial pressure following from the load on the molar teeth is up to 3000 kg/m²^{7,8}. The horizontal load when dragging an item such as a rope is up to 114 kg on the carnassial teeth⁹.

Case report

The German shepherd Taiko was born on May 11, 2000. Apart from the dental problem, the dog has had no known disorders. All dental treatment of the dog is carried out under

04.24.2001

Clinical examination reveals good condition of the mucosa and soft tissue (Fig. 1). Intraoral X-ray shows a very fine healing.

After standard surgical uncovering of soft tissue and mucosa, a 25 mm diastema appears. Three fixtures ST 4.5 are chosen. The middle implant is placed and the direction is chosen in order to obtain maximum axial load on the implants. Note that the dog's occlusion curve in this region is very curvilinear as opposed to humans'. The direction and the placement of the three implants is controlled (Fig. 2). As it turned out, there was room for two 15 mm mesial implants and one distal 13 mm implant.

06.14.2001

During check-up 2 months later it appears that the two distal implant cover screws have been exposed to the oral cavity. During the healing period, the dog has not spared the area, neither during play, protection training or food intake. This mechanical impact is probably the most significant cause of exposure.

The implants are surgically uncovered, showing a very small resorption of the marginal bone around the 2 distal implants (Fig. 3).

An impression is made (Fig. 4) and the restoration with the individually adapted Cast-to Abutments is now fabricated. Three Cast-to Abutments are connected together with a cast-on alloy. This becomes a customized abutment supported by 3 fixtures. A metal framework is cast in a precious metal alloy with high palladium content in order to provide strength and hardness. It is shaped to function as a normal tooth if ceramics were to break off from the metal framework. The functionality ►



Taiko, a 2-year-old German Shepherd who is the first documented dog in the world to receive implant treatment in order to be able to continue his work as a utility dog.

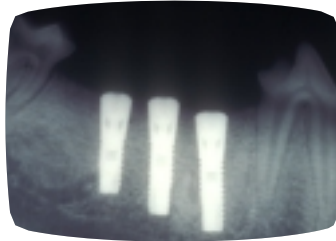
general anesthesia. Preoperative pain relief was ensured prior to each stage of the treatment.

02.27.2001

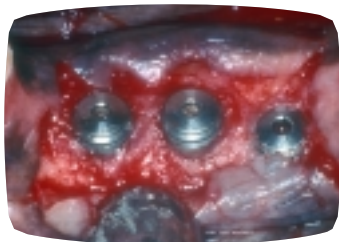
Taiko has his carnassial tooth extracted due to extensive dental caries, probably the result of a congenital enamel defect.



1. Fine healing of mucosa after extraction of carnassial tooth due to extensive caries.



2. X-ray of Fixtures ST 4.5 installed.



3. Some resorption of the marginal bone surrounding the two distal implants is noted due to oral exposition during healing.



4. Fixture Pick-ups mounted for oral impression.



5. The customized Cast-to Abutments and the crown on the working model.



6. The customized restoration is screwed into place.



7. Final restoration in function.



8. X-ray at 10-month follow-up.

of the tooth has received higher priority than the esthetic aspects (Fig. 5).

06.27.2001

During the healing period, Taiko has been wearing Healing Abutments. In

less than two weeks, perfect healing is seen in the region. The restoration with the individually adapted Cast-to Abutments is screwed in to the fixtures (Fig. 6), and the PFM crown is cemented.

08.30.2001

Check-up after 2 months: a happy dog with a perfect tooth and completely normal conditions around the implant crown (Fig. 7).

12.27.2001

The dog is taken acutely to the Veterinary Hospital in Copenhagen with halitosis and a slight bloody flux from the oral cavity. On clinical examination it appears that there is an infection in the region of the implants. Diagnosis: acute laceration following from bite activity or impact on a foreign object. The trauma is not caused by peri-implantitis since all that is missing is facial bone.

01.04.2002

On clinical check-up the wound shows fine gingival healing.

Discussion

After 21 months Taiko still functions with his implant crown. The owner states that the dog functions normally and appears to chew with equal force on both sides of the mouth. As regards the protection training in connection with his work as a utility dog, the decoy is of the opinion that Taiko bites with balanced occlusal force. At the clinical examination the dog shows no signs whatsoever of being inconvenienced by the tooth during bite activity or food intake. X-ray shows full osseointegration and no signs of peri-implantitis.

The treatment itself is not associated with any risks, but at every treatment the dog will need to be anesthetized, which may carry a slight risk. In this case the dog was subjected to anesthesia three times, which represents only a minor risk to a healthy dog.

Choosing this particular dog, where the subsequent load in connection with bite activities would be extensive, has shown that the durability of the implant structure is highly satisfactory as measured over a period of 21 months (Fig. 8). This new field of treatment with Astra Tech implants on dogs may turn out to be revolutionary. ■

References

1. Arvidson A, Bystedt H, Ericsson I. Histometric and ultrastructural studies of tissues surrounding Astra Dental implants in dogs. *Int J Oral Maxillofacial Impl* 1990; 5: 127-33
2. Gotfredsen K, Nimb L, Hjørtting-Hansen E, et al. Histomorphometric and removal torque analysis for TiO₂-blasted titanium implants. An experimental study on dogs. *Clin Oral Impl Res* 1992; 3: 77-84
3. Abrahamsson I, Berglundh T, Wennström J, et al. The peri-implant hard and soft tissues at different implant systems. *Clin Oral Impl Res* 1996; 7: 212-9
4. Moon IS, Berglundh T, Abrahamsson I, et al. The barrier between the keratinized mucosa and the dental implant. An experimental study in the dog. *J Clin Periodontol* 1999; 26: 658-63
5. Bakke M, Holm B, Jensen BL, et al. Unilateral isometric bite force in 8 68-year-old women and men related to occlusal factors. *Scand J Dent Res* 1990; 98: 149-58
6. Lindner DL, Marretta SM, Pijanowski GJ, et al. Measurement of bite force in dogs: a pilot study. *J Vet Dent* 1995; 12: 49-52
7. Eisenmenger E, Zetner K. *Veterinary Dentistry*, Philadelphia; Lea & Febiger; 1985: 2
8. Wiggs RB, Lobprise HB. In: Wiggs RB, Lobprise HB, *Veterinary Dentistry – Principles & Practice*, 1st ed. Lippincott-Raven, 1997; 79
9. Hamel L, Le Brech C, Besnier NJ, et al. Measurement of biting-pulling strength development on canine teeth of military dogs. *J Vet Dent* 1997; 14: 57-60

Winner in the MicroThread Competition



“I would use it for myself”

Dr Bruno Collaert from Belgium is the winner of the MicroThread competition “Taking Technology to the Top” on the special Astra Tech Internet site, focused on Fixture MicroThread. Dr Collaert displayed an in-depth knowledge of the Fixture MicroThread™ and explained why he would treat his best friend with dental implants from Astra Tech by stating “I would use it for myself”. What better motivation can you have being an experienced implant user as well as a scientist?

Congratulations

We would like to congratulate Dr Collaert on winning a trip to the Ice-hotel in Jukkasjärvi, Lapland. Dr Collaert works as a periodontist in the Clinic of Periodontology and Implantology in Brussels, Belgium. He is also Associate Professor at the University of Malmö, Sweden. In the field of implantology, Dr Collaert has published several articles about early loading, one-stage surgery and patient opinion. In next issue of *Insight* we will publish an interview with the winner.

Clever reasons

Our competition raised a great deal of interest with many competitors taking part and giving good reasons as to why you should treat your best friend with the Astra Tech Dental Implant System. The reasons were all of high quality, including for example, “You’re simply the best – better than all the rest” and “To have a friend, be a friend. Give your best and nothing less”.

Stay on the lookout

If you participated in the competition and did not win, you will still receive an IceLight pen. Make sure to stay on the lookout for more competitions from Astra Tech with fine prizes in the future. This was our first but not our last Internet-based competition. ■

Mia Jensen, DDS
Clinical Information Manager, Dental
Astra Tech AB

*Ingrid Johnsson,
Manager Training and Support, Dental
Astra Tech AB*

Welcome to the International

It is with great pleasure we present the international education program for year 2003, covering a variety of interesting fields within implant rehabilitation.

The program is mainly composed of courses aimed at the clinician with experience of implant rehabilitation who wishes to extend his knowledge and experience. One basic course is provided for the clinician with no experience who is starting treatment with the Astra Tech Dental Implant System. Take the opportunity to enhance your knowledge to ensure clinical success in oral rehabilitation with implants, and to exchange experience with colleagues and skilled lecturers.

To complement the international education program, we provide a new education program for the Swedish implant team. Focusing on basic and step-two courses in surgery, prosthetics as well as laboratory work, the clinician with some or no experience in implant rehabilitation will be provided with a solid base for future clinical work and training. For the dental assistant there are courses focusing on both surgical and prosthetic treatment.

FOR THE CLINICIAN WITH MINOR OR NO EXPERIENCE IN IMPLANT REHABILITATION

Basic Implant Treatment Course – Options & Methods (3 days)

This is a course that provides theoretical and clinical foundation for oral rehabilitation with implants, covering treatment options and treatment planning as well as biological, physiological and mechanical considerations. Case presentations together with patient demonstrations and hands-on training will illustrate treatment procedures with the Astra Tech Dental Implant System.

In-Clinic Training Program

The course takes place in your own practice, targeting all members of the team in preparation for the first Astra Tech Dental Implant case. The education session consists of a tailor-made theoretical part on products and procedures as well as hands-on training. This course entitles the team to enrolment in the Astra Tech Warranty Program.

FOR THE CLINICIAN WITH SOME EXPERIENCE IN IMPLANT REHABILITATION

Implant Treatment Course – Dental Implants and Esthetics (1,5 days)

Through case presentations, participants will be able to follow the systematic treatment strategy from treatment planning to the final result. Possibilities and limitations in the surgical as well as in the prosthetic phase focusing on biology, function and esthetics will be presented and discussed.

Special Program – Clinical and Research Observations on Implants (2 days)

The course focuses on treatment planning and live surgery. Research results on implant treatment and implants are presented and discussed.

Clinical Training Course – Advanced Prosthetic Procedures (2 days)

This is an overview of prosthetic solutions in a variety of implant cases accompanied by a patient demonstration, which will illustrate the different stages of treatment procedures in complex cases. Mechanical and biomechanical considerations are in focus, and the importance of close teamwork is emphasized.

Education Program for 2003

Clinical Training Course – Implant Treatment in Difficult Cases (2 days)

The course focuses on solving difficult cases with conventional surgical and prosthetic treatment procedures. Two course concepts are available with one clinical course focusing on implant surgery. The other is a theoretical course covering both implant surgery techniques and prosthetic restorations. After agreement this course may be followed by a special clinical session.

FOR THE EXPERIENCED CLINICIAN

Clinical Training Course – Advanced Implant Surgery (2,5 days)

This is the most advanced course on implant rehabilitation. Live surgery and follow-up of various bone-grafting procedures will be presented and discussed, as well as experimental and clinical studies on the subject. Bone substitutes are discussed, and in some courses may be demonstrated in live surgery sessions.

FOR THE DENTAL TECHNICIAN WITH SOME EXPERIENCE IN IMPLANT REHABILITATION

Dental Technician Course – Laboratory Procedures (1,5 days)

This course is aimed at the dental technician and the clinician with an interest in laboratory procedures. The focus is on design, investing and casting techniques for suprastructures. The advantages and potential with the Astra Tech Dental Implant System are presented and discussed. Workshops will guide participants through the procedures.

Dental Technician Course – Esthetic Solutions (2 days)

The course is arranged in collaboration with Ivoclar Vivadent. The fundamentals of implant-supported restorations will be discussed with focus on esthetic implant

crown design. Special attention will be paid to the use of customized components such as Temporary Abutment, Profile BiAbutment, Cast-to Abutment and Ceramic Abutment in conjunction with IPS Empress2.

SPECIAL PROGRAMS

Special Program – Customized Program

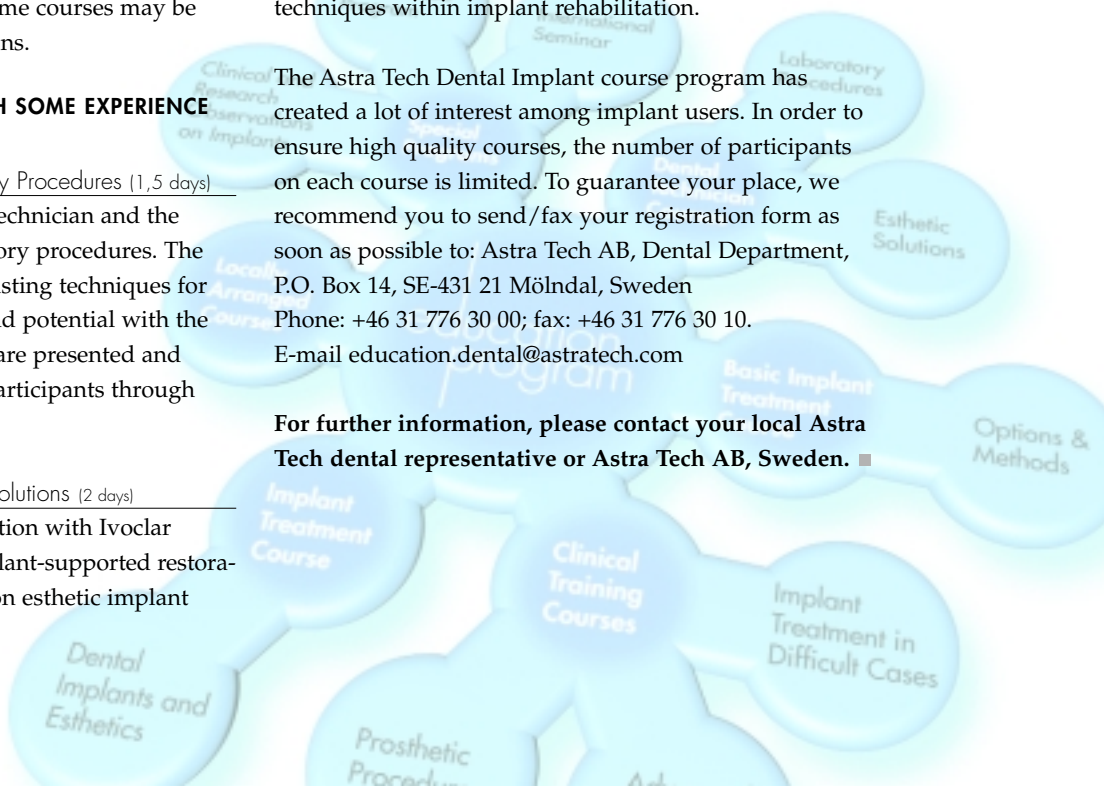
Visit a qualified Astra Tech Dental Implant user to exchange knowledge and experience on different aspects of implant rehabilitation. Or, visit Astra Tech AB in Mölndal, Sweden for a customized program adapted to your specific request.

Special Program – International Seminars

Well-known and experienced lecturers will present the latest data on implant research as well as the latest clinical techniques within implant rehabilitation.

The Astra Tech Dental Implant course program has created a lot of interest among implant users. In order to ensure high quality courses, the number of participants on each course is limited. To guarantee your place, we recommend you to send/fax your registration form as soon as possible to: Astra Tech AB, Dental Department, P.O. Box 14, SE-431 21 Mölndal, Sweden
Phone: +46 31 776 30 00; fax: +46 31 776 30 10.
E-mail education.dental@astratech.com

For further information, please contact your local Astra Tech dental representative or Astra Tech AB, Sweden. ■



Kent Engström, DDS
Therapy Manager, Prosthetics, Dental
Astra Tech AB

Creating Perfectly Sculptured Soft Tissues

With the ProHeal Cap system you can create individual esthetics when working with screw-retained prosthetic solutions. The ProHeal Cap offers flexibility and easy clinical procedures for sculpturing the peri-implant soft tissue. For perfect registration of the soft tissue at impression taking, use the Abutment Impression Pick-up.

Ideal soft tissue sculpturing

The ProHeal Cap system consists of three different sizes of sterile healing caps. A tissue sculpturing healing cap is placed on the UniAbutment during the healing period and controls and shapes the surrounding soft tissue. In addition, it protects the conical top surface and the screw entrance on the UniAbutment from plaque and tissue overgrowth. The material, design and surface texture of the healing caps provide smooth feeling, tissue health and patient comfort.

Creating perfect impression

The Abutment Impression Pick-ups, which correspond to the different

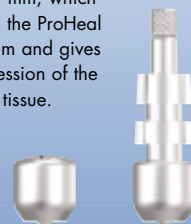
ProHeal Caps, simplify the impression taking and are the key to accurate impressions. The Abutment Impression Pick-up is a two-component pick-up shaped specifically to mimic the ProHeal Cap and used for taking impressions on the UniAbutment. The novel healing and tissue sculpturing system also includes the Guide Pin Hex which represents a new type of guide pin with a knurled top and hexagonal opening for improved handling.

If you want to give your patients an esthetic and natural-looking result with screw-retained prosthetics, use the ProHeal Cap system in combination with the corresponding Abutment Impression Pick-ups.



ProHeal Cap 20 in 3 different heights: 4.3 mm, 5.5 mm and 5.5 mm Long.

An Abutment Impression Pick-up 20 5.5 mm, which corresponds to the ProHeal Cap 20 5.5 mm and gives a correct impression of the sculptured soft tissue.



1. The ProHeal Caps in place.



2. Sculptured papillas and soft tissue after healing.



3. The corresponding Abutment Impression Pick-ups installed.

For further information on the ProHeal Cap System, contact your local Astra Tech representative. ■

Mia Jensen, DDS
Clinical Information Manager, Dental
Astra Tech AB

Get on-line



Have you had the opportunity to visit the new Astra Tech homepage? Simply choose your own country to find the latest news, as well as a world of information on the Astra Tech Dental Implant System.

Brand new homepage released

The new homepage was launched last year and is continuously undergoing improvements and updates.

Here you can find a Professional Center for the dentist and the dental technician, while the Patient Center informs patients about implant treatment.

www.astratech.com



Informing your patients

For the patient it is important to have full understanding of the implant procedure and today's patient demands to be thoroughly informed. The treatment procedure is described and illustrated, advantages with implants explained in conjunction with testimonials from 5 patients, all successfully treated with Astra Tech implants.

A large section on frequently asked questions (FAQ) addresses the common concerns and worries of many patients.

A patient who is familiar with the treatment procedures and who knows what to expect is much more likely to co-operate with instructions and be more satisfied with both the treatment and the outcome. Recommend

your patients to enter the patient section on the Astra Tech website so they can learn at home about implants and come back to you with specific questions regarding their individual situation.

For the dentist

In the System section, you can read about the well-documented features of the Astra Tech Dental Implant System. Look under Products and find out about all the components available for dentists as well as for dental technicians. Through easy navigation you will quickly find what you are looking for.



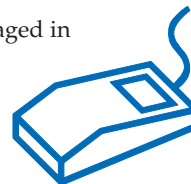
Increase your knowledge

Watch out for the net version of the International Training & Education program 2003. In the Services section you will find all necessary course information. Take this chance to improve your skills and reserve a seat on one of our popular courses.

If you would like to increase your knowledge on-line, look in the Library

section where you will find a lot of pdf-files for download, such as the Documentation Summaries where you find the articles one by one. Read the latest on your topic of interest.

Astra Tech is engaged in many different congresses throughout the world. Maybe there is something happening close to you, take a look in the events section.



FAQ

For questions on the Astra Tech system, look under FAQ where you will find answers to many *frequently asked questions* concerning surgical, prosthetic and laboratory issues.

Get on-line

Keep visiting the Astra Tech homepage and stay up to date with the latest news. Get on-line and find out more.

Welcome!

Mia Jensen, DDS

Clinical Information Manager, Dental
Astra Tech AB

New Successful Education Program

A new implant education program has been developed in Bilbao, Spain, by the European Association of Oral Implantology (EAOI), a joint collaboration between the University of Bilbao and the Department of Oral and Maxillofacial Surgery, Göteborg University. Astra Tech, Spain is the industrial collaborator in the program.



Course participants during clinical treatment (supervised by Dr Gomez).

The course program has been developed jointly by Professor Francisco Donate Oliver (Head of Department of Neuroanatomy, University of Bilbao), Professor Karl-Erik Kahnberg

(Head of Department of Oral and Maxillofacial Surgery, Göteborg University) and Dr Manuel Gomez (Associate Professor and private practitioner, Bilbao).

The program lasts for about 1 year and graduation took place at the end of 2001 and 2002. The course is held one weekend a month (Friday and Saturday) in order not to interfere with the participants' weekly work schedule.

This extended program consists of ten modules and will give the participants a basic theoretical knowledge in implantology as well as the skills to perform practical clinical work in surgical and prosthetic areas including treatment planning. The implant course is run at the University

of Bilbao as well as in private hospitals. Participating lecturers include international as well as local speakers, such as Professor Lyndon Cooper (USA), Dr Michael Norton (UK), Professor Juan Pi Urgell and Professor Echeverria Garcia (both from Spain).

The ten modules are composed as below.

Closing session

"We have received a lot of positive feedback so far and some of the first-year attendants returned for the examination of the ten delegates from 2002," concludes Professor Kahnberg.

1. Basic oral implantology: bone biology, anatomy, principles of osseointegration and overview of treatment applications.

2. Basic implant surgery: surgical techniques and precautions, survey of complications associated with surgery (including practical demonstrations).

3. Soft tissue management and periodontal considerations: implant surgery aspects focusing on the periodontally-involved dentition and the esthetic zone.

4. Surgical practice on corpses: practical training on different grafting techniques especially from the mandible and hip region, histological presentation of osseointegration fixtures in bone tissue sections.

5. Clinical surgery I: supervised implant surgery on selected patients.

6. Clinical surgery II: lectures and live demonstration of advanced implant surgery showing bone grafting techniques in combination with orthognathic surgery or onlay technique.

7. Implant-supported prosthesis I: impression techniques and planning of prosthetic procedures and dental laboratory aspects (including practical training).

8. Implant-supported prosthesis II: prosthetics (including supervised practical treatment of implant patients).

9. Esthetics in oral implantology: prosthetic and surgical aspects of esthetics, including the use of laser surgery and continued live implant surgery.

10. Multidisciplinary restorative therapy: therapy planning and esthetic aspects of implant rehabilitation.

At the end of the course, each participant is assessed based on oral presentations of literature reviews on defined areas.

Join Astra Tech at 2003 Congresses!

Many interesting congresses will take place in Europe and the US during 2003. Astra Tech will be present at several of these with our own workshops, exhibitions and activities.

Europeo 4 in Berlin

Why not take the opportunity to combine a trip to the exciting city of Berlin with a visit to the highly scientific Europeo periodontology congress? The congress takes place between June 19–21 at the International Congress Center in Berlin.

Astra Tech will be participating in the congress as a Gold Sponsor and has organised a workshop on the theme “Astra Tech Implants – The Predictable Choice” on Thursday June 19th from 3.30 to 5.30 pm. The speakers are Professor Jan Eirik Ellingsen (Norway), Dr Michael Norton (UK), Dr Florian Müllner (Germany) and Dr Anders Holmén (Astra Tech, Sweden).



Rasmusson (Sweden), Dr Helmut Steveling (Germany), Professor Tord Berglundh (Sweden) and Dr Anders Holmén (Astra Tech Sweden).

Join Astra Tech at these important congresses and increase your knowledge. We look forward to meeting you all; welcome!

IADR in Gothenburg

For everyone interested in the latest odontological scientific advances, a visit to the 81st General Session of IADR/AADR (International and American Associations for Dental Research) is a must. This year it will be held in central Gothenburg, Sweden, where you will be within walking distance of the city and its attractions, and June is the most beautiful time to visit Gothenburg! During the meeting the IADR Implantology Research group will set up a half-day implant symposium “Importance of Implant Surface Structure on Early Bone Bonding”.

On the morning of June 25th, from 9.00 to 12.00 am, Astra Tech invites you to a workshop titled “Clinical Relevance of Scientific Advances with Astra Tech Dental Implant System”. Listen to the views of Dr Lyndon Cooper (USA), Professor Clark Stanford, (USA), Dr Denis Cecchinato (Italy) and Dr Anders Holmén (Astra Tech, Sweden). The workshop will be followed by lunch for all pre-registered participants.

Visit Vienna and EAO in October

At the beautiful imperial Hofburg Palace, the European Association of Osseointegration (EAO) will hold its 12th Annual Scientific Congress on October 9–11. The magnificent former residence of the Habsburg family in conjunction with the high quality scientific sessions will make this a memorable congress. The focus this year is on different aspects of regeneration.

The Astra Tech Gold Sponsor Course entitled “Evidence Based Protocols for Clinical Success” will be held on October 10, from 2.00 to 6.00 pm. Speakers include Assoc. Professor Lars

Calendar 2003

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MAY 9-10	ADI, International two Day Congress Implantology Teamwork <i>Birmingham, UK</i>
MAY 16-18	California Society of Perio <i>Santa Barbara, CA, USA</i>
JUNE 19-21	Europeo 4 <i>Berlin, Germany</i>
JUNE 25-28	IADR, International Association of Dental Research <i>Göteborg, Sweden</i>
SEPTEMBER 21-24	AAP 85th Annual Meeting <i>San Francisco, CA, USA</i>
OCTOBER 8-11	ACP, American College of Prosthodontists Annual Session <i>Dallas, Tx, USA</i>
OCTOBER 9-11	EAO, European Association for Osseointegration <i>Vienna, Austria</i>
OCTOBER 17	UNC 3rd International Symposium <i>Chapel Hill, NC, USA</i>
DECEMBER 5-6	AAOMS, American Association of Oral- and Maxillofacial Surgeons Dental Implant Conference <i>Chicago, IL, USA</i>

Comprising overview

Basic Implant Treatment Course

- Options & Methods

Implant Treatment Course

- Dental Implants and Esthetics

Clinical Training Courses

- Advanced Prosthetic Procedures
- Implant Treatment in Difficult Cases
- Advanced Implant Surgery

Dental Technician Courses

- Laboratory Procedures

In collaboration with Ivoclar Vivadent

- Esthetic Solutions

In-Clinic Training Program

Special Programs

- Customized Program
- International Seminar

In collaboration with the clinic of Prof. J. Linde and Dr. D. Cecchinato

- Clinical and Research Observations on Implants

Do you want to know more about our courses?

Fax this coupon to +46 31 776 30 10, or send us an e-mail to education.dental@astratech.com and we will send you the complete Astra Tech Training and Education Program 2003.

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DENTAL SYSTEM

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As simple as crown and bridge

The pre-prepared Direct Abutment mimics the crown preparation you'd make on a natural tooth, helping you prepare your implant restorations in a way that is familiar, simple, fast and esthetic.

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1.

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2.

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3.

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