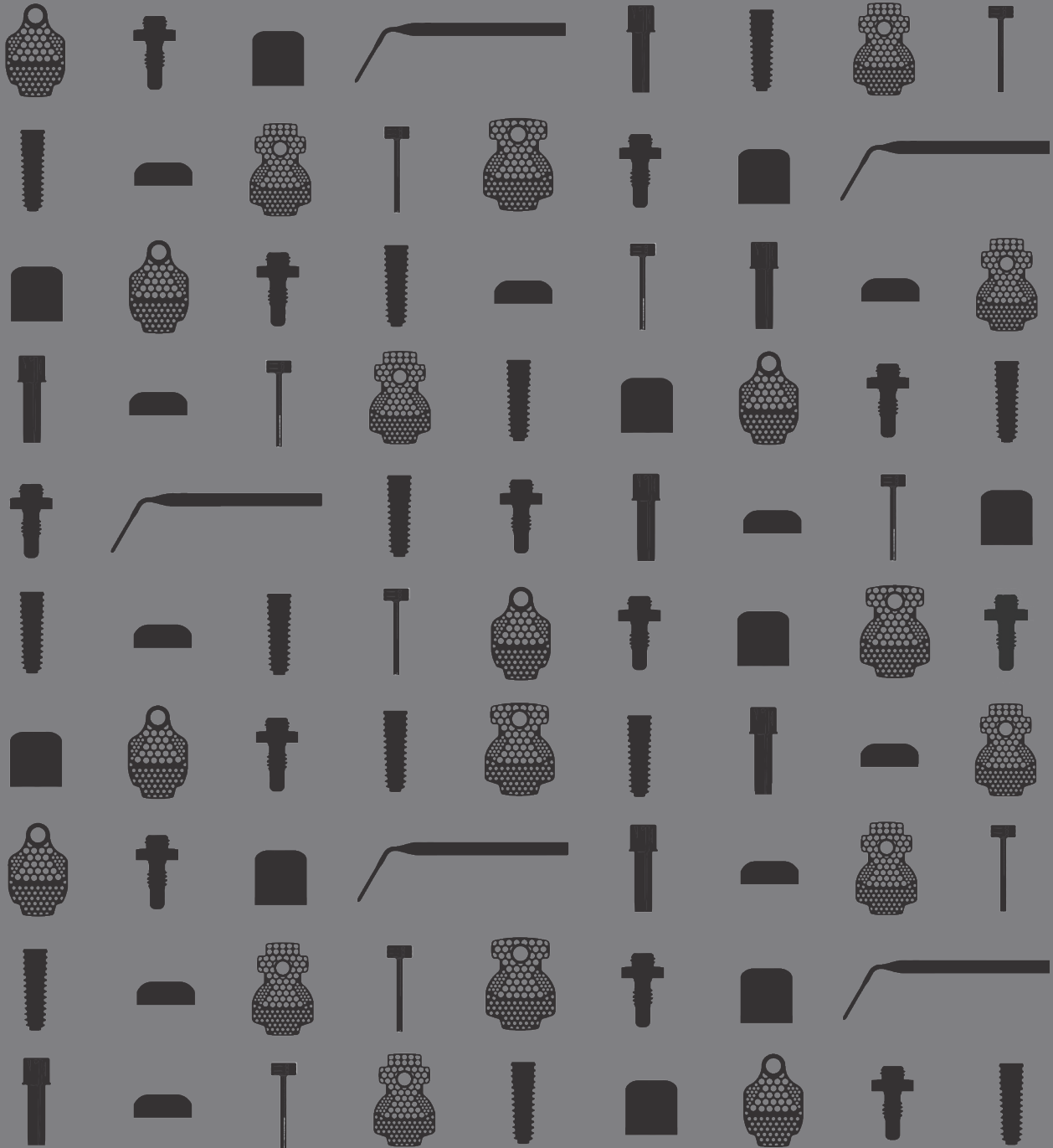



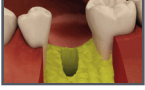






SMARTbuilder



Contents HIOSEN IMPLANT

SMARTbuilder Lateral 	3 Key Features 	4 Pore Specifications 	5 Surgical Procedure 	7 Clinical Cases 
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Key Features

SMARTbuilder is a titanium mesh membrane that provides space maintenance necessary for bone augmentation of alveolar bone defects.

- **SMARTbuilder Lateral** is ideal for simple socket extractions, fenestrations and dehiscence cases that require horizontal and/or vertical bone augmentation of the alveolar ridge.
- **SMARTbuilder Papilla** is used to enhance vertical bone augmentation of the alveolar bone up to 1.5mm, restoring the papilla height for esthetically sensitive cases.

SMART Design

Smooth edges and preformed shape minimize potential exposure through soft tissue.

SMART Coverage

Enhances space-maintaining properties, providing stable coverage and securing bone material in place.

SMART Protection

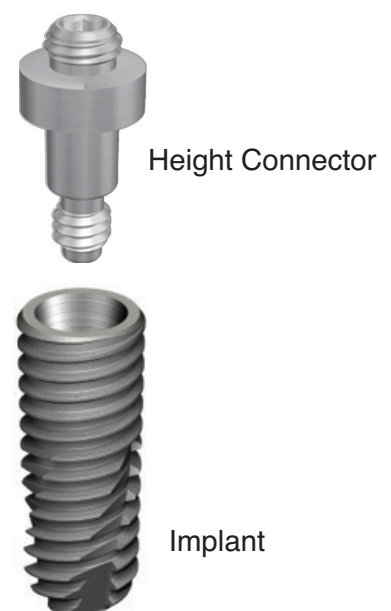
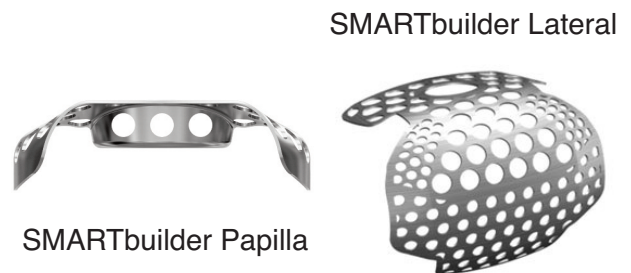
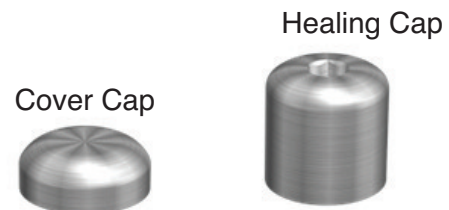
Rigid semi-dome shape withstands deformative forces – preventing membrane collapse into the bone graft. SMARTbuilder directly connects to the implant for a solid attachment.

SMART Application

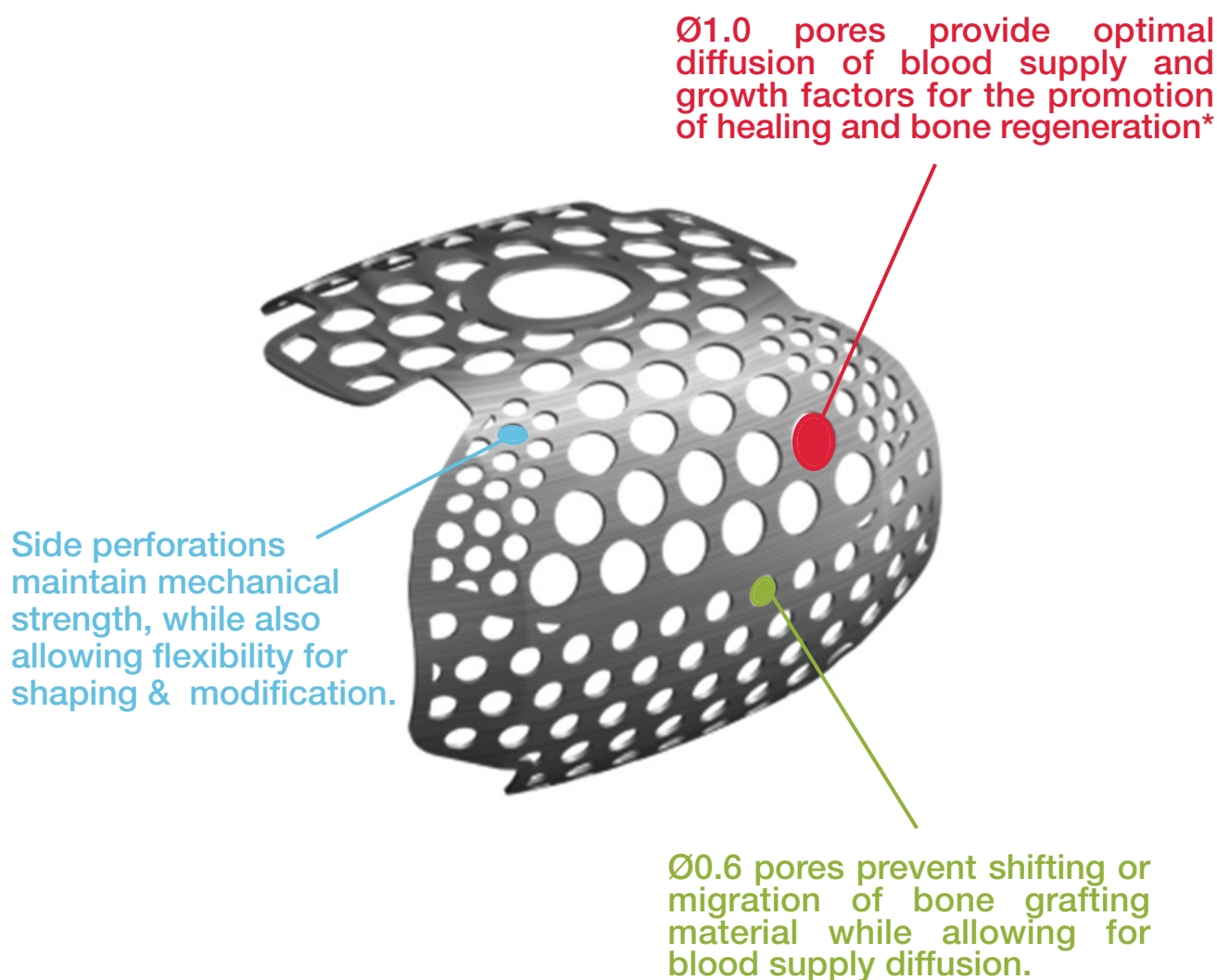
Optimal preformed shape eliminates the need to additional modifications. No bending and cutting necessary, and no need for tacks!

SMART Healing

Optimized pore patterns allow for diffusion of fluids and growth factors, while creating a barrier for cell occlusions between soft and hard tissue.



Pore Specification

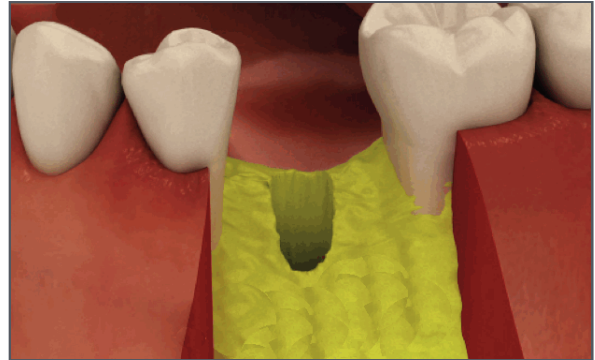


Membrane Type	Regeneration Area (mm ²)	Soft Tissue Ingrowth (mm ²)	MAR (Mineral Apposition Rate)
Macro-mesh with Ø1.2 pores	66.26±13.78	16.96	1.09µm/day5
Micro-mesh with Ø0.6 pores	52.82±24.75	22.29	-
Resorbable-mesh with Ø1.0 pores	46.76±21.22	23.47	2.41µm/day2
Without pores	29.80±9.35	9.41	-

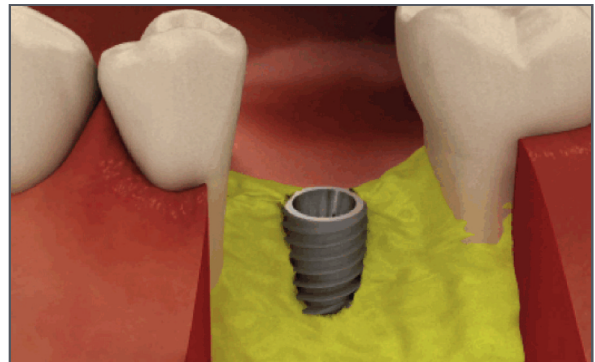
*The role of barrier membranes for guided bone regeneration and restoration of large bone defects: current experimental and clinical evidence. Rozali Dimitriou, George L Mataliotakis, Giorgio Maria Calori and Peter V Giannoudis Journal of Oral and Maxillofacial Surgery Volume 67 Issue 6, Pages 1218-1225, June 2009

Surgical Procedure

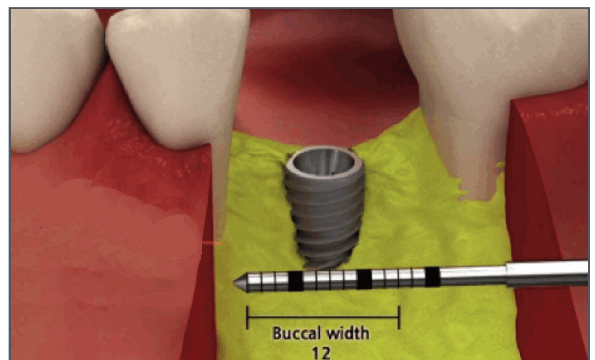
1. Uncover and inspect defective area



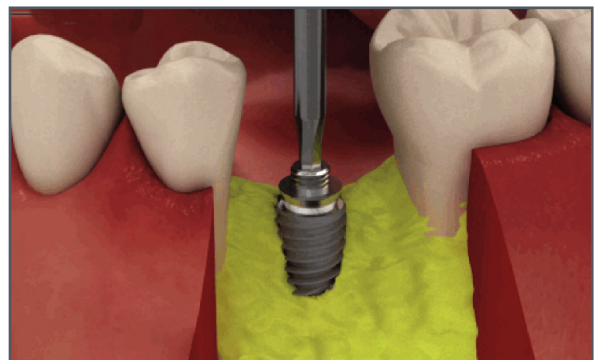
2. Place implant



3. Measure defect to determine the appropriate SMARTbuilder shape and size



4. Using 1.2 Hex driver, apply height connector to the fixture with 5~8Ncm

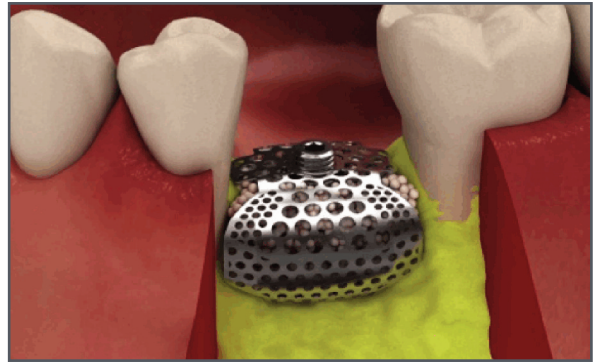


Surgical Procedure

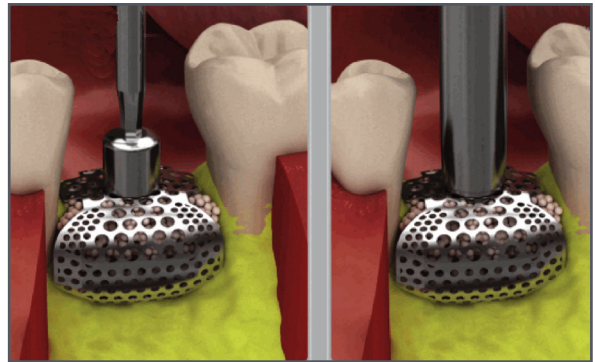
5. Deliver bone graft material to the site



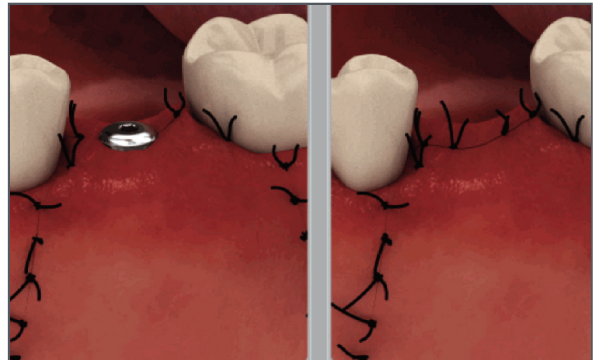
6. Connect SMARTbuilder to the height connector and confirm fit. If necessary, modify membrane to securely enclose the graft area



7. Using 1.2 Hex driver OR the cover cap driver, connect the healing cap with 5~8Ncm



8. Carefully replace gingival flap and suture

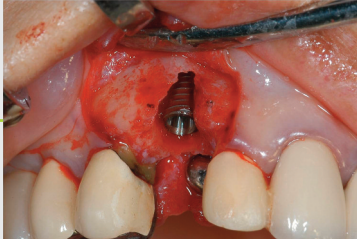


Clinical Cases

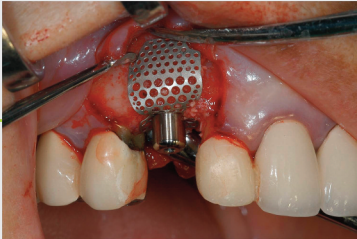
Case 1



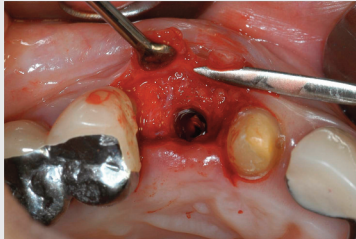
Pre-op CT (#11)



Dehiscence of buccal bone



Application of SB2



Bone regeneration



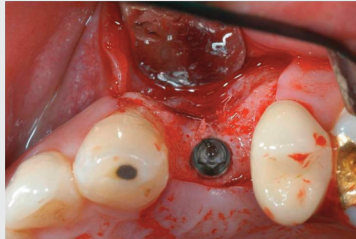
1 year Post-op CT (#11)



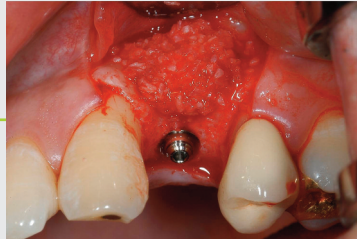
Final prosthesis

Case photos courtesy of Dr. Oh, Sang-yoon, Acro Dental Clinic

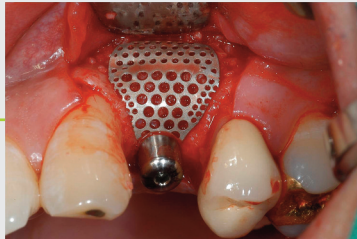
Case 2



Labial bone deficiency



Bone grafting material



Application of SB2



2 month follow up (3D CT)



Bone regeneration



Final prosthesis

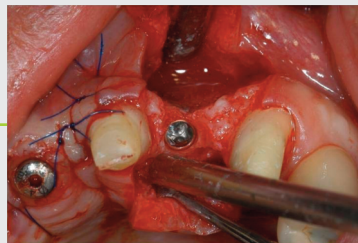
Case photos courtesy of Dr. Oh, Sang-yoon, Acro Dental Clinic

Clinical Cases

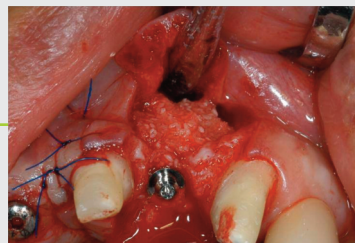
Case 3



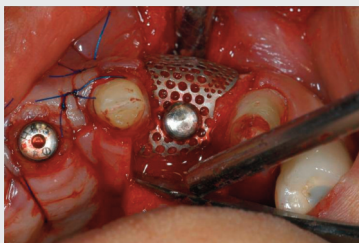
Pre-op intraoral view



Atrophic ridge



Bone grafting



Application of SB2T2



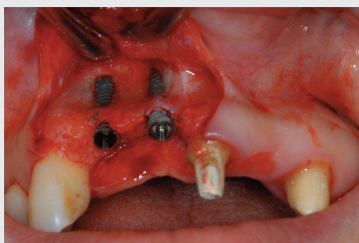
Bone regeneration



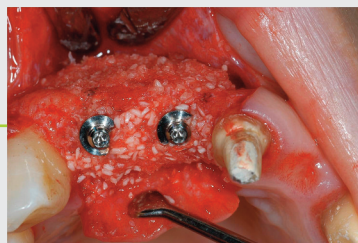
Provisional crown (1 month)

Case photos courtesy of Dr. Oh, Sang-yoon, Acro Dental Clinic

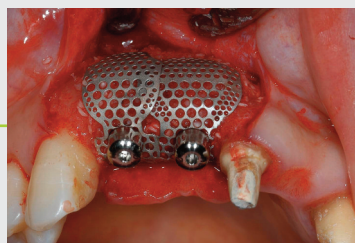
Case 4



Horizontal & vertical deficiencies



Bone grafting



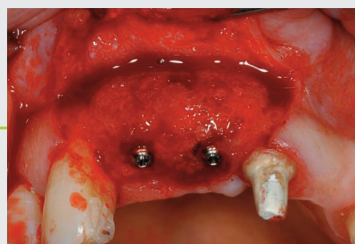
Application of SBT3



Post-op CT (#7)



Post-op CT (#8)



4 month follow up

Case photos courtesy of Dr. Oh, Sang-yoon, Acro Dental Clinic

Suggested Application by Type

Type 1



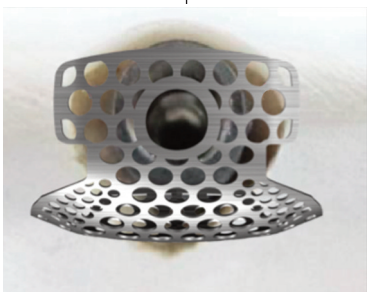
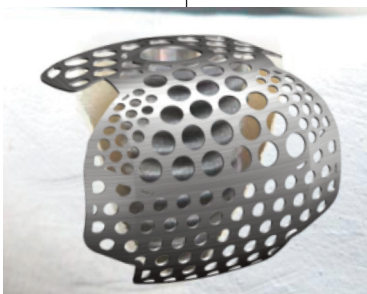
Type 1



Type 2



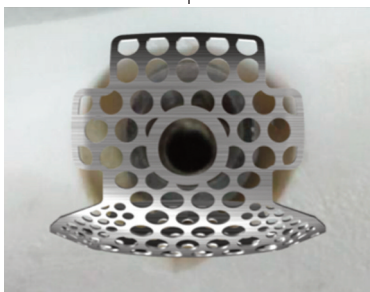
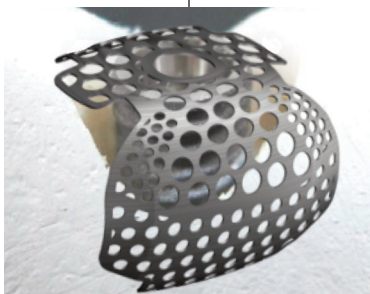
Type 2





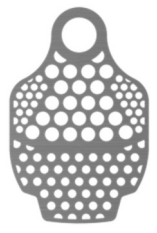


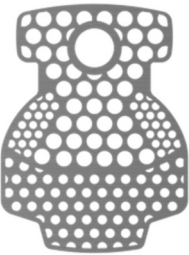


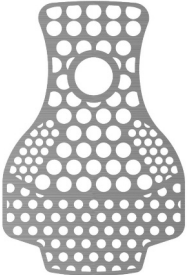


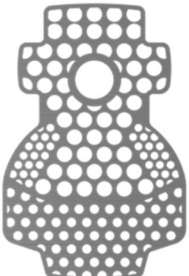
Type 3



Type 3



Product Specifications

Classification	SMARTbuilder Lateral [SB2]		P (Proximal)	BW (Buccal width)	BL (Buccal Length)	BD (Buccal Distance)	Code
	3D	2D					
1 Wall 			4	8	7	5.5	SM1W487SB
			4	10	7	5.5	SM1W4107SB
			4	10	9	5.5	SM1W4109SB
2 Wall (Buccal-Proximal) 			7	9	7	5.5	SM2W797SB
			7	9	9	5.5	SM2W799SB
			10	12	7	5.5	SM2W10127SB
			10	12	9	5.5	SM2W10129SB
			12	12	7	5.5	SM2W12127SB
			12	12	9	5.5	SM2W12129SB
2 Wall (Buccal-Lingual) 			5	9	7	5.5	SM2W597SE
			5	9	9	5.5	SM2W599SE
			6	12	7	5.5	SM2W6127SE
			6	12	9	5.5	SM2W6129SE
			7	12	7	5.5	SM2W7127SE
			7	12	9	5.5	SM2W7129SE
3 Wall 			7	9	7	5.5	SM3W797SB
			7	9	9	5.5	SM3W799SB
			10	12	7	5.5	SM3W10127SB
			10	12	9	5.5	SM3W10129SB
			12	12	7	5.5	SM3W12127SB
			12	12	9	5.5	SM3W12129SB

Components

Healing Cap



		Regular	
Diameter		Ø4.0	Ø5.0
Height (mm)	3.0	SMHA443	SMHA553R
	4.0	SMHA444R	SMHA554R

Cover Cap



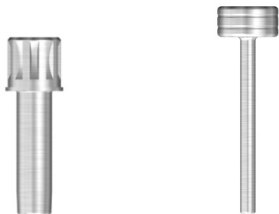
		Regular
Diameter		Ø4.0
Height (mm)	0.5	SMCC415

Height Connector



		Mini	Regular
Diameter		Ø3.5	Ø4.0
Gingival Height (mm)	0.5	SMHI305TSM	SMHI405TSR
	1.0	SMHI310TSM	SMHI410TSR
	1.5	SMHI315TSM	SMHI415TSR
	2.0	SMHI320TSM	SMHI420TSR
	2.5	SMHI325TSM	SMHI425TSR
	3.0	SMHI330TSM	SMHI430TSR

Cover Cap Driver Set



Code	Long (23mm)	SMCDES
	Short (18mm)	SMCDESS

Defect Gauge



Code	SMDG
------	------

- Measures bone defect size
- Markers : Standard lines are 1mm increments
Bold lines are 5mm increments

SMARTbuilder Papilla

1. Papilla Shape Restoration

- SB1 Papilla is pre-formed to mimic the shape of a normal papilla

2. No Trimming or Bending

- SB1's pre-formed 3D design does not required any modifications
- Available in a variety of sizes to fit most clinical case

3. No Mesh Exposure

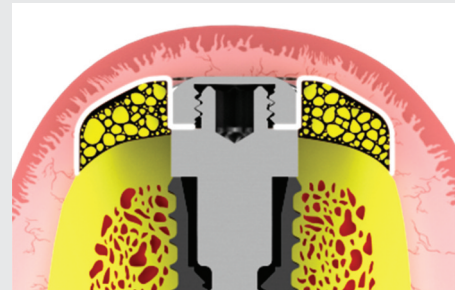
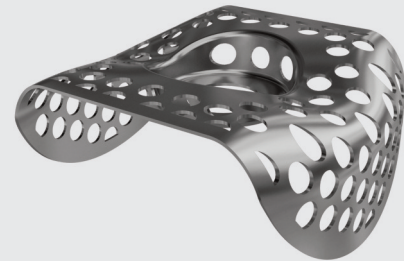
- Pre-formed 3D design with smooth edges and free of "wrinkles"
- Securely fixated to an implant via a height connector and cover cap

4. Excellent Bone Regeneration

- 1.0mm pores throughout the membrane allow for adequate blood supply vital for bone regeneration

5. Easy Primary Closure

- The cover cap is flush with the membrane, therefore simple and easy primary closure is possible



Current Surgical Technique



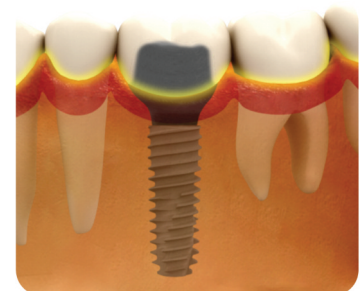
The papilla at the surgical site is lower, creating an unfavorable esthetic result

Papilla Builder Technique



SB1 is applied, alveolar ridge is augmented and the papilla is elevated

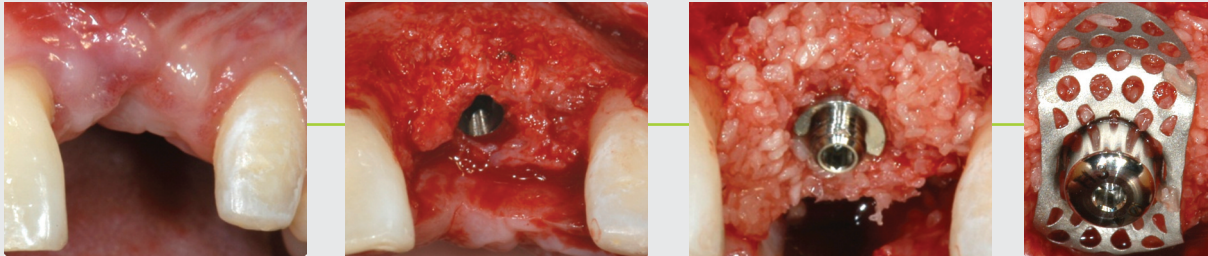
Better Esthetic Restoration



Papilla is elevated to the proper height, which allows for an esthetically pleasing restoration

SMARTbuilder Papilla

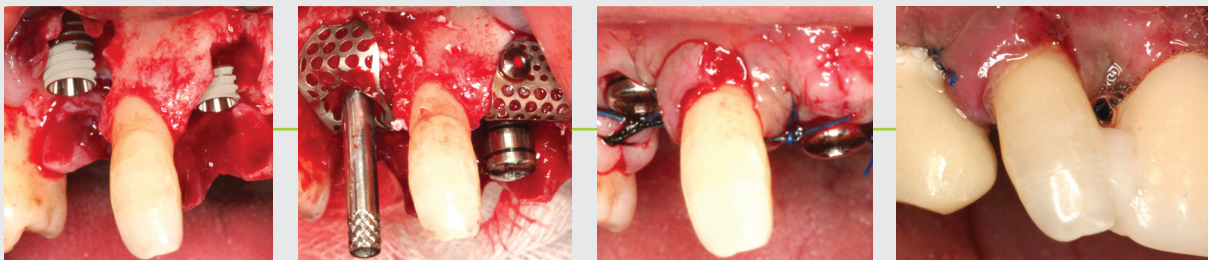
Case 1



This case shows the SB1 being utilized after standard GBR treatment was unsuccessful in regenerating enough bone, vertically. After application of the SB1 with additional bone grafting material, bone volume increased and elevated the papilla.

Photos courtesy of Dr. S.Y. Oh, D.D.S., Acro Dental Clinic


Case 2



Immediate placement of implants in freshly extracted sockets

- SB1 with bone grafting material is applied
- Temporary restoration (performed in 1 day)

Photos courtesy of Dr. I.J. Lim, D.D.S., Kwang-myung Jae-il Dental Clinic

SMARTbuilder Papilla [SB1]	P (Proximal)	LD (Lingual Distance)	BL (Buccal Length)	BD (Buccal Distance)	Code
	7	5	3	5	SB1P73A
	7	5	5	5	SB1P75A
	10	5.5	3	5.5	SB1P103A
	10	5.5	5	5.5	SB1P105A
	12	6.5	3	6.5	SB1P123A
	12	6.5	5	6.5	SB1P125A

Bone Graft Material

SureOss[®] (FDDBA)



SureOss[®] (DFDBA)



OsteOss[™]



Special recognition for their support and research in developing the SB1

-Dr. I.J. Lim, D.D.S., Kwang-myung Jae-il Dental Clinic

-Dr. S.Y. Oh, D.D.S., Arco Dental Clinic

-Dr. K.D. Jung, D.D.S., Busan Changing Smiles Dental Clinic

www.hiossen.com

Edition 02

SMARTbuilder SYSTEM

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