



# AnyTime Loading

## IS-II active Implant

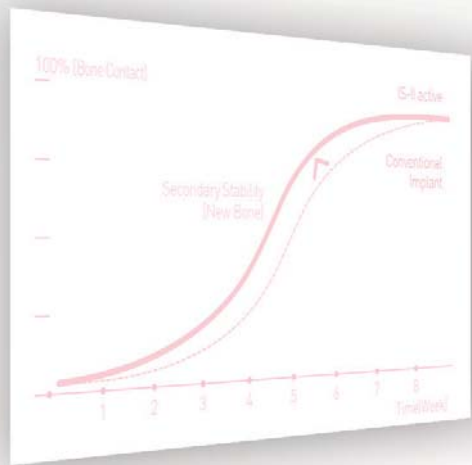
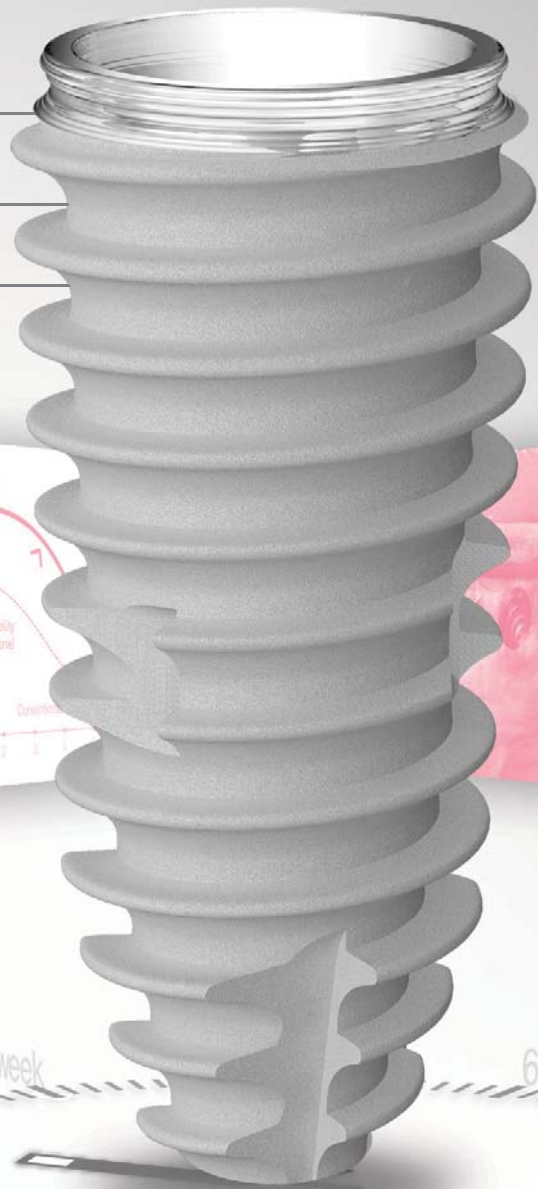


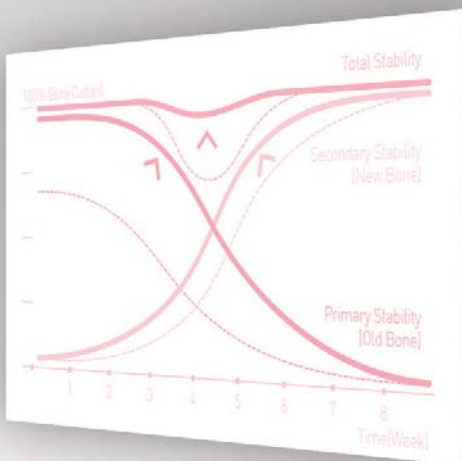
Greater Competitive Advantages for Clinics!  
More Benefits for Patients!  
We Introduce Our Main Implant Concept : AnyTime Loading

**AnyTime** Immediate

Early

Conventional





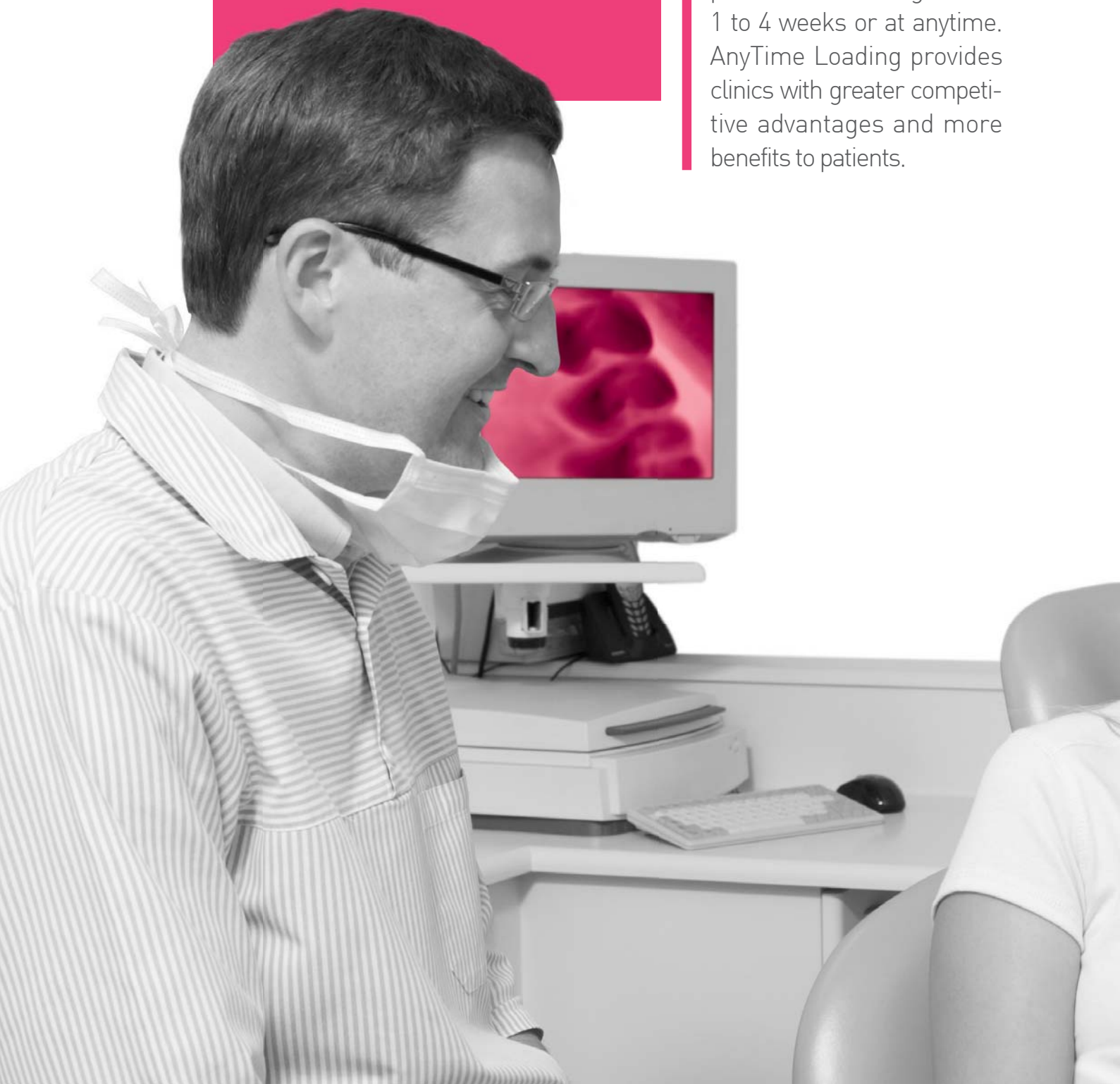
5week  
4week  
3week  
2week

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## High-Quality Implant Surgeries to Patients and Competitive Advantages to Clinics

AnyTime Loading enables prosthesis loading within 1 to 4 weeks or at anytime. AnyTime Loading provides clinics with greater competitive advantages and more benefits to patients.



## | Great For Patients

### **1** Satisfy the Patient's Demands for Comfort, Aesthetics, and Functionality

Delayed Loading causes numerous inconveniences and negative physical impacts. These may include trouble in chewing on both sides simultaneously due to a lengthy masticatory incapacity. Daily life problems, such as gingival recession of the opposing teeth is another issue. Through AnyTime Loading, clinicians can provide satisfying results in functionality and aesthetic, which eventually reduce the stress for the patient and the surgical stages for the professional.

### **2** Clinics Gain Greater Competitive Advantages through AnyTime Loading

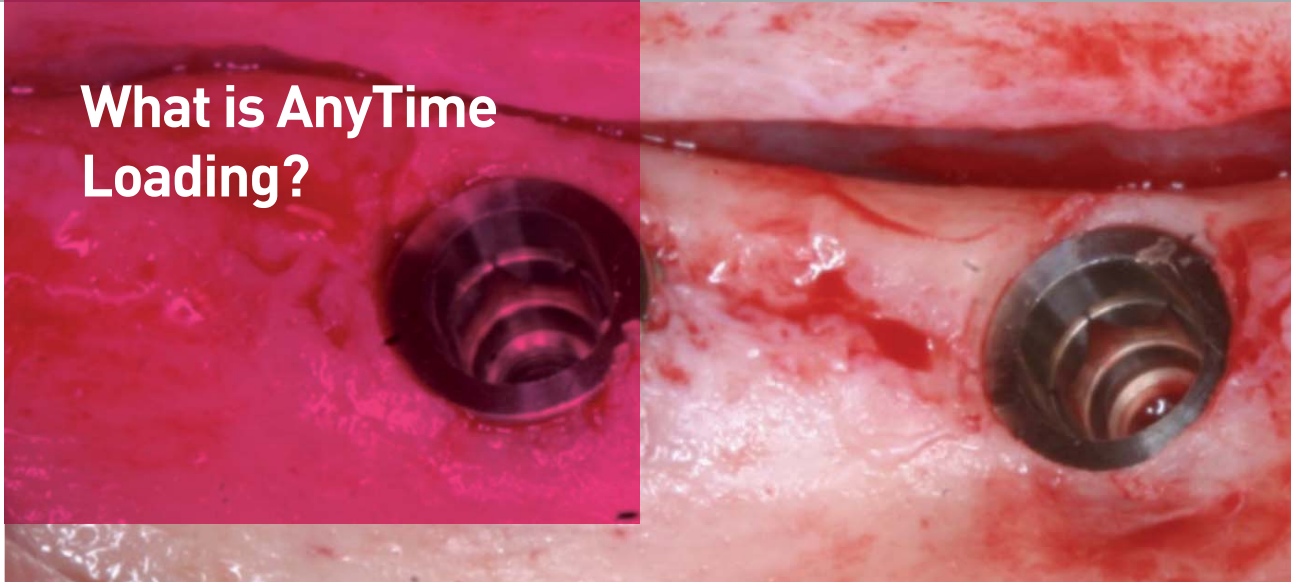
Immediate Loading or Final Loading within 4 weeks offer great benefits to patients that allow more competitiveness for clinics. Patients who have experienced AnyTime Loading will be willing to pay a higher price to the dentists in return for the advanced implant therapy.

### **3** Neobiotech Implants Optimized for Both Immediate and AnyTime Loading

Neobiotech IS-II active Implant has an optimized design, surface treatment and drilling protocols for Immediate Loading. Also, the specialized Surgical Kit allows drilling stages to be performed quickly and safely. The easy and simple drilling protocol of AnyTime Loading allows clinicians to easily achieve strong and stable stability in the cortical bone.

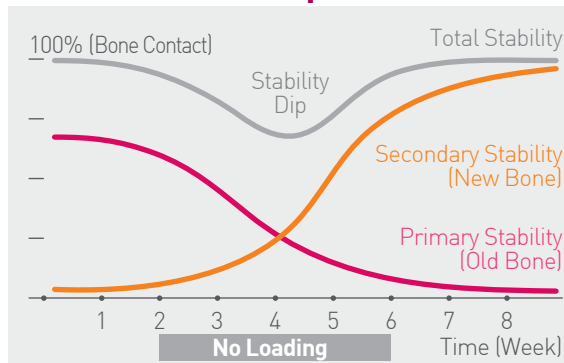


# What is AnyTime Loading?



AnyTime Loading is the loading concept for implants, which makes the prosthetic rehabilitation possible ANYTIME. A dip in stability, a significant drop in implant stability, is usually observed between second and six weeks following implant placement. Any dip in implant stability has fundamental clinical importance for immediate, early, or AnyTime loaded implants as it may lead to implant failure. However, Neobiotech IS-II active implant is optimized for AnyTime Loading with its innovative implant design, surface treatment and drilling protocol. As it maintains the primary stability longer than other implant systems, AnyTime Loading is possible.

## 1 Conventional Implant



### 1. Primary Stability

The primary stability is the initial engagement between the bone and implant, which refers to the mechanical stability. This stability is the value after immediate implantation.

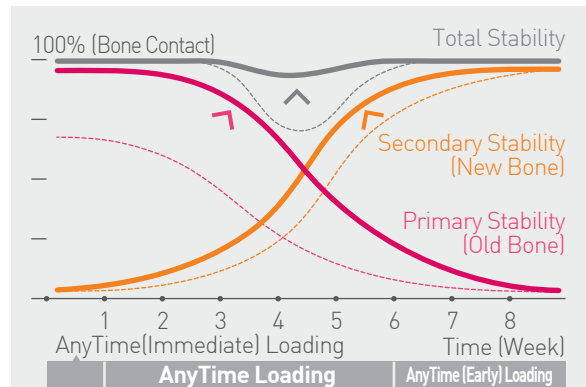
### 2. Secondary Stability

Secondary stability, which is also called the biological stability, is the gradually increasing stability as new bone forms during osseointegration. Secondary stability increases after wound healing while the primary bone contact decreases.

### 3. Total Stability

The sum of primary stability and secondary stability is referred to as the total stability, which is relatively low between 2 and 6 weeks. This period is called the stability dip with a higher rate of implant failure in the early stage of treatment, such as immediate loading.

## 2 IS-II active



### 1. Primary Stability

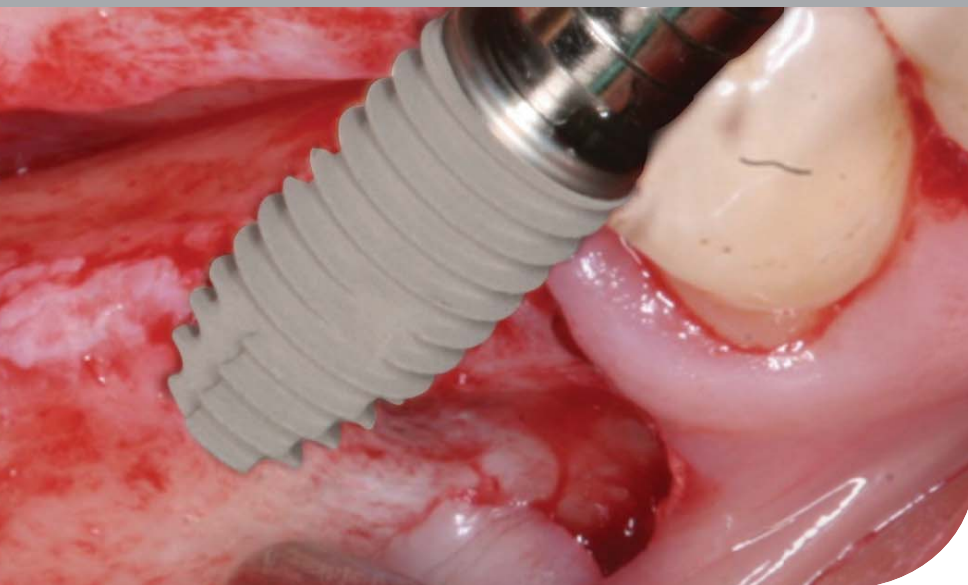
The 'Magic Thread' (reverse-thread type), macro thread, and tapered design of the IS-II active Implant increases and maintains primary stability.

### 2. Secondary Stability

Secondary stability is also increased due to the SLA surface treatment which promotes osseointegration.

### 3. Total Stability

As the fixture design and surface treatment of IS-II active encourage longer maintenance of primary stability and greater secondary stability, the stability dip is dramatically reduced in 2-6 weeks. Therefore, AnyTime Loading is possible by reducing the vulnerable period for loading.



## Neobiotech is the First to Introduce AnyTime Loading Concept to the World

AnyTime Loading is an innovative concept including not only Immediate Loading and Early Loading, but also Conventional Loading all together.

**Immediate Loading** within 1 week or Early Loading in 2-3 weeks could be done when there are sufficient C fixation in the cortical bone and initial stability. This also requires the confidence to take the risk of less than 1% failure rate.

**4 weeks Loading** is the most scientific way to decide the prosthetic loading time. Although the patients seem to be in good conditions for AnyTime Loading, it takes at least 4 weeks of physiological time to determine failing implants due to surgical trauma or surgical infections. Deciding the proper loading time by observing the ISQ (Implant Stability Quotient) values is the most scientific method of choosing the loading period.

**Early Loading**, which is loading after 6 weeks, solely relies on the ability of the implant surface treatment that determines the formation of new bone and osseointegration. In other words, the implant design or the drilling protocol is not as important. Neobiotech has been researching intensively on the surface treatment and has been continuously improved.

**Conventional Loading** is performed in cases of GBR, lack of initial fixation, or in D4 bone.

The key to a successful AnyTime Loading is to achieve a complete understanding of the different loading periods and determine the most optimal loading time on a case-by-case basis.



# AnyTime Loading! Why is This Necessary?

## Dentists

### The Only Solution to Add Premium Value to Your Clinic

As the implant market becomes more competitive, the AnyTime loading technique, which provides rehabilitation with functional crowns for immediate function and esthetics, leads to a greater satisfaction to patients. Believing that the patient could immediately have their teeth replaced, they will be willing to pay for the competitive price.

### Responding to Patients' Demand for Other Implants

In response to the patients who demand for other implant systems, dentists can differentiate Neobio-tech implants by explaining the loading time. The loading period is a crucial factor for the patients in choosing their implant. As an advanced level of treatment service, the AnyTime Loading concept will be a powerful bargaining tool for the clinics.

### Greater Cash Flow with No Concerns for Additional Charge

Due to the shorter treatment time for the dentists, AnyTime Loading allows clinics to improve cash flow. In addition, there is no extra charge for purchasing other equipments or materials for performing AnyTime Loading treatment.

## Patients

### Fast Recovery and Rehabilitation

Long-term delayed implantation may cause marginal tissue recession, disorder of dental arch and health related problems due to decline in masticatory ability. AnyTime Loading allows patients to immediately return to their usual daily life activities since prosthesis can be delivered within 2 weeks.

### Maintenance of Function and Esthetics

If a patient leaves a missing tooth for a long period of time, the adjacent teeth will eventually migrate together to close the gap between the teeth. Not only will this cause an esthetic problem, but also a discomfort in daily life due to lack of self-esteem. AnyTime Loading allows esthetic rehabilitation as well as confidence to patients.

### Simple and Fast Treatment

AnyTime Loading reduces patients' discomfort and guarantees satisfaction with a high success rate.

### Timing of Prosthetic Loading

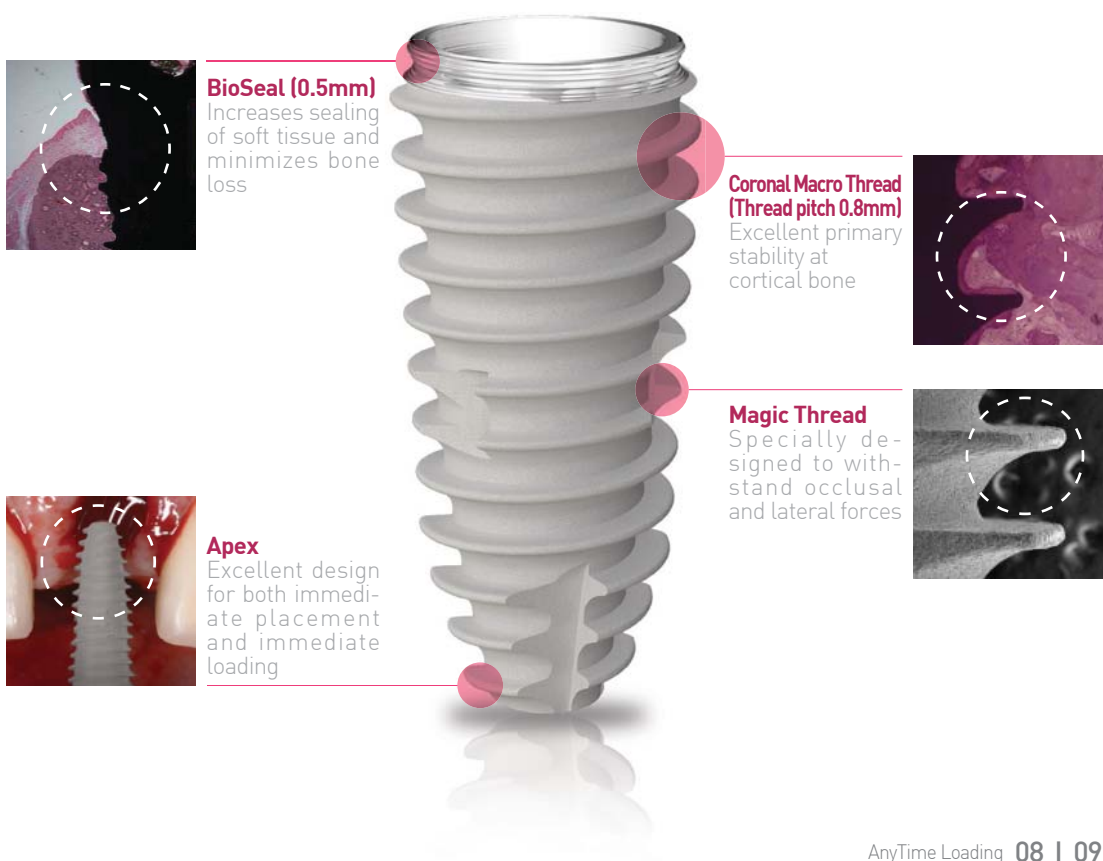
Prosthetic loading time can be arranged to meet patients' needs. Final restorations can be loaded whenever the dentist and patient want.



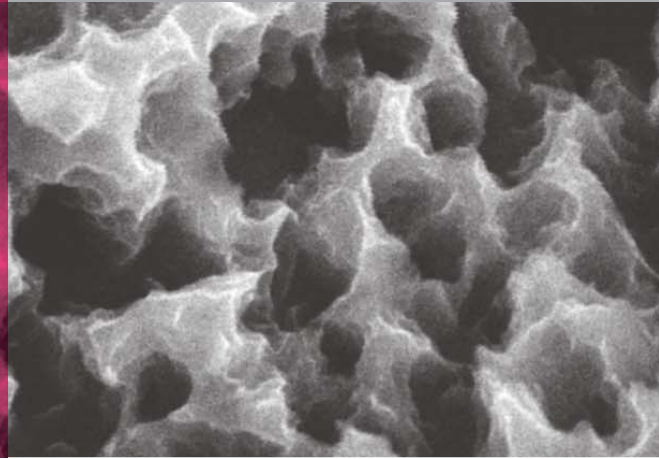
# Why Neobiotech implants are optimized for AnyTime Loading?

## 1 Implant design

The tapered body, powerful apex and reversed tread design of Neobiotech implant allows excellent condition for achieving “self-compaction” in the cancellous bone. The macro thread design in the upper part of the implant also enables a strong and stable initial fixation that facilitates greater primary stability along with Neobiotech’s unique implant concept of “CMI Fixation”.



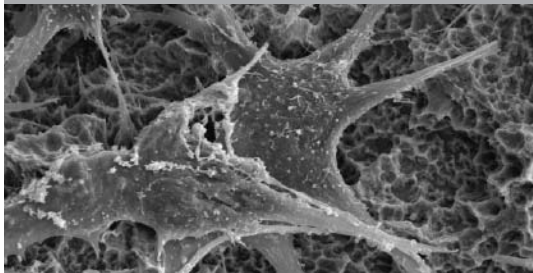
# Why is Neobiotech Implant optimized for AnyTime Loading?



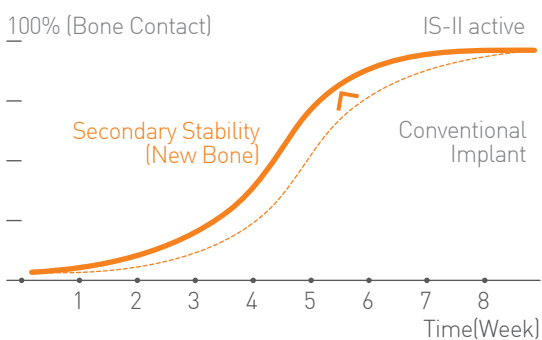
## Surface Treatment

### S.L.A. Surface (Sand-blasted Large grit and Acid etching)

Under 50µm HA (Hydroxy Apatite) power blasting and acid etching



The S.L.A. surface of IS-II active has a combination of macropores and micropores formed by HA (Hydroxy Apatite) sandblasting with a particle size less than 50µm and acid etching. This is used as a form of coating to increase the biocompatibility of the implants. The more the surface area, the more direct bone-to-implant contact that stimulates osteoblasts and boosts blood flow leading to a faster and effective osseointegration. As a result, this S.L.A. surface treatment increases secondary stability.

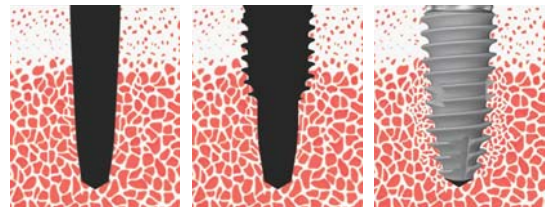
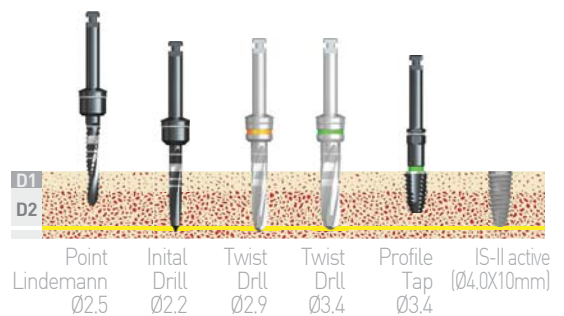


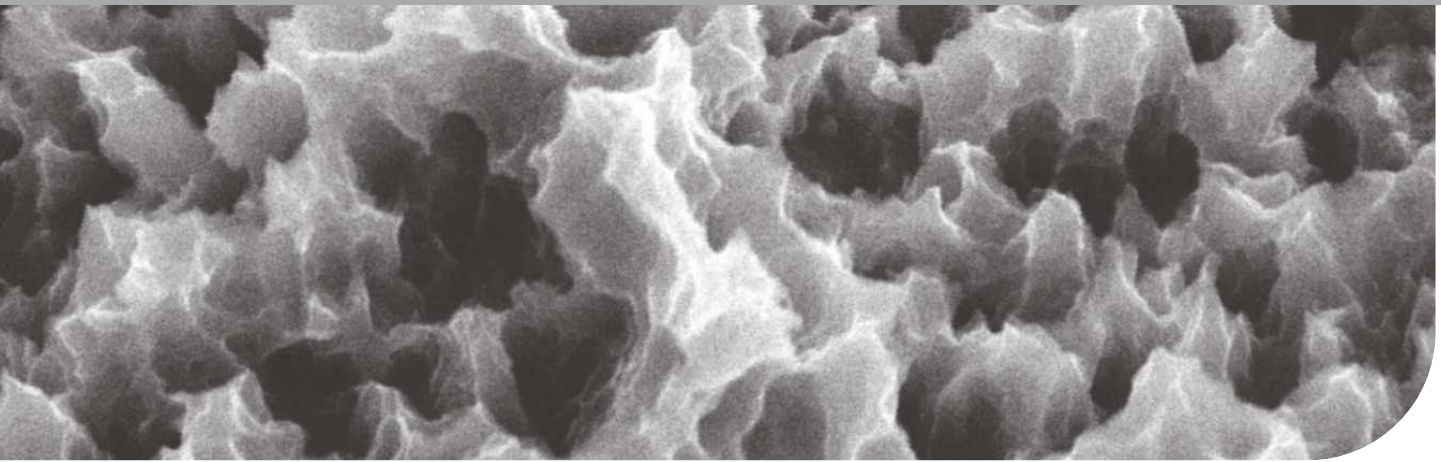
## Surgical kit & Drilling protocols

### IS-Full Kit



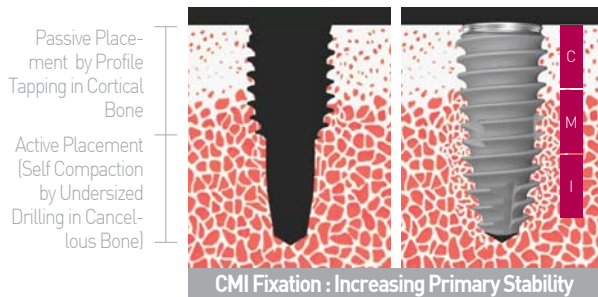
Fast and simple drilling steps and the profile tapping establish the optimal surgical protocol for Anytime Loading concept.





## IS-II active vs. Conventional Implant

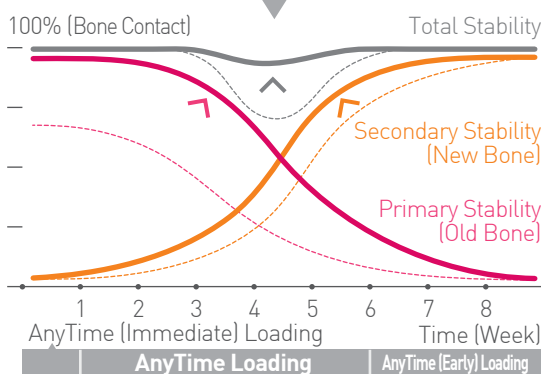
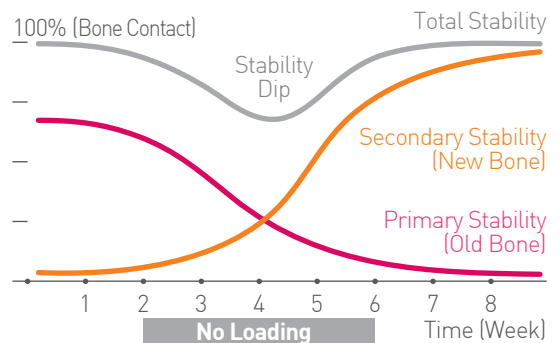
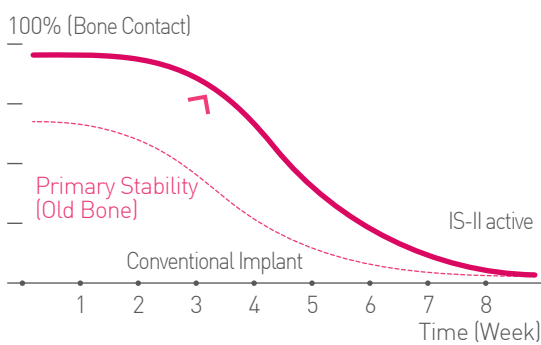
### IS-II active



### Conventional Implant



IS Full Kit is perfectly designed to achieve CMI fixation through a simple drilling protocol. IS-II active can achieve MI fixation in the cancellous bone through active placement (Self Compaction) with undersized drilling, as well as C fixation in the cortical bone through passive placement with the profile tap.



# Surgical Manual for Successful AnyTime Loading



The Initiator of AnyTime Loading Concept, Dr. Heo

# Manual

## Ten Practical Tips for AnyTime Loading

- 1 Choose an appropriate fixture for Immediate Loading.
- 2 In D1-D2 bone, use passive placement (pre-tapping) with 40Ncm of initial stability. Then apply AnyTime Loading.
- 3 In D3-D4 bone, use active placement (self-compaction) with initial stability above 30Ncm and follow up its stability change for 4 weeks.
- 4 Load if the ISQ value is in the 70s or higher for 4 weeks.
- 5 The ideal "C" Fixation is the main key to success in AnyTime Loading.
- 6 In case of insufficient "C" Fixation, splint more than 2 fixtures and try to avoid lateral force.
- 7 For molars, place fixtures wider than  $\varnothing 4.5\text{mm}$ .
- 8 Start with more than 3 units splinted provisional cases.
- 9 Apply screw type of temporary prosthesis with rigid splinting in oral cavity.
- 10 Predict the possibility of osseointegration failures and be prepared to immediately replace the implant when occurs.

## Risk Factors for AnyTime Loading Failure

- 1 Overheating
- 2 Over-compaction
- 3 Overload
- 4 Insufficient initial stability
- 5 Host factors
- 6 Hyper occlusion
- 7 Cantilever
- 8 Washout
- 9 Fracture
- 10 Infection

A 6-month clinical result in Immediate Loading of partial denture patient with CMI Implant placement (Seoul National Univ.)

Average marginal bone loss for right after Immediate Loading, 3-months, and 6-months were 0.03mm, 0.16mm and 0.29mm respectively. There were no implant failures for 6-months showing 100% survival rate of Immediate Loading with the CMI implant.

ORIGINAL ARTICLE

J Adv Prosthodont 2009;1:136-9

DOI:10.4047/jap.2009.1.3.136-9

## Results of immediate loading for implant restoration in partially edentulous patients: a 6-month preliminary prospective study using SinusQuick™ EB implant system

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**STATEMENT OF PROBLEM.** Many dental clinicians are concerned about immediate loading of inserted implants. However, there have been few clinical studies surveying the success rates of immediate loading, based on Korean implant systems. **PURPOSE.** The aim of this study was to evaluate the outcome of immediate functional loading of the implant (SinusQuick™ EB, Neobitech Co., Seoul, Korea) in partially edentulous maxilla or mandible. **MATERIAL AND METHODS.** Total 15 implants were placed. Within 2 weeks after implant insertion, provisional implant-supported fixed partial dentures were delivered to the patients. Quantitatively, marginal bone loss was measured at the time of immediate loading, after 3-months of continued loading and at the last follow-up. The mean follow-up period was 4.8 months. **RESULTS.** Mean marginal bone loss from implant surgery to early loading, 3-months follow-up and last follow-up was  $0.03 \pm 0.07$  mm,  $0.16 \pm 0.17$  mm and  $0.29 \pm 0.19$  mm. No implant failed up to 6 months after insertion, resulting in a 100% survival rate. **CONCLUSION.** Immediate loading exhibited high success rate in partial edentulism for up to 6 months. Well-controlled long term clinical studies with large sample size are necessary to confirm this finding. **KEY WORDS.** Immediate loading, Partially edentulous, Dental implant, Prospective clinical study, Marginal bone loss [J Adv Prosthodont 2009;1:136-9]

### RESULTS

Total 15 implants were placed and were loaded immediately. Table I shows the details of distribution of inserted implants. Marked variability was noted in the implant sizes selected for placement, although implants 11.5 mm length and 5.0 mm diameter were most commonly used. The mean follow-up period was 4.8 months (range, 2 to 6 months). Mean marginal bone loss from implant surgery to immediate loading, 3-months follow-up and last follow-up was found to be 0.03 mm, 0.16 mm and 0.29 mm respectively (Table II). No implant failed up to 6 months after insertion, resulting in a 100% survival rate.

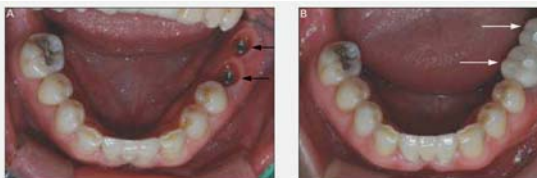


Fig 1. (A) Two implants (SinusQuick™ EB, Neobitech Co., Seoul, Korea) were inserted at #36 and #37 area (black arrows). (B) Provisional restoration (white arrows) was delivered 14 days after implant placement.

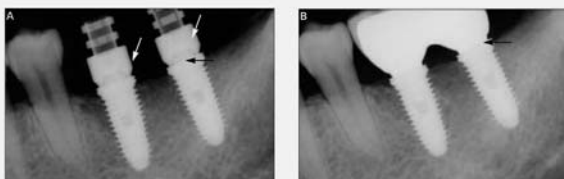


Fig 2. Periapical radiograph was taken at the time of (A) immediate loading and (B) 3-months after continued loading. The platform (black arrows) was a reference point to measure marginal bone loss. Provisional resin restoration was made by polymethylmethacrylate that is radiopaque. Therefore, only temporary cylinders are seen (white arrows).

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# Scientific Papers for AnyTime Loading

# Scientific Paper 2

Loading in 1~2weeks, 2~4weeks, 4~6weeks, 6~8weeks

Survival rate and bone loss according to the Loading Time(1~2, 2~4, 4~6 or 6~8 weeks) for Immediate Loading and Early Loading in partially edentulous molar area with CMI Implant system (Seoul National Univ.) The cumulative survival rate of the implants was 97.0%. Also, implants loaded at 2-8 weeks had 100% of success rates both in the maxilla and the mandible. Regardless of the loading period, no difference more than 0.2mm in marginal bone loss level was observed.

The International Journal of Oral & Maxillofacial Implants 1293

## Retrospective Results of Implants for Partially Edentulous Posterior Jaws According to Time Points of Early Loading

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Young-Ku Heo, DDS, MSD, PhD<sup>4</sup>/In-Sung Yeo, DDS, MSD, PhD<sup>5</sup>

**Purpose:** This study evaluated the survival and success rates and marginal bone loss conditions of early-loaded implants in the posterior maxilla and mandible of partially edentulous patients. **Materials and Methods:** Implants (n = 299) were placed in 105 patients at two research centers. Provisional fixed dental prostheses were provided to the patients between 1 week and 2 months after implant placement. The implants were classified into four groups according to the loading time (1 to 2, 2 to 4, 4 to 6, and 6 to 8 weeks). Periapical radiographs were taken via a parallel imaging technique, and the peri-implant marginal bone level was measured on the radiographic images. **Results:** Most implants were lost within 1 month, and one implant was removed at 36 days after loading. The cumulative survival rate of the implants was 97.0%. Implants loaded in the maxilla at 1 to 2 weeks after prosthesis insertion had significantly lower survival rates than any other group (P = .013). There were no significant differences in marginal bone levels among the implant groups classified according to loading time. **Conclusions:** Early loading is a safe and predictable procedure for implant-supported restoration of posterior partial edentulism. However, care must be taken in early loading within 2 weeks after maxillary implant insertion. INT J ORAL MAXILLOFAC IMPLANTS 2013;28:1293-1299. doi: 10.11607/jomi.2884

**Key words:** early loading, implant, partial edentulism, mandible, maxilla

**Table 2 Marginal Bone Loss by Loading Time**

Location	Follow-up (mo)	Loading time (wk)								P*
		1-2		2-4		4-6		6-8		
		Mean (mm)	n	Mean (mm)	n	Mean (mm)	n	Mean (mm)	n	
Maxilla	6	0.20 ± 0.17		0.20 ± 0.19		0.20 ± 0.16		0.21 ± 0.16		.996
	12	0.22 ± 0.21	27	0.22 ± 0.19	31	0.26 ± 0.20	53	0.26 ± 0.15	47	.816
	24	0.28 ± 0.22		0.29 ± 0.20		0.29 ± 0.19		0.32 ± 0.16		.928
Mandible	6	0.14 ± 0.29		0.11 ± 0.20		0.23 ± 0.33		0.14 ± 0.23		.384
	12	0.25 ± 0.40	19	0.16 ± 0.25	45	0.28 ± 0.36	37	0.16 ± 0.24	35	.505
	24	0.27 ± 0.17		0.21 ± 0.30		0.29 ± 0.34		0.19 ± 0.27		.735

**Table 3 Survival and Success Rates by Loading Time**

Location	Loading time (wk)								P*	
	1-2		2-4		4-6		6-8			
	%	n	%	n	%	n	%	n		
<b>Survival rate</b>										
Maxilla	88.9	27	96.8	31	100	53	100	47		.013
Mandible	100	19	91.8	49	97.4	38	100	35		.132
<b>Success rate</b>										
Maxilla	88.9	27	96.8	31	100	53	100	47		.013
Mandible	100	19	91.8	49	97.4	38	100	35		.132



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# Scientific Papers for AnyTime Loading

# Scientific Paper 3

Loading in 6 weeks

A tissue analysis of Neobiotech CMI implant, which was immediately placed in the extraction site, loaded in 6 weeks, and removed after 10 months (Seoul National Univ.)

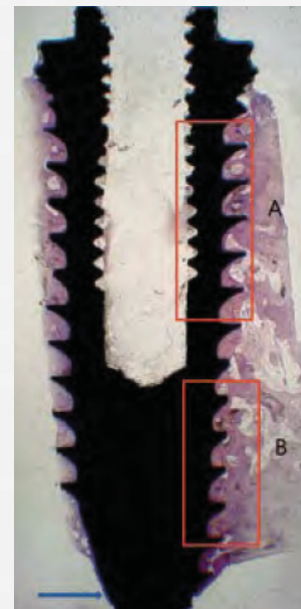
The BIC (Bone Implant Contact) ratio was 88.08% presenting excellent osseointegration. The mean bone fill between threads was 78.46%.

## Histologic Evaluation of a Retrieved Endosseous Implant: A Case Report



Young-Kyun Kim, DDS, PhD<sup>1</sup>  
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Jong-Yub Kim, DDS<sup>3</sup>  
Young-Ku Heo, DDS, PhD<sup>3</sup>  
Ju-Cheol Park, DDS, PhD<sup>4</sup>  
Ji-Su Oh, DDS<sup>5</sup>

An implant that had penetrated the nasal cavity of a 53-year-old woman was removed after 10 months. The implant had a resorbable blast media surface and an external connection. Histomorphometric evaluation showed that the mean bone-implant contact ratio was 88.08%, and excellent osseointegration was observed. The mean bone fill between threads was 78.46%. (Int J Periodontics Restorative Dent 2013;33:e32–e36. doi: 10.11607/prd.1015)



## Conclusions

A resorbable blasted media surface implant removed 10 months after nasal cavity penetration was observed histologically. No BIC developed at the implant apex. Histomorphometric evaluation showed that the mean BIC ratio was 88.08%, with excellent osseointegration. The mean bone fill between threads was 78.46%



Fig 1 The implant placed in the maxillary left canine area had penetrated the nasal fossa.



Fig 2 Appearance after removing the implant using a trephine bur.

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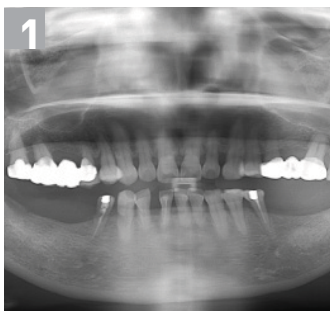
# Clinical Cases of AnyTime Loading with IS-II active

# Case 1

by Dr. Heo

## Case 1

Final prosthesis loading at 4 weeks after IS-II active placement in the posterior mandible



1 Pre-op : Initial X-Ray



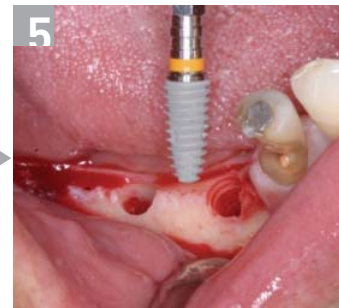
2 Dr. Heo, the founder of the AnyTime Loading Concept  
Missing tooth on #36-37, #45-47



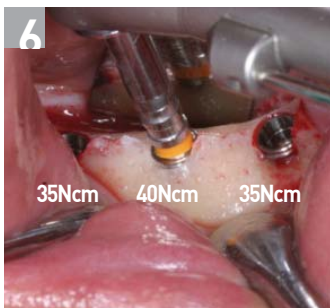
3 Incision



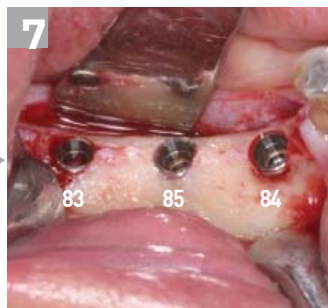
4 Drilling & Profile Tapping



5 IS-II active Placement



6 35Ncm 40Ncm 35Ncm  
35~40Ncm of Insertion Torque

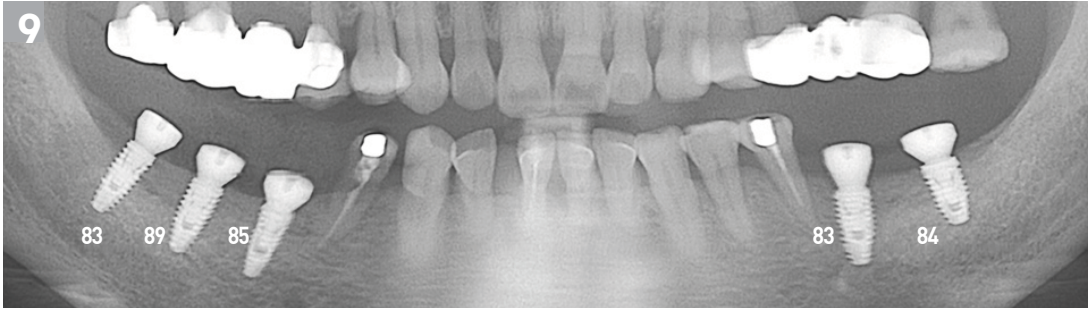


7 83 85 84  
Initial ISQ Value



8 Healing Abutments & Suture





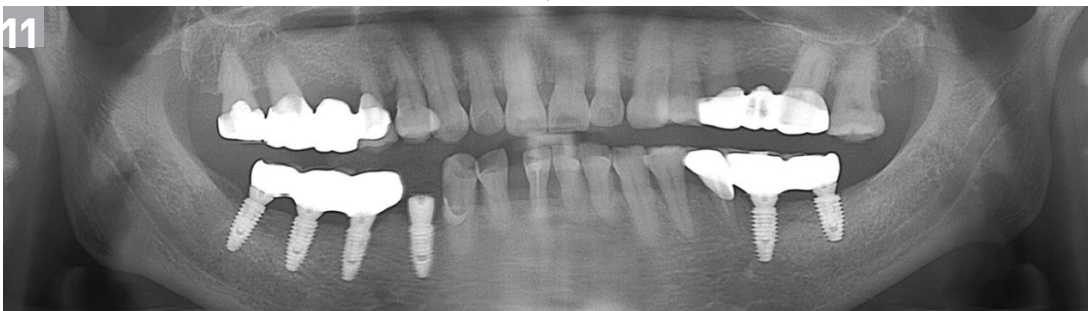
ISQ values at 2 and 4 weeks

Implant Site	#45	#46	#47
Implant Type & Size	BIS4510A #4.5*10.0mm F010112040371	BIS4510A #4.5*10.0mm #F01112000488	BIS4510A #4.5*10.0mm #F01112000488
T (Total)	D <sub>1-3</sub>	D <sub>1-3</sub>	D <sub>1-3</sub>
C (Crestal)			
M (Middle)			
I (Apex)			
Initial Stability (N/Cm)	35	30 → 40	35
Topic	184	85	83

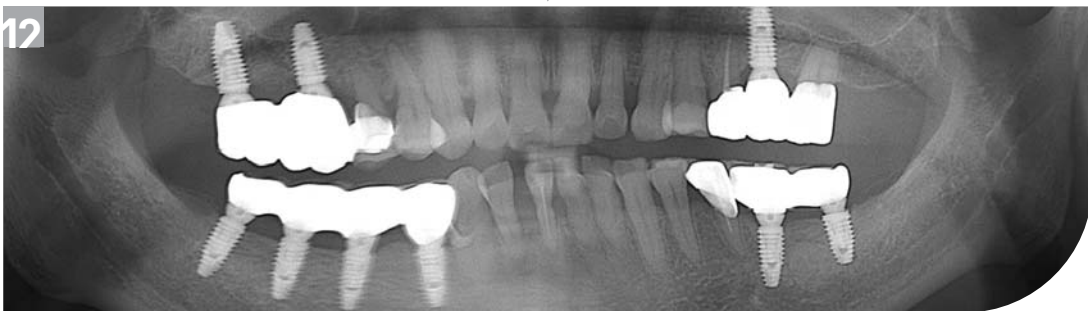
Tooth No.	#45	#46	#47
at surgery	84	85	83
2 weeks	85	89	83
4 weeks	85	90	85



Final Prostheses in 4 weeks



1 Year Later



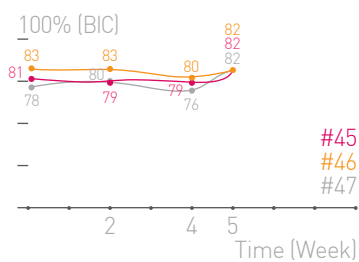
2 Years Later

# Clinical Cases of AnyTime Loading with IS-II active

# Case 2~4 by Dr. Heo

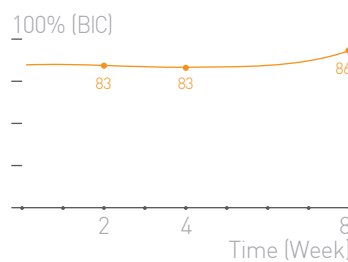
## Case 2

ISQ value at 2 and 4 weeks after IS-II active placement in the posterior mandible



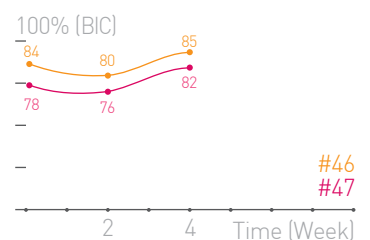
## Case 3

ISQ value at 2, 4, and 8 weeks after IS-II active placement in the posterior mandible



## Case 4

ISQ value at 2 and 4 weeks after IS-II active placement in the posterior mandible





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