Everyone Can Achieve

SUCTION-EFFECTIVE MANDIBULAR COMPLETE DENTURE

SEMCD

Abe Dental Clinic

Jiro Abe

INTERACTION

Preface

Many dental researchers are currently embracing the Visual Analog Scale (VAS) and Oral Health Impact Profile(OHIP) to evaluate patient denture satisfaction levels. It is because these methods are useful to create a visible measure to scale patients' level of satisfaction. Nevertheless, these results are concluded based on a series of questions answered by patients but not clinicians. In other words, the results vary between patients and are also very subjective because each patient has an individual level of satisfaction.

To determine the critical components of patient satisfaction level in the complete denture treatments, I propose a new standard on how to evaluate the quality of edentulous impressions by clinicians. Some may argue that the majority of clinicians can quickly assess the success of conventional denture methods, such as the compound impression technique since it has been used and taught in dental schools worldwide. However, this impression technique and its result can be commented on and evaluated differently by various clinicians. Some people may say, *"You took very nice impressions, and the patient will be pleased" others say, "Your impressions are too big. It will cause your patient to be dissatisfied".*

To create a single standard for evaluating an impression of an edentulous mandible, I will first apply a very straightforward method to assess the quality of an edentulous impression of the maxilla.

When you evaluate the quality of maxillary impression for an edentulous patient, the majority of clinicians check the amount of suction by moving the maxillary impression forward and downward to test the creation of negative pressure, which creates a suction seal. Thus, one can expect that the amount of suction effect of the maxillary edentulous impression will be equivalent to the amount of suction when delivering the completed denture prosthesis to the patient. We can usually determine the level of patient denture satisfaction by merely observing the amount of suction at the time of the final impression. By applying the same evaluation methods, we can also determine the quality of an edentulous mandibular impression. When you follow the SEMCD process (Suction-Effective Mandibular Complete Den-

ture) and remove the mandibular edentulous impression from the patient's mouth, you will hear a suction-releasing "Pop" which you have never heard before. Even though some clinicians may have experienced this suction "Pop" sound before they learned the SEMCD method, they probably could not explain why the lower suction sound was created and how to replicate it with other denture patients. Many Clinicians around the world have taken SEMCD hands-on training courses and are applying this technique in their daily practice. It is thus straightforward and effective to use the suction "Pop" sound as the primary measure to evaluate lower denture success.

Many SEMCD lecture attendees have expressed very similar comments and often share their experiences, such as *"Hearing the suction "Pop" sound, made me very happy and I got goosebumps"* or, *"I cannot wait to apply this technique in my practice to create more patient satisfaction"*. It is evident that when you apply simply the suction "Pop" sound as the main key element to evaluate the quality of the edentulous impression of the mandible, you can confidently measure the quality of your impressions and present your advanced skill level to your patients. The SEMCD method allows us to thrive not only as dental professionals but also as members of a worldwide SEMCD family.

Jiro Abe

Foreword

Over the past 18 years, I have experienced successes and frustrations while working with fully-edentulous patients. Making a stable and retentive non-implant supported lower denture has been truly challenging as many patients struggle with loose mandibular dentures. The McGill Consensus Statement on Overdentures in 2002 recommended that "*a 2-implant overdenture should become the first-choice treatment for the edentulous mandible,*" yet very few denture wearers proceed with implant therapy.

My denturist career was transformed in 2014 with the introduction to Dr. Jiro Abe and his SEMCD/lower suction denture technique by Masato Takeuchi, one of my students while I was teaching denturism at Vancouver Community College. He shared Dr. Abe's lower suction denture YouTube video and textbook, Mandibular Suction-Effective Denture and BPS: A Complete Guide, and I was intrigued. With Masato's help, I attempted to implement Dr. Abe's technique and began to achieve lower suction denture success, which was impossible before. Not only was I excited to achieve mandibular suction repeatedly, but my patients reported much-improved denture stability and greater denture satisfaction. SEMCD worked, I needed to learn more and so attended Dr. Abe's introductory SEMCD course in 2015, and returned three more times to Tokyo to become a clinical and technical SEMCD world instructor.

It has been an honour to get to know Dr. Abe's and review his updated BPS/SEMCD textbook. He has devoted his dental career to improve the lives of denture wearers, and this publication contains an easy-to-follow method to achieve this goal. The Bio-functional Prosthetic System (BPS), with it's proven clinical and laboratory materials and tools, is the foundation for denture success. Dr. Abe explains in great detail the essential clinical and technical steps on how to create a suction-effective seal between the mandibular denture borders and oral mucosa. Achieving mandibular suction is no longer a mystery or "simple luck" but is achievable for all levels of denture care providers. SEMCD has transformed my professional career, and I earnestly hope that it will become the new standard to create better-fitting dentures and will be shared in dental educational facilities around the globe. Denture wearers deserve better dentures, and SEMCD is a proven technique that delivers custom-crafted prosthesis.

Thank you, Dr. Abe, for your passion and dedication to improve removable prosthetics and for equipping us with expanded knowledge and new skills to help our edentulous patients.

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August 2020

Foreword

For most of my 27 year career in the dental industry, the world of removable dental prosthetics has often been frowned upon, not seen as a desirable or even considered gold standard treatment . At one juncture, it was suggested to me that nobody would be wearing complete dentures by the year 2000 yet, 20 years later, complete denture treatments account for almost 20% of the total treatment carried out at my clinic in the Republic of Ireland .

Dr. Jiro Abe has devoted a large part of his entire life to the development of (SEMCD) suction mechanism for complete mandibular dentures not only for his own patients but to spreading his pioneering techniques worldwide. This book is an absolute must for all members of a dental team involved in removable dental prosthetics from the most experienced prosthodontist to the young dentist fresh out of university to experienced denturists and dental technicians of all ages and ability. We are all part of a dental team with one goal in mind, providing the highest possible standard of care to our patients.

I first encountered the name Dr. Jiro Abe in 2015 while receiving IvoBase technical training. During this time, I was shown a short video clip of Dr. Abe trying, with difficulty, to remove a complete mandibular denture due to the incredible suction action. I was fascinated and had to seek out Dr. Abe for myself.

I first travelled to Japan in January 2016 for a basic 2 day hands on course and I've since become of or Dr. Abe's trusted lieutenants and disciples of SEMCD. This book is a wonderful collaboration between Dr. Abe's suction mechanism and the BPS system developed by the global dental giant, ivoclar vivadent. This book has been written in a very clear step by step approach which is very easy to understand both clinically and technically. It will inspire anyone who reads it to improve their prosthodontic skills, as it inspired me. Thank you Dr. Abe.

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1 What is Suction?

Suction can be defined as "the production of a partial vacuum by reason of reduced air pressure in order to procure adhesion" (Oxford Languages Dictionary).

The author describes lower denture suction as a "negative pressure/suction effect generated when the patient occludes from the mandibular rest position. Saliva under the denture base is discharged at that biting moment generating negative pressure by sealing the entire denture border all around" (**Fig A**).

Fig A Lower denture suction is created by sealing the entire border with oral lining mucosa.

Requirements for mandibular denture

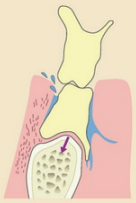
1. Sealing all denture borders
It is essential to seal the entire denture borders with the mobile oral mucosa in order to ensure an effective suction of the mandibular complete denture.

2. Establishment of suction
When occlusal forces are applied to the denture, saliva is squeezed out, temporarily creating a negative pressure to the interior surface of the denture base. The oral mucosa and tongue also provide support.

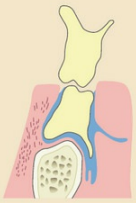
3. Maintenance of suction
Once suction is established, the denture stays in place when the patient opens the mouth.

Intraoral status

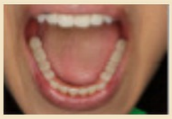
1. During swallowing (teeth in occlusion)
In order to swallow, posterior teeth must be in contact. The average person is said to swallow about 2000 times a day. Saliva is squeezed out with occlusal pressure during swallowing.



2. In mandibular rest position
Maxillary and mandibular denture teeth are out of occlusion when the mandible is at rest.



3. During mouth opening
The mobile mucosa exerts lifting force, but suction can be maintained even without occlusal pressure.



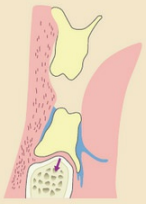


Fig F Mechanism of suction.

Yes!!

Fig Ha Pretreatment: Initial visit.

Fig Hb Posttreatment: Smiling face in full of happiness.

Yes!!

Fig Ia,b Once the mandibular complete denture is effective in suction, both patient and operator are in great comfort.

Clinical applications of BPS

1.U & L complete dentures

2. Maximally single denture and Mandibular conical crown restoration

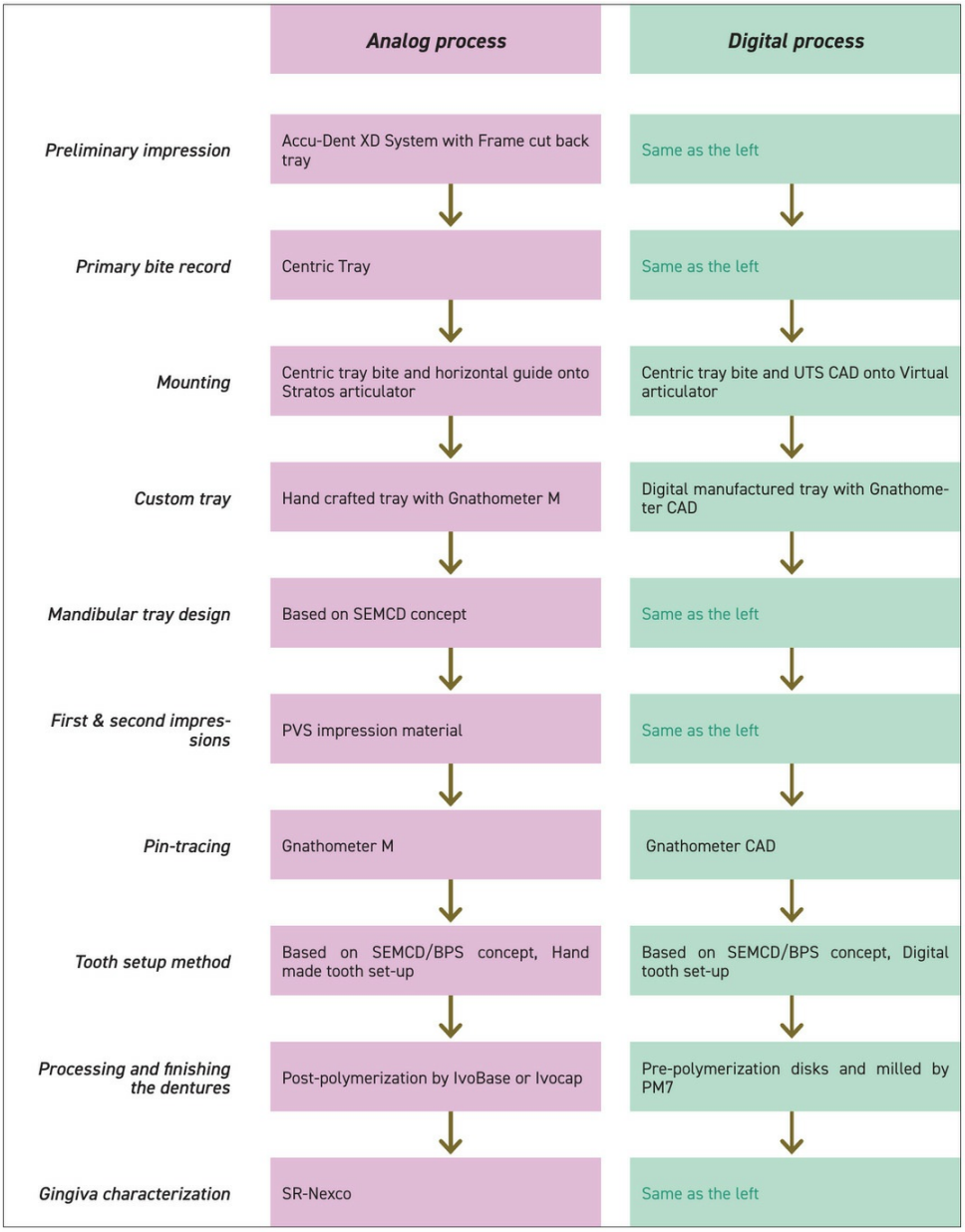
3. I.O.D

4. Over-dentures

5. Duplicated denture Courtesy by Ivoclar Vivadent

Fig1-6

Digital denture methods only change the laboratory workflow, but the clinical performance remains unchanged



	Analog process	*Digital process*
Preliminary impression	Accu-Dent XD System with Frame cut back tray	Same as the left
Primary bite record	Centric Tray	Same as the left
Mounting	Centric tray bite and horizontal guide onto Stratos articulator	Centric tray bite and UTS CAD onto Virtual articulator
Custom tray	Hand crafted tray with Gnathometer M	Digital manufactured tray with Gnathometer CAD
Mandibular tray design	Based on SEMCD concept	Same as the left
First & second impressions	PVS impression material	Same as the left
Pin-tracing	Gnathometer M	Gnathometer CAD
Tooth setup method	Based on SEMCD/BPS concept, Hand made tooth set-up	Based on SEMCD/BPS concept, Digital tooth set-up
Processing and finishing the dentures	Post-polymerization by IvoBase or Ivocap	Pre-polymerization disks and milled by PM7
Gingiva characterization	SR-Nexco	Same as the left

Table 2-1 Difference between analog and 3 Shape/Ivoclar Vivadent digital denture workflow processes.

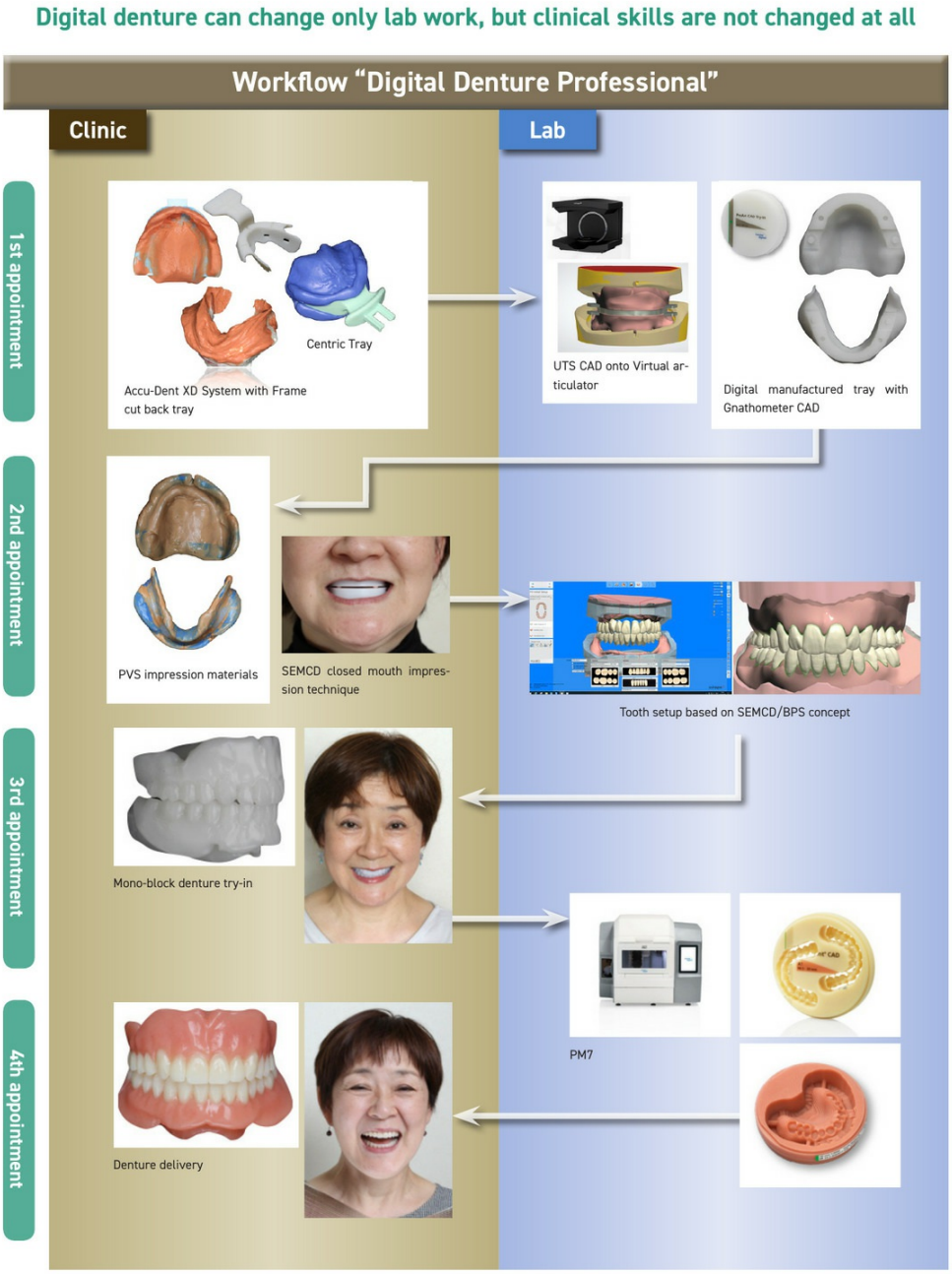


Fig 2-2 (Courtesy for digital pictures by Mr. Mattheus Boxhoorn).

Summary

The suction seal of the maxillary denture consists of two types of closure; interior/exterior double closure in the labiobuccal area and close-contact closure in the posterior palatal area (**Fig 4-4**). The former provides a strong seal, while the latter gives only a weak seal. Therefore, reinforcement of close-contact closure in the palatal posterior area holds the key to the achievement of suction in the maxilla.

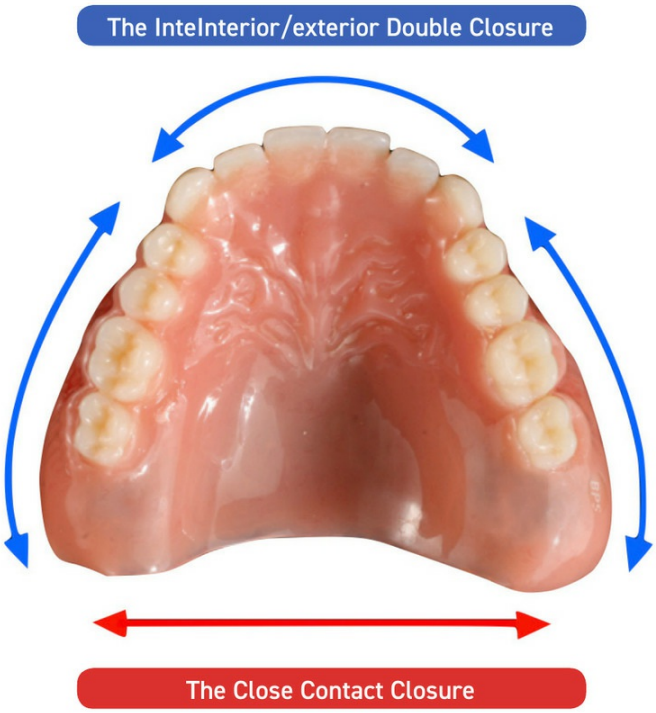


Fig 4-4 Blue→ Interior/exterior double closure in the labiobuccal area.
Red → Close contact closure in the posterior palatal area

A Seal in the sublingual fold region

1 When the region is rich in spongy tissue

This section describes the seal in the sublingual fold region (**Fig 4-9**). **Fig 4-10a** depicts a case with an abundance of spongy tissue posterior to the residual ridge. The soft spongy tissue can be stretched deep and wide during functional impression to obtain a good, thick imprint of the denture border area. This provides an extended area of contact between the denture base and mucosa; hence a strong and stable seal is created (**Fig 4-10b**).

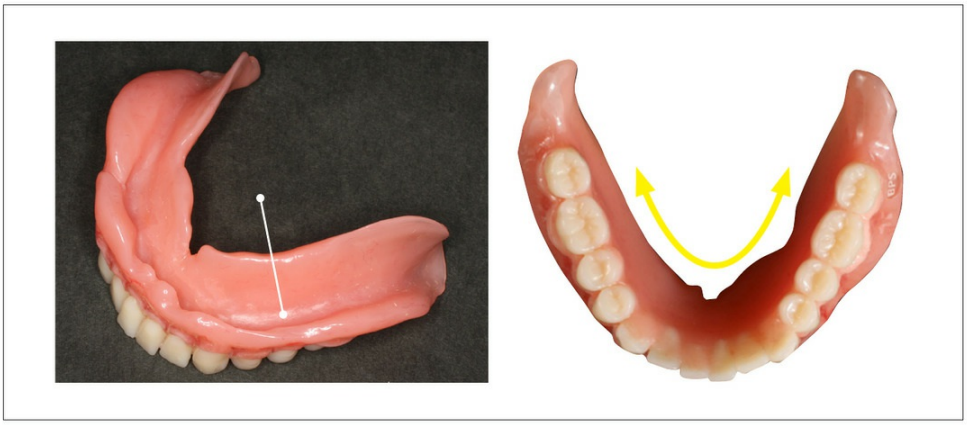


Fig 4-9a,b Seal in sublingual fold region.

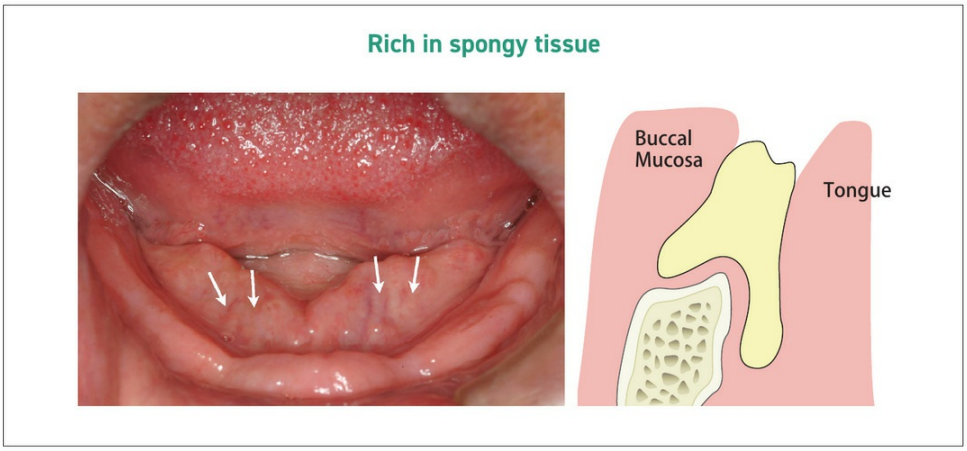


Fig 4-10a The sublingual fold region posterior to the alveolar ridge is rich in spongy tissue. A strong suction can be expected in this case.
Fig 4-10b A deep and thick border of denture base.

3 The oral environment of the sublingual fold region in the mouth and on the cast

Since the impression accurately represents the oral environment, it is essential to correlate intraoral observations with those found on the dental cast (**Fig 4-14**). A comparison of cases abundant in spongy tissue and those lacking in spongy tissue provides dental technicians with relevant information for their laboratory work. A deep and thick lingual fold, as it appears on the cast, gives an advantage in achieving good mandibular denture suction and seal. Conversely, a shallow lingual groove is indicative of an adverse condition for suction with a lack of spongy tissue in the sublingual fold region.

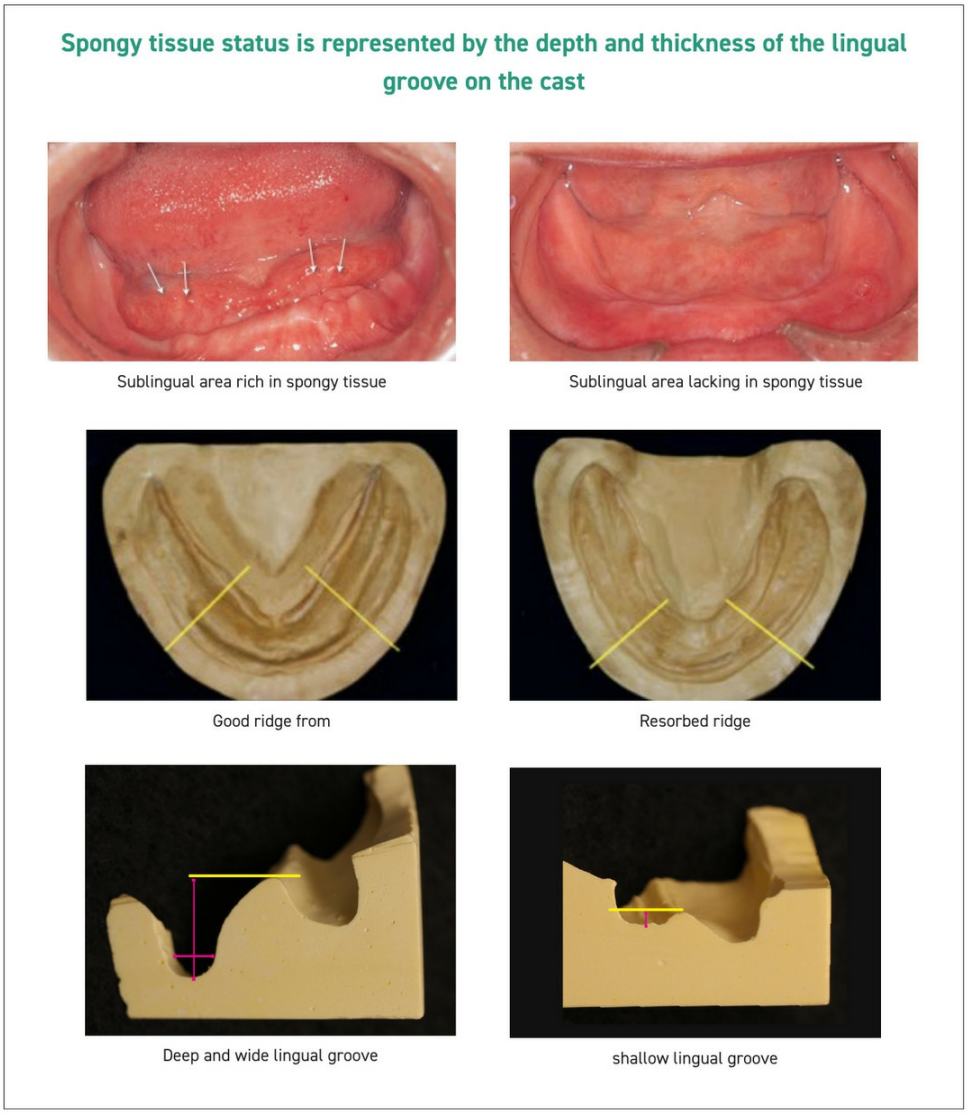
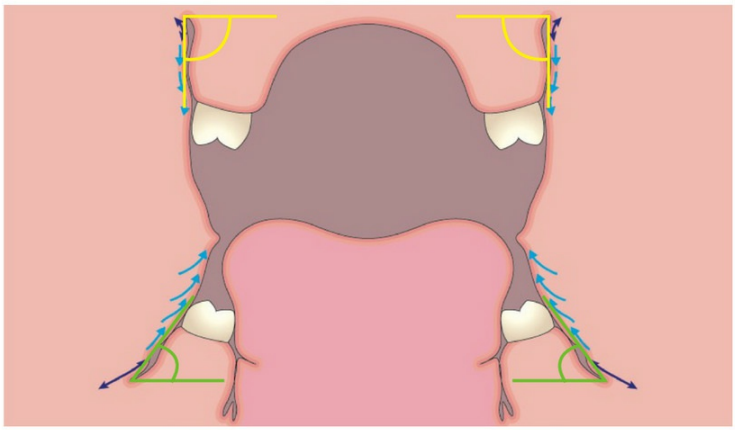


Fig 4-14 Spongy tissue status is represented by the depth and thickness of the lingual groove on the cast.

Fig 4-30 A large movable volume of the mandibular mucobuccal fold and the lingual inclination of alveolar ridge are conducive to formation of the BTC Point.



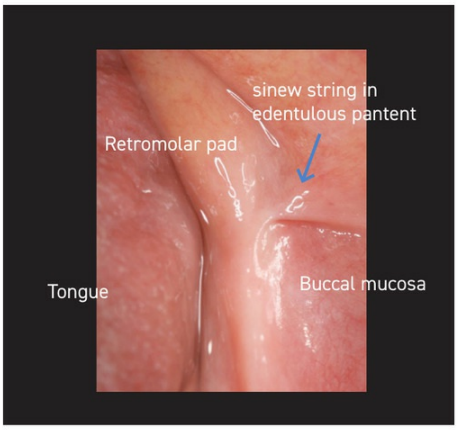


Fig 4-31a Someya's sinew string serves to pull the buccal mucosa inward.

Fig 4-31b In order not to interrupt the buccal mucosa to completely cover the retromolar pad region, slightly curvy, slightly deeper and even deeper notch of the weak, moderate, strong sinew string should be created respectively.

Fig 4-32 SEM image of Someya's sinew string rich in collagen (courtesy of Department of Anatomy, Tokyo Dental College).

Fig 4-33 At least 3 mm of space is required for the formation of the BTC Point above the denture base in the retromolar pad region.

3 Notice! not to break the seal

[1] When the denture base was overextended buccally with a utility wax:

The utility wax prevented the buccal mucosa from covering the retromolar pad. Thus, the BTC Point was not formed. This finding was confirmed with MRI (**Fig 4-37**).

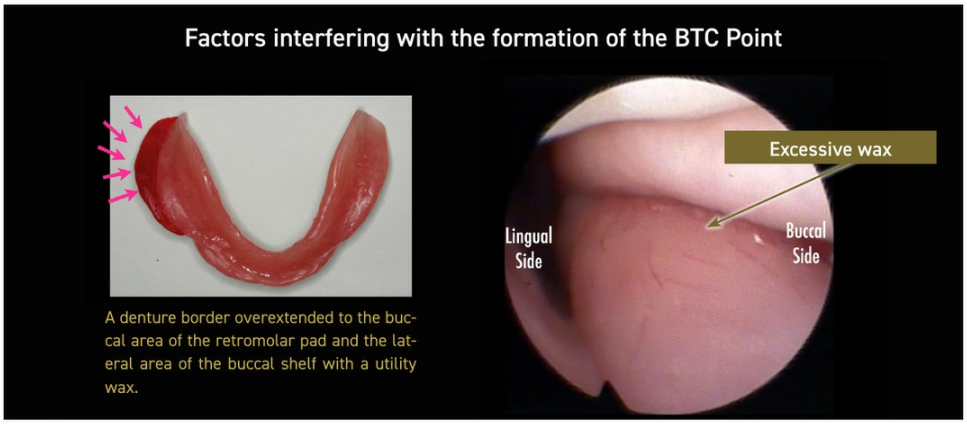


Fig 4-37a The moment of the buccal mucosa to cover the retromolar pad was distributed by the utility wax, preventing BTC point formation.

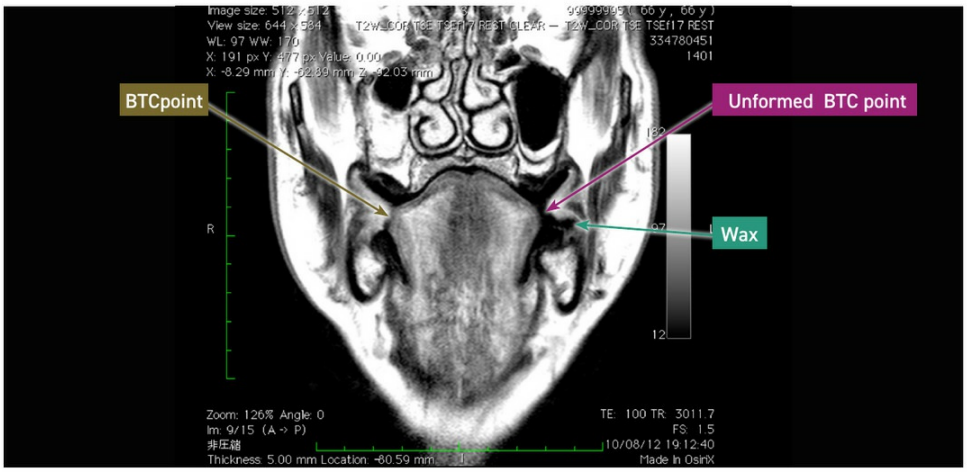


Fig 4-37b MRI also demonstrates that the utility wax prevents BTC Point formation on the overextended side.

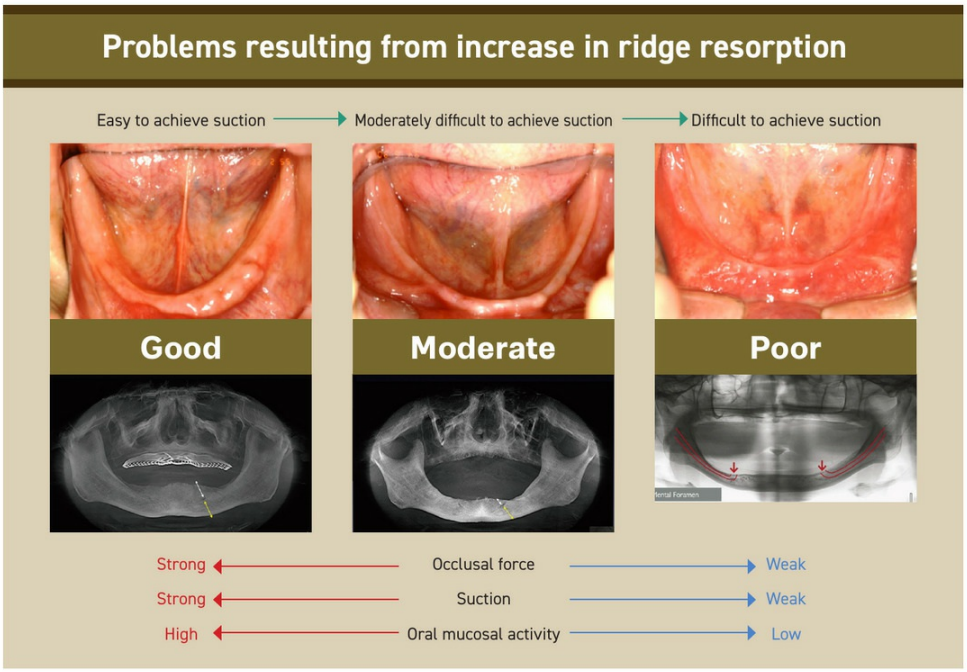

Problems resulting from increase in ridge resorption
Easy to achieve suction
Moderately difficult to achieve suction
Difficult to achieve suction
Good
Moderate
Poor
Strong
Occlusal force
Weak
Strong
Suction
Weak
High
Oral mucosal activity
Low

Fig 5-6


Decreased activity of oral mucosa in edentulous patient
(decreased lip movement or pursing)
An edentulous individual
with poor lip movement
A dentate individual
with good lip movement

Fig 5-7

Observation of the amount of changes in the shape of the retromolar pads from the mouth opening and closing movement

Mouth closed

Mouth opened

Fig 5-11a Only distal part of the retromolar pad is deformed during the mouth opening and closing movement. Small amount of changes in total is observed thanks to the presence of fibrous tissue at the medial part of the retromolar pad.

Fig 5-11b All regions are flabby tissue. The retromolar pad is fairly changed without the presence of fibrous tissue.

Fig 5-11c The string-like retromolar pad is severely changed.

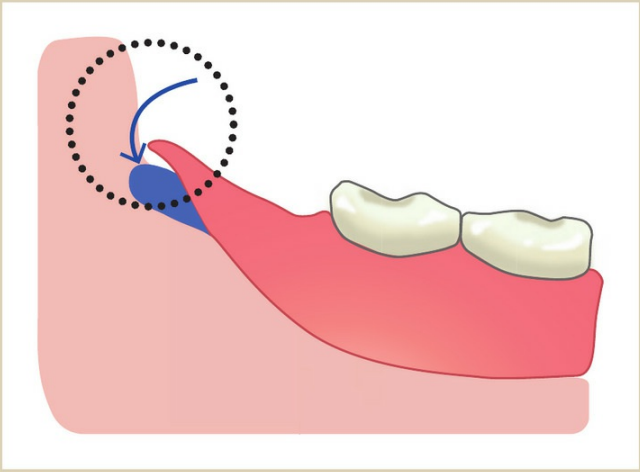


Fig 5-11d Large amount of changes in the shape of retromolar pad destroys the seal.

Fig 5-11

STEP 2 : Mixing the impression material and loading the tray

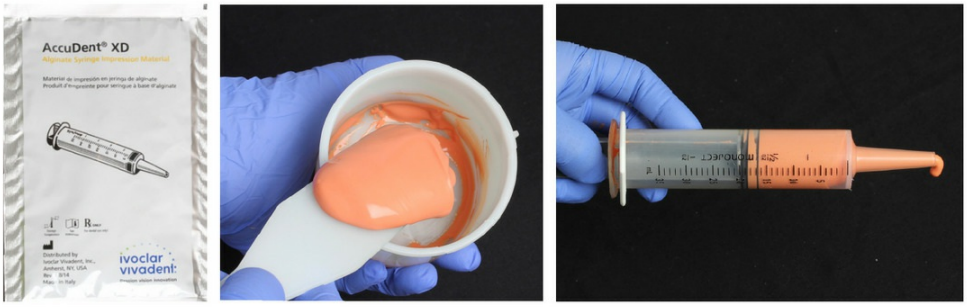


Fig 5-23 Mix the light-body alginate material Syringe Accu-Gel first, since it sets 30 seconds faster than Tray Accu-Gel.
Fig 5-24 Put the impression material in the Syrynge.

Fig 5-25 Tray alginate with Color Changing properties for precise timing of impression taking

Fig 5-26 Mix the heavy-body alginate material Tray Accu-Gel, place it over the selected tray, and shape it under running water.

STEP 2 : Tray try-in

Fig 5-36a~d The FCB Tray is inserted into the mouth. The patient is instructed to rest the tongue on the tray. He/she is then asked to close slowly, hold the tray handle with the lips, and stop closing and remain still in an unstrained position.

STEP 3 : Tray positioning

Fig 5-37a,b Mark the lip line on the handle to determine the tray position.

Fig 5-41 Inject the Syringe Accu XD-Gel starting from the retromylohyoid fossa to the sublingual fold and then back to the contralateral retromolar pad.

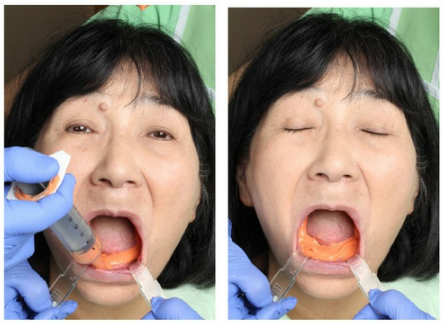


Fig 5-42a,b Next Inject the Syringe Accu XD-Gel by starting from the posterior mucobuccal fold and going forward.

Fig 5-43a,b Fit the anterior part of the FCB tray molded with Tray Accu XD gel onto the alveolar ridge in the same manner as during try-in. Put the tray flanges into the retromylohyoid fossae regions, and ask the patient to rest the tongue on the tray and push the tray lightly against the mandibular ridge. Unlike the conventional impressions, there is no need to apply strong pressure.

Fig 5-44a,b Change your finger position to the posterior frame and pull the upper lip up and ask the patient to close their mouth until static jaw position, Be sure not to over-closure.

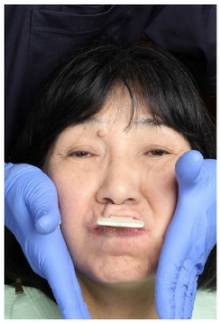


Fig 5-45 Push the cheek upward with the palms of the operator standing behind the patient. This maneuver prevents excess impression material s from building up in the cheek.

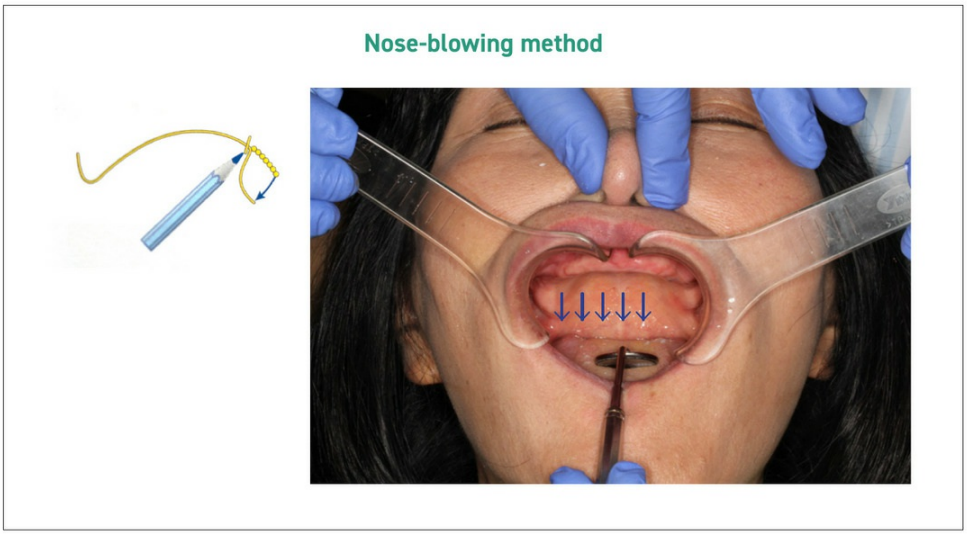


Fig 5-49 The patient is asked to blow air from the pinched nose.

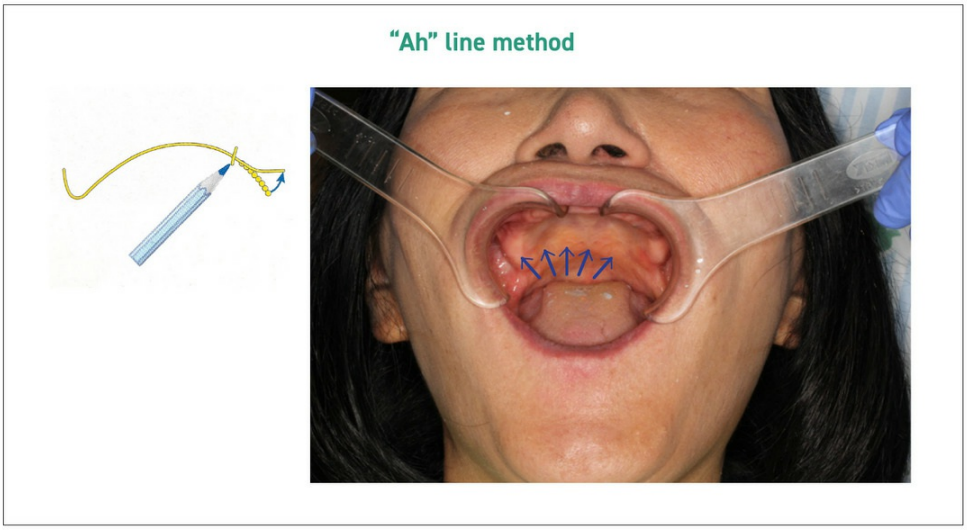


Fig 5-50 Determination of the outline for the posterior border of the denture base using the "ah" line. The soft palate lifts and vibrates when the patient says "ah".

6 The outline for the mandibular custom tray to achieve suction

The preliminary impression technique using the FCB Tray was developed to allow the impression of a natural, minimally deformed oral cavity. It must be kept in mind that the outline for the custom tray fabricated from the preliminary impression has a significant impact on the size and shape of the final impression. To achieve suction of the mandibular complete denture, the outline for the custom tray must be marked in line with suction mechanism. The final goal is to seal the entire denture borders with mobile oral mucosal tissues [8]. The outline proposed here is largely different from the outline for the conventional custom tray based on muscle attachments.

[1] The outline for the mandibular custom tray on the preliminary impression taken with FCB Tray

1) The outline for the custom tray in the retromolar pad region (Fig 5-52)

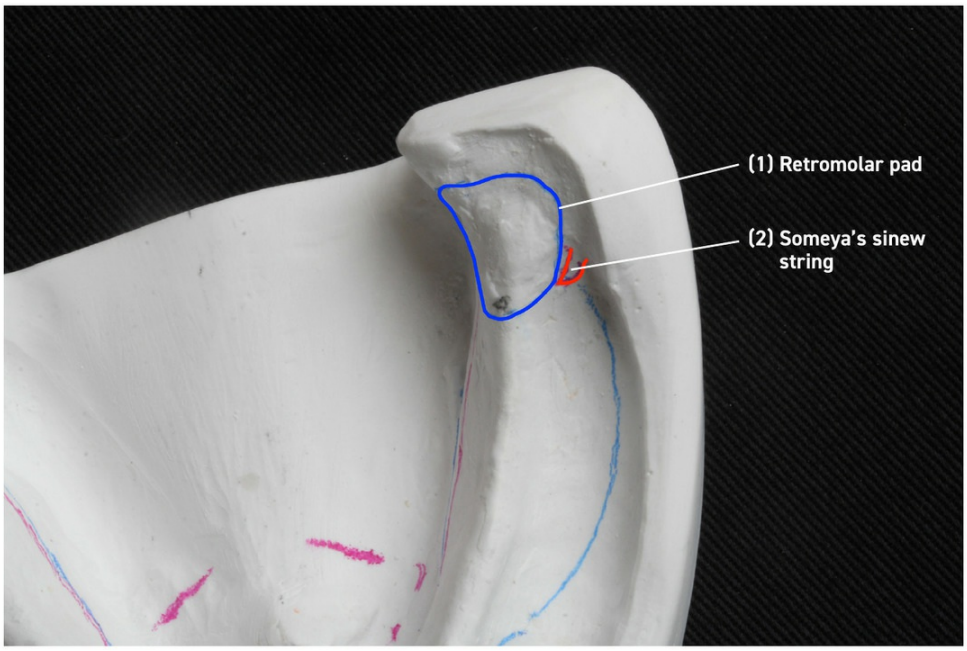
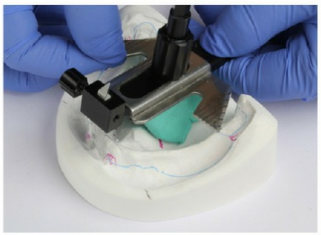
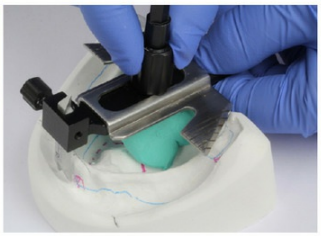
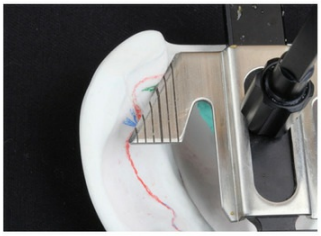


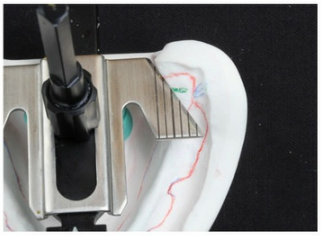
Fig 5-52 Indentation from existing denture.
(1) Follow the outline of the retromolar pad.
(2) Avoid Someya's sinew string at the root of the retromolar pad. The objective here is to facilitate formation of the BTC point above the denture base in the retromolar pad region.

Fig 5-89a,b Slide the horizontal wing and align it with the height of the distal 1/3 of the retromolar pad on each side.









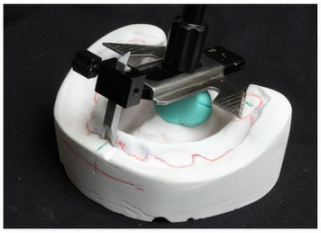
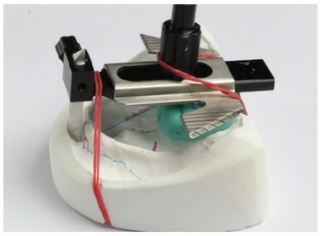
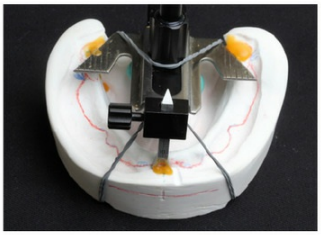


Fig 5-90a~c When the right and left retromolar pads differ in height, use the higher side to set the horizontal wing.





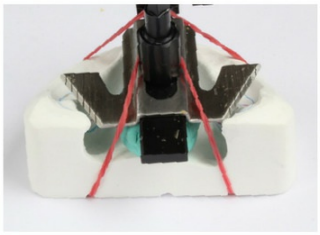


Fig 5-91a~c Use clay and a rubber band to fix the Horizontal Guide to the cast.

Fig 5-92a,b Mount the mandibular cast with plaster after placing the cast using the instrument carrier.

Fig 5-93 Mount the maxillary cast using the Centric Tray bite.

Fig 5-108 Align the mounting plate with the cuts made into the retromolar pads on the base plate and make the mounting plate parallel with the virtual occlusal plane established by the rubber band.

Fig 5-109 Fix the mounting plate with sticky wax.

Fig 5-110 Position the basic arch 7 to 9 mm anterior to the incisive papilla, and fix it to the base plate for the final impression with a fast curing resin.

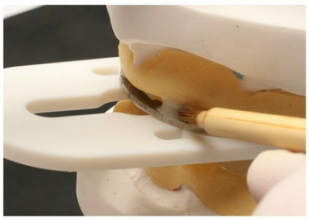


Fig 5-111 It is possible to place both the maxillary and mandibular basic arches onto the mounting plate simultaneously, but it is better to align them separately with the respective ridges.

Fig 5-112 Remove the mounting plate and attach the white bite rim mount to the maxillary basic arch.

Fig 5-113 Place the assembly of the bite rim mount and mandibular basic arch on the mandibular base plate.

Fig 5-114 Fit the maxillary and mandibular bite rim mounts, and fix them with sticky wax.

Fig 5-115 Fix the mandibular basic arch to the mandibular base plate with a fast curing resin.

Fig 5-116 The completed custom trays with the Gnathometer M incorporating the 6 ideas to facilitate mandibular denture suction.

Fig 5-117a~c The Gnathometer M basic arch and bite rim mount correctly positioned on the respective alveolar ridge.

Custom trays are manufactured through digital denture workflow (Figs 5-123~126)

1) Preliminary models or impressions are scanned.

1. Models are scanned and mounted using the bite record taken by a centric tray onto the virtual articulator.

Bite record taken by a centric tray

Maxillary model

Mandibular model

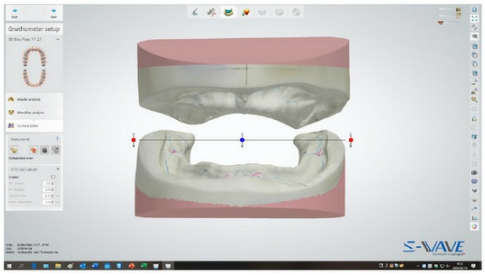
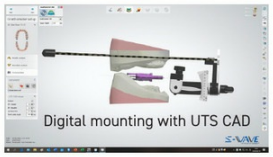


Fig 5-123

2) Maxillary and mandibular individual trays are designed

2. Occlusal plane is determined based on the anatomical landmarks using the reference points at the distal one-third of the retromolar pads and bisected anterior inter maximally distance.The UTS CAD is very critical and crucial to optionally assist dentists in measuring the angle of the occlusal plane in relation to Camper's plane (CP) and the bipupillary line (BP).

UTS CAD (optional)



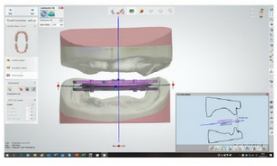


Fig 5-124

Pin-tracing with Gnathometer M or CAD

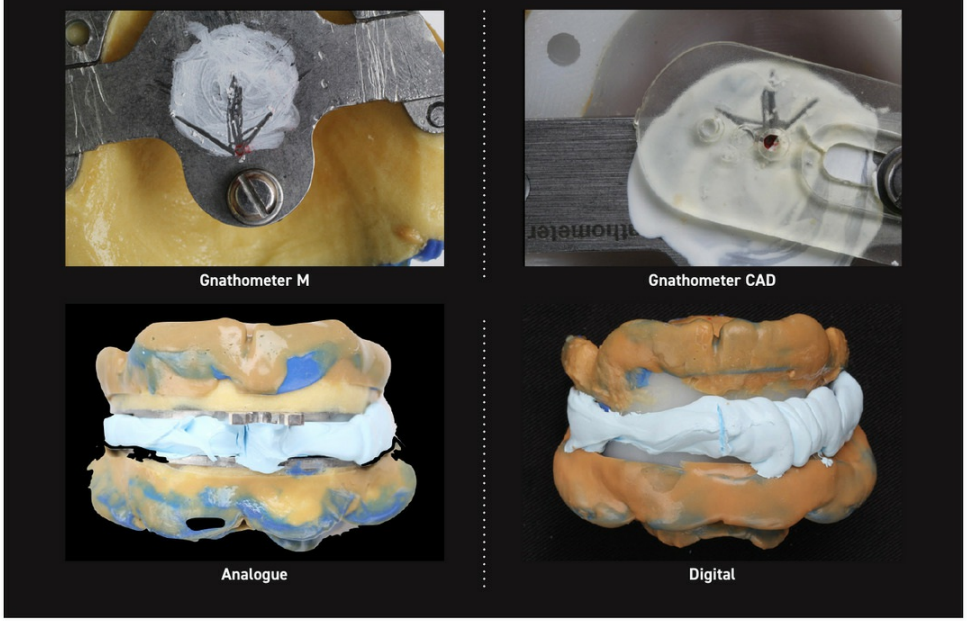
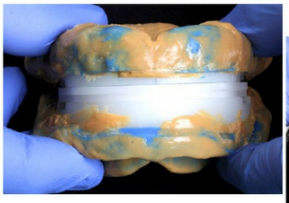


Fig 6-53

Gnathometer CAD



Before Gothic arch tracing with the Gnathometer CAD, OVD is reconfirmed by using phonation and freeway space measurement.

The screw of the Gnathometer CAD is turned with the screw driver and the hight is secured with the sticky wax.

Fig 6-54

9 Boxing and Articulation (Analog)

[1] Boxing the final impressions (5mm below the borders) and making the casts

The 5mm peripheral border area of the final impression (**Figs 6-57~59**) contains crucial information for achieving suction retention, such as the form and thickness of the denture base. The information must be preserved in the final cast and reproduced with a denture base resin (**Fig 6-60**). Another tip is to use a high-quality mounting stone, such as Elite Arti by Zhermack, with a setting expansion rate of 0.02% after 2 hours. This reduced expansion will minimize the opening of the incisal pin. This section will illustrate the method of boxing aimed at preserving the borders of the impression and replicating them accurately with a denture base resin.

Laboratory procedure for construction of the final casts (Figs 6-57~62)

Boxing

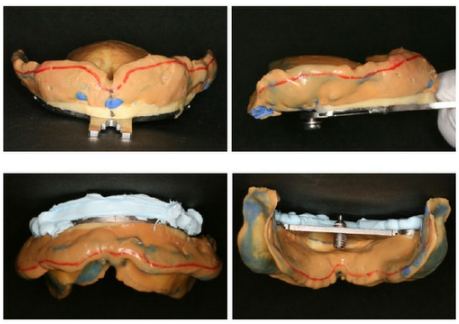


Fig 6-57a~d Draw a block-out line approx. 5 mm from the border of the final impression with an indelible pen.

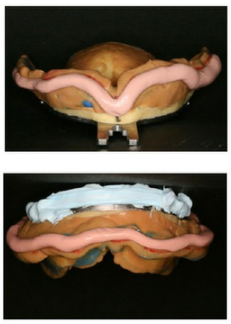


Fig 6-58a,b Block out the borders with a boxing wax.

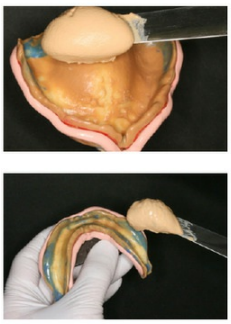


Fig 6-59a,b Pour the impression with plaster having an expansion coefficient that compensates for polymerization shrinkage of the denture base resin. Place the impression face down and wait for the plaster to set.

Mounting the final casts

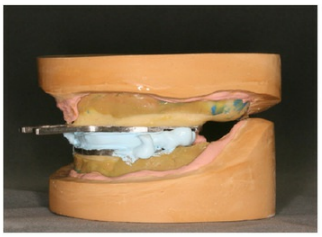


Fig 5-60 Make sure that the Gnathometer M registration fits the maxillary and mandibular casts.

Fig 5-61 The maxillary cast was mounted on the Stratos 300, using UTS. Prepare a split cast for post-polymerization remount or the mandibular cast is mounted on the Stratos 100,200,300 using the horizontal guide.

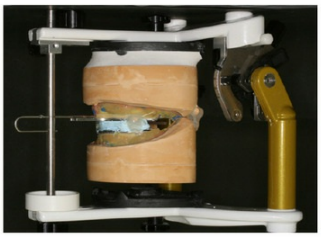


Fig 5-62 Mount the casts on the articulator using the low-expansion mounting stone Elite Arti (Zhermack, feed) with a small setting expansion of 0.02% at 2 hours.

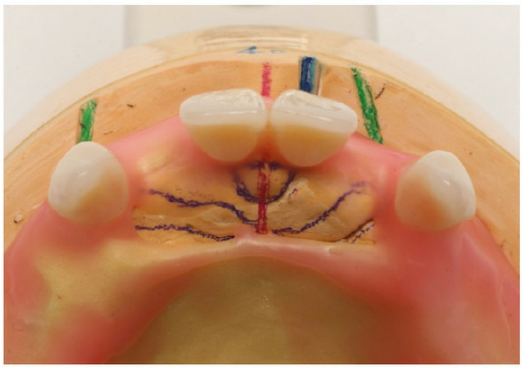


Fig 6-80 When setting the maxillary canines, their cervical areas are positioned in line with the first large pair of transverse palatine rugae. When the rugae are asymmetrical, the one on the less-resorbed side is used as reference. The distal labial surface of the canine is directed towards the posterior ridge. In patients with severe ridge resorption, the canines should be positioned 1 to 2 mm more buccally. When the rugae are hardly discernible, the set-up sequence may be altered to set the central incisors first, followed by the lateral incisors, and finally the canines.folds. The incisal edges are thus placed at 22 mm.

Fig 6-81a,b Place a 2D template on the lower member of the Stratos articulator with the curved surface facing up.

Fig 6-82 Check the horizontal alignment and symmetry of the maxillary anterior teeth using the 2D template.

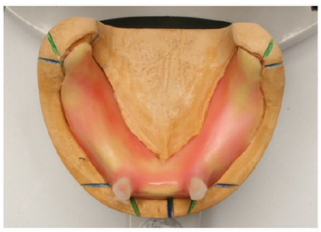


Fig 6-83 Set the mandibular canines at the intersection of the reference line for the anterior ridge and that for posterior tooth set-up. Adjust the position of the canine so that its labial prominence is in line with the anterior arch mesially and with the posterior arch distally.

Fig 6-84 In the BPS denture fabrication system, the canines are set first in the mandibular arch. The cusp tip of the mandibular canine is positioned near the interproximal contact between the maxillary canine and lateral incisor on each side. This creates a smooth transition from the anterior arch to the posterior arch to facilitate the setting of the maxillary and mandibular posterior teeth and establishment of occlusal relationship.

The form of the borders of the suction-effective maxillary and mandibular digital dentures

Fig 8-10

Characteristics of the suction-effective mandibular complete digital denture

Retromolar pad is adequately covered.

Someya's sinew string is avoided.

Denture teeth are arranged in the middle of the alveolar ridge to allow close approximation of the cheeks and tongue to the polished surfaces.

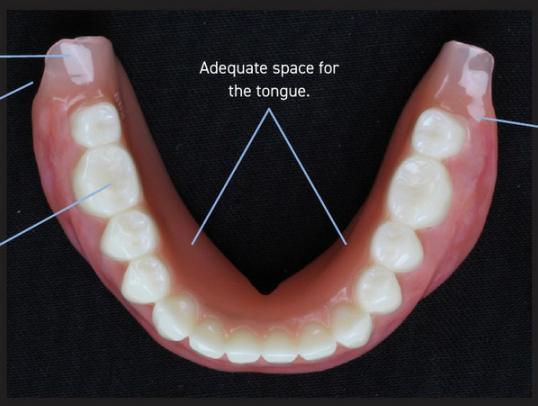


Fig 8-11

The denture border in the retromylohyoid fossa region is thin and extended down approx. 3 mm to complete the compensatory closure.

Passamonti's notch is provided(Deflection point of "S "curve).

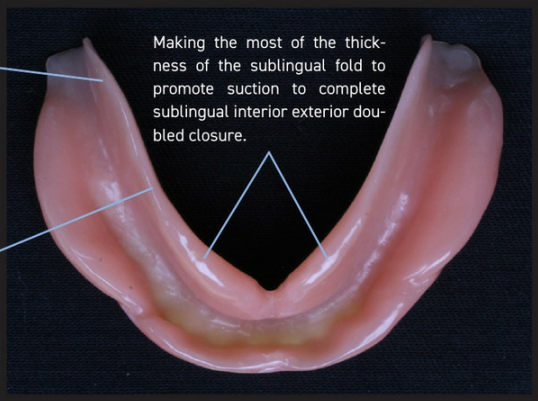


Fig 8-12

The mandibular labial polished surface is made concave from lateral incisor to lateral incisor for lip support.

Fig 8-13 Morphological characteristics of the mandibular denture fabricated based on a good understanding of the concept of denture suction.

What is the reward of digital suction-effective mandibular complete denture manufacturing?

That is total patient satisfaction. That goose bump feel when you hear that popping sound in three stages, precision impression, digital denture try-in, and final digital denture delivery. We don't have to give the "lower denture speech"... the one designed to lower their expectations.

Precision impression

Fig 8-14 Do-able impression technique for everyone.

Fig 8-15 SEMCD not depending upon years of clinical experience.

Digital Denture try-in

Fig 8-16

Fig 8-17 Confirmation with suction action of the final lower denture.

Fig 8-18

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Biography of Dr. Jiro Abe

- Dr. Jiro Abe graduated from Tokyo Dental College in1981. He developed the suction mechanism of mandibular complete dentures in 1999 and published, "Successful Mandibular Complete Denture Suction for everyone". He has been diffusing it throughout the world since 2004.
- He was the director of the Academy of Clinical Dentistry from 1999 to 2005 and its councilor from 2005 to 2009.
- He founded the Japan Denture Association and has been its chairman from 2006 to 2015.
- He has stayed active as a former president of the Japan Plate Denture Association since 2015.
- He is the instructor of Ivoclar Vivadent BPS International Clinical and GC & MORITA Complete Denture seminars, the lecturer of the Japan Dental Association.
- He has been in various activities as a professor at the Tohoku University Graduate school of Dentistry since 2010 and at Kanagawa Dental College since 2012.
- Dr. Abe has also held many distinguished positions throughout the years and published Quintessence book. "4 Steps from Start to Finish Mandibular Suction Denture and BPS: a Perfect Manual-for All Types of Fully Edentulous Cases" in 2012 and "Mandibular Suction Effective Denture,The professional: Clinical and laboratory technique Class Ⅰ, Ⅱ, Ⅲ - with Aesthetics" in 2018, they were translated into English, Chinese and Korean.
- He has played active as an international committee member of the American Prosthodontic Society since 2015.

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