

# 德國國立杜易斯堡-埃森大學

Master Degree in Specialized Orthodontics

## 黃金陣容師資團隊



Scientific Director  
德國國立杜易斯堡-埃森大學 IMC 口腔醫學院院長

Univ. Prof. Dr. Dr. Dr. h. c. mult. Ulrich Jaos, FRCS, FDSRCS

德國國立杜易斯堡-埃森大學 IMC 口腔醫學院院長  
德國明斯特大學口腔顎面外科醫院及門診部榮譽教授  
英國皇家外科學會榮譽院士 (FRCS, FDSRCS)  
德國外科基金會 OCS 創辦人  
德國杜易斯堡 MVZ 醫療中心創辦人  
歐洲顎面外科協會 EACMFPS 主席

1972年至1979年為其學術養成重要階段，先後完成牙醫、醫學學士，隨後於德國為口腔顎面外科醫師。1980年於德累斯登大學任教期間 (D3-Professor)，取得德國特許任教資格，後擔任歐洲及歐盟各國口腔顎面外科相關學會的領導者，獲頒顎面外科協會榮譽會員及匈牙利學術榮譽博士 (1980-1984)，法國口腔顎面外科協會副主席 (1985)，1989至2002年再度擔任歐洲顎面外科協會主席，德國杜易斯堡-埃森大學 IMC 口腔醫學碩士學位委員會主席 (2003)，同年獲頒西班牙口腔顎面外科協會榮譽會員，海德拉巴德 (印度) 協會國際醫務委員會榮譽會員 (2005)，匈牙利德布勒森大學醫學博士及教授 (2012)，英國皇家外科學會榮譽院士 (2016)，30年職涯內培育超過300名口腔顎面外科醫師。



Dr. med. dent.  
Thomas Zieburg

- 德國明斯特大學教學醫院齒顎矯正醫師
- 德國明斯特會務院正私人診所院長



Prof. Dr. med. dent.  
Thomas Stamm

- 德國杜易斯堡 MVZ 醫療中心齒顎矯正科主任
- 德國明斯特大學教授
- 德國齒醫學會正牙科醫師



Prof. Dr. med. dent.  
Jörg Lisson

- IMC 齒顎矯正學科碩士學位課程主任
- 德國萊茵威斯特法倫大學齒顎矯正系主任
- 德國牙科委員會主席
- 德國口腔顎面外科大學教授協會主席
- 德國齒醫學會理事



Univ. Pro. Dr.  
Ulrike Ehmer

- 德國明斯特大學齒顎矯正系主任
- 德國齒醫學會及德國齒醫學會理事



Prof. Dr. med. Dr. med. dent.  
Alexander Hemprich

- 德國萊比錫大學醫院牙科診所院長
- 德國口腔顎面外科學會主席



Prof. Dr. med. Dr. med. dent.  
József Piffikó

- 德國萊比錫大學醫院牙科診所主任
- 匈牙利口腔顎面外科學會主席
- 匈牙利萊比錫大學醫院牙科主任暨口腔顎面外科主任



Dr.  
Karl-Ludwig Mischke

- 德國明斯特大學教學醫院齒顎矯正醫師



PD Dr. med. Dr. med. dent.  
Thomas Filles

- 德國萊比錫大學海軍醫院口腔顎面外科主任
- 德國萊比錫大學海軍醫院齒顎矯正中心主任



Univ.-Prof. Dr. med. dent.  
Ariane Hohoff

- 德國明斯特大學教學醫院齒顎矯正部主任
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Dr. med. dent.  
Werner Schupp

- 德國口腔顎面外科學會理事
- 德國齒醫學會正牙科醫師
- 奧地利法蘭克大學教授

## 全球獨家歐盟臨時行醫權

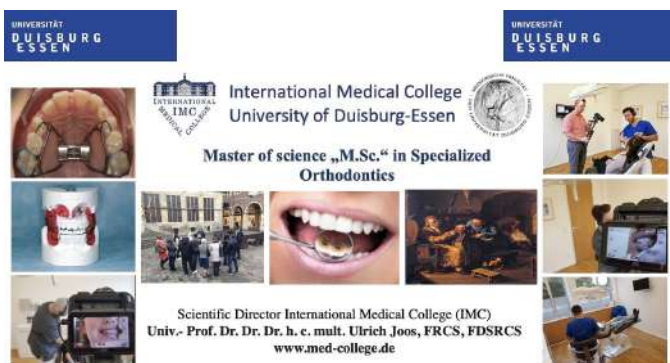
歐洲唯一提供國際醫師

在當地進行實作的臨床碩士學位

課程重視臨床運用及實作技巧學程期間學員須親赴歐洲于指導教授監督下，親自執行臨床診療，學習最先進的臨床技術，應用於自身牙科診療工作。



## 線上遠距教學 + 德國實習 · 工作學業兼顧



- 1 線上互動式教學  
即時發問立即回饋
- 2 完整案例分析及最新技術分享  
即時應用於每日臨床工作
- 3 兩年碩士課程包含德國實習兩次  
實際參與現場課程與執行診療

# Beethoven International Orthodontic Specialty Course

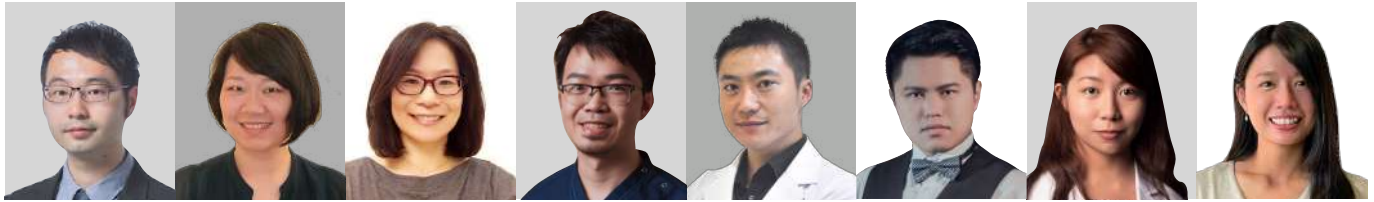
德國國立杜易斯堡-埃森大學  
IMC 齒顎矯正專科碩士學位先修課程

UNIVERSITÄT  
DUISBURG  
ESSEN



**Dr. Chris Chang**

DDS, PhD. ABO certified, Angle Midwest  
Beethoven Orthodontic Center, Taiwan



**Dr. Bill Su**

VISTA surgical  
techniques

**Dr. Yulin Hsu**

Early orthodontic  
treatment

**Dr. Shu Ping Tseng**

Early orthodontic  
treatment

**Dr. Joshua Lin**

Treatment for  
impacted teeth

**Dr. Eric Hsu**

Research design

**Dr. Bear Chen**

ABO DI & CRE

**Dr. Lexie Lin**

ABO case report

**Annie Chen**

Academic writing

Beethoven International Orthodontic Specialty Course, 是德國國立杜易斯堡-埃森大學 IMC 齒顎矯正專科碩士學位所特別增設的先修課程, 由國際知名講師張慧男醫師親自規劃及授課, 課程特色強調由臨床病例帶動診斷、分析、治療計劃擬定與執行技巧, 亦加入最新的數位矯正與隱形牙套的內容, 並邀請了貝多芬牙科集團各院院長演講特別矯正專題。

除包含原貝多芬矯正大師班的課程內容外, 另外加入了骨釘與 VISTA 術式的操作課程, 並新增了學術文章寫作與演講的訓練, 讓醫師在進入德國碩士班之前, 做好更充分的準備。

想要取得歐洲正式矯正碩士學位資格又苦惱時間不足的醫師, 本先修課程是追求您目標的最佳途徑!



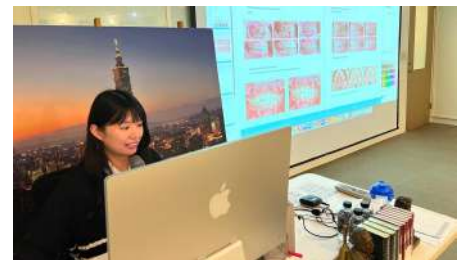
## 課程修畢即取得德國碩士班入學資格

全球目前只有三個機構擁有此先修課程資格, 想要取得歐洲齒顎矯正碩士的台灣醫師, 此課程為最有效率的選擇。



## 全新規劃的術式實作

本課程全新規劃的術式實作特別採用了由國際知名的西班牙臨床大師 Dr. Fernando Rojas-Vizcaya 所設計含阻生牙的新式牙齒模型, 與歐洲課程接軌, 臨床操作更易上手。



## 學術文章寫作訓練

本課程除了課堂演講與模型操作課程外, 亦加入了學術文章寫作訓練。醫師可以學習如何有技巧並且有效率的撰寫學術文章, 讓之後的碩士論文與文章發表更游刃有餘。



☎ 03-5735676#217 Chester Yu

✉ yuebucy@newtonsa.com.tw

# Beethoven Damon Master Program



# 66hrs

## Course Schedule

### Module 1

1. Selecting your ideal first case
2. Bonding position
3. Bonding + BT + Ceph tracing
4. TADs + space closing + hook + spring
5. Finishing bending & fixed retainer

Practice: Clinical photography

### Module 2

1. Four stages of efficient orthodontic treatment
2. Simple and effective anchorage system
3. Extraction vs. Non-extraction analysis

Practice: Patient photo management

### Module 3

1. Soft & hard tissue diagnostic analysis
2. Big overjet correction
3. Damon diagnosis & fine-tuning

Practice: Ceph tracing

### Module 4

1. Excellent finishing
2. Retention & relapse

Practice: Ceph superimposition & measurement

### Module 5

1. Simplify your system
2. Extraction vs. non-extraction

Practice: Case report demo

### Module 6

1. Class III correction
2. Class II correction

Topic: Early orthodontic treatment

Computer training (Mac): 1:30-2:30 pm

時間：週四全天 (9 am - 5 pm)

地點：金牛頓藝術科技 (新竹市建中一路 25 號 2 樓)

### Module 7

1. Upper impaction
2. Lower impaction
3. Gummy smile correction

Topic: Modified VISTA

### Module 8

1. ABO DI, CRE workshop
2. Open bite

Topic: Modified 2X4 appliance in ortho treatment

### Module 9

1. Implant-ortho combined treatment
2. Asymmetry

Topic: Impacted cuspid treatment

### Module 10

1. Minor surgeries in orthodontics
2. Digital orthodontics

Topic: Ortho-viewed interdisciplinary treatment

### Module 11

1. Aligner & TADs
2. Keys to aligner learning

Topic: Pre-aligner treatment

Special Lecture: 1:30-2:30 pm

費用含課程視訊\*、iPad、課程電子書與材料。

\*贈送之課程視訊提供兩年時間串流觀看。



透過數位影片反覆觀看，結合矯正與電腦教學，課堂助教協助操作，以及診間臨床見習，讓學員在短時間內快速上手，感染「熱愛矯正學，熱愛學矯正」的熱情。

# Beethoven Clinical Education

此訓練課程除了新增學術文章寫作與演講的訓練，也加入了骨釘與VISTA術式等操作課程，醫師不僅可以就近學習張慧男醫師的技術與經驗，亦同時培養醫師期刊寫作的能力與高效簡報的技巧。



## 34hrs

### ABO Writing Training

#### Medical Writing Training

Medical writing skills are crucial for clinicians, educators and researchers. This training contains academic medical writing on case reports. Participants will have a chance to publish articles for journals like Journal of Digital Orthodontics (JDO).

#### Presentation Workshop

The presentation workshop designed to help participants utilize the most frequently used presentation tools in Keynote to manage patient clinical records and create simple but effective patient communication presentation.

### VISTA & 4 other Minor Surgeries for Orthodontic Practice

#### VISTA Hands-on Workshop

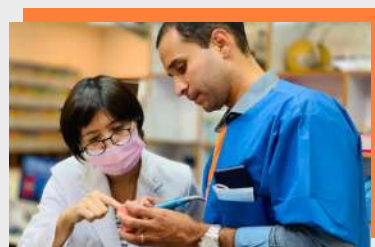
The VISTA (vertical incision subperiosteal tunnel access) surgical techniques for impacted cuspids will discuss the following topics:

1. VISTA with screw placement
2. VISTA with connective tissue graft
3. Suture technique

#### TADs & Surgeries Hands-on Workshop

The workshop covers bonding on a tyodont, TAD placement, and 4 minor surgeries for orthodontic practice.

\*全系列課程修畢，完成兩篇案例報告文章後，即可取得赴德國碩士班進修資格證書。



# Efficient Procedure for Precise Bonding of Aligner Attachments

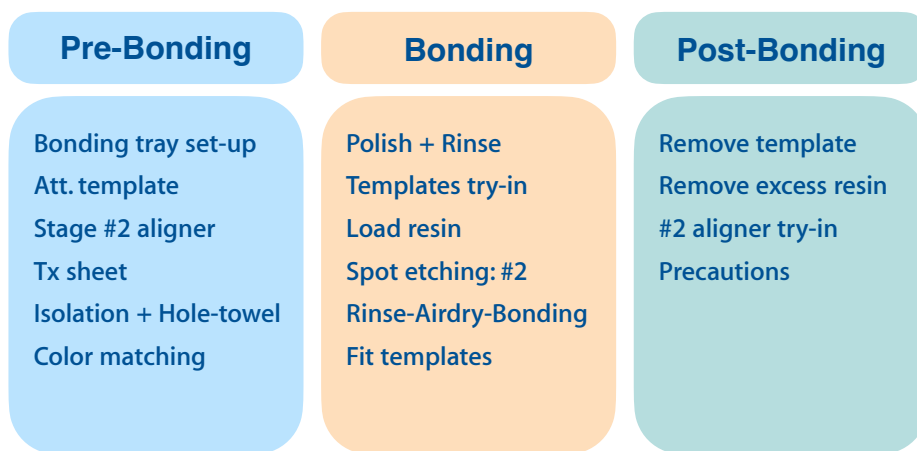
## Abstract

Computer-generated attachments, as specified in the ClinCheck® simulation, must be precisely duplicated chair-side on the patient's dentition. This article describes the use of flexible attachment templates for each quadrant. Windows (reliefs) for each specified attachment are filled with composite resin that is bonded on the surface of the teeth. Standard operative procedure, quality control checks, and patient training are reviewed. This article provides step-by-step descriptions and illustrations for efficiently and precisely initiating aligner therapy. This protocol is standard operating procedure at the Beethoven Orthodontic Center. (*J Digital Orthod* 2023;70:52-61. Reprinted from *J Digital Orthod* 2020;59:64-73)

## Introduction

Attachments are a critical part of clear aligner systems, which are designed to deliver precise and effective control of tooth movement. For most malocclusions, the attachment bonding procedure is the first step in preparing the arches for aligner

treatment.<sup>1,2</sup> Precision bonding of the planned attachments is essential for delivering the mechanics required to achieve the planned outcome (Fig. 1). The first three “aligners” in the series are actually 3D overlays of the digitized dentition that are specific-purpose appliances. The most critical steps in the procedure are well noted



**Fig. 1:** There are 3 phases (left to right) for the aligner attachment process. Multiple procedures in sequence are required for each phase. See text for details.

**Joshua S. Lin,**

*Lecturer, Beethoven Orthodontic Course (Left)*

**Chris H. Chang,**

*Founder, Beethoven Orthodontic Center*

*Publisher, Journal of Digital Orthodontics (Center)*

**W. Eugene Roberts,**

*Editor-in-Chief, Journal of Digital Orthodontics (Right)*

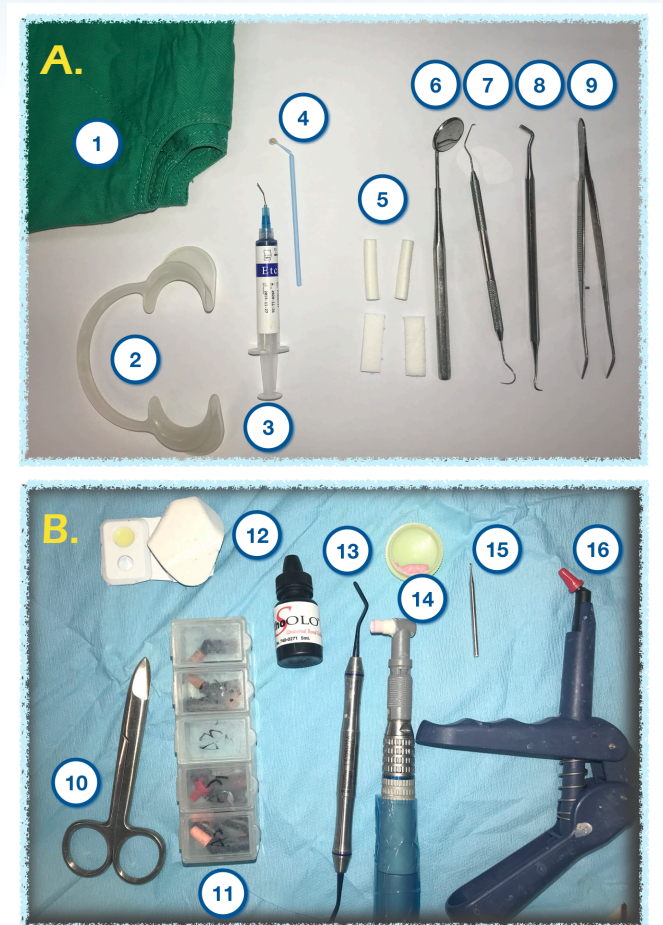


(Latin: *nota bene*) for the reader and marked with a NB in bold italics (***NB***).

## Introduction to Aligners

The first overlays (Aligner set #1) are prepared on the existing dentition. They are designed to engage undercuts to achieve retention, and to accustom the patient to activation. Acclimation of the patient for fitting and removing clear aligners is the first objective of treatment. Aligner set #1 is worn all the time except when eating. Objectives are to: 1) fit each device on the entire arch; 2) seat the retention points into the undercuts; 3) continuously retain both appliances on the dentition; and 4) easily remove them when desired. Patients and their parents (if minors) are instructed to clean aligners regularly, protect them in the carrier during meals, and keep them stored any time they are not in the mouth. In addition, patients are advised that the first aligners are to prepare them for the very important second stage when the attachments are bonded on the dentition. Most are excited and eagerly await the next visit when the attachments are installed.

The second overlay is a template with voids (negative relief areas) on the surfaces of teeth that correspond to the site and shape of each attachment. After the treatment plan is completed and the required attachments are digitally fitted on



■ **Fig. 2:**

A. Doctor's chair-side desktop:

- |                             |              |
|-----------------------------|--------------|
| (1) Hole-towel              | (6) Mirror   |
| (2) Retractor               | (7) Probe    |
| (3) Etching gel             | (8) Scaler   |
| (4) Small cotton wool stick | (9) Tweezers |
| (5) Cotton rolls            |              |

B. Assistant's worktable:

- (10) Scissors
- (11) Differently shaded resin capsules (Tetric N-Ceram®)
- (12) Container for the bonding agent (primer):  
OptiBond® Solo Plus™
- (13) Composite resin instrument
- (14) Rubber cup and pumice paste
- (15) Low-speed round bur (1 mm diameter)
- (16) Resin feed gun with resin capsule

the dentition, templates are constructed as overlay appliances for the precise installation of attachments. The third overlay set (Aligners #2) are appliances designed to fully engage all the attachments and apply about 0.25 mm of activation to begin aligning displaced teeth.

## Attachment Installation

Efficiently bonding attachments is an important step in the treatment process. Precise and efficient bonding of the attachments is a high priority. Beethoven Orthodontic Center developed a standard protocol for achieving attachment goals.<sup>3,4</sup> The purpose of this report is to provide a step-by-step instruction for efficiently bonding attachments on all teeth as needed in about 12-15 minutes. Clinical experience has perfected this important process for beginning aligner treatment.

### Pre-Bonding Phase

Once patients have accomplished the acclimation objectives with the first set of aligners, bonding of attachments is the next procedure.

#### 1. Bonding Tray Set-Up

- **Doctor's Chair-side Desktop:** Hole-towel, retractor, etching gel, bonding agent, cotton rolls, mirror, probe, scaler, and tweezers (Fig. 2A)
- **Assistant's Work Area:** Scissors, shaded resin capsules (Tetric N-Ceram®, Invoclar Vivadent AG, Füstentum, Liechtenstein), bonding agent (OptiBond® Solo Plus™, Kerr Corp., Brea CA), composite resin instruments, rubber cup, pumice

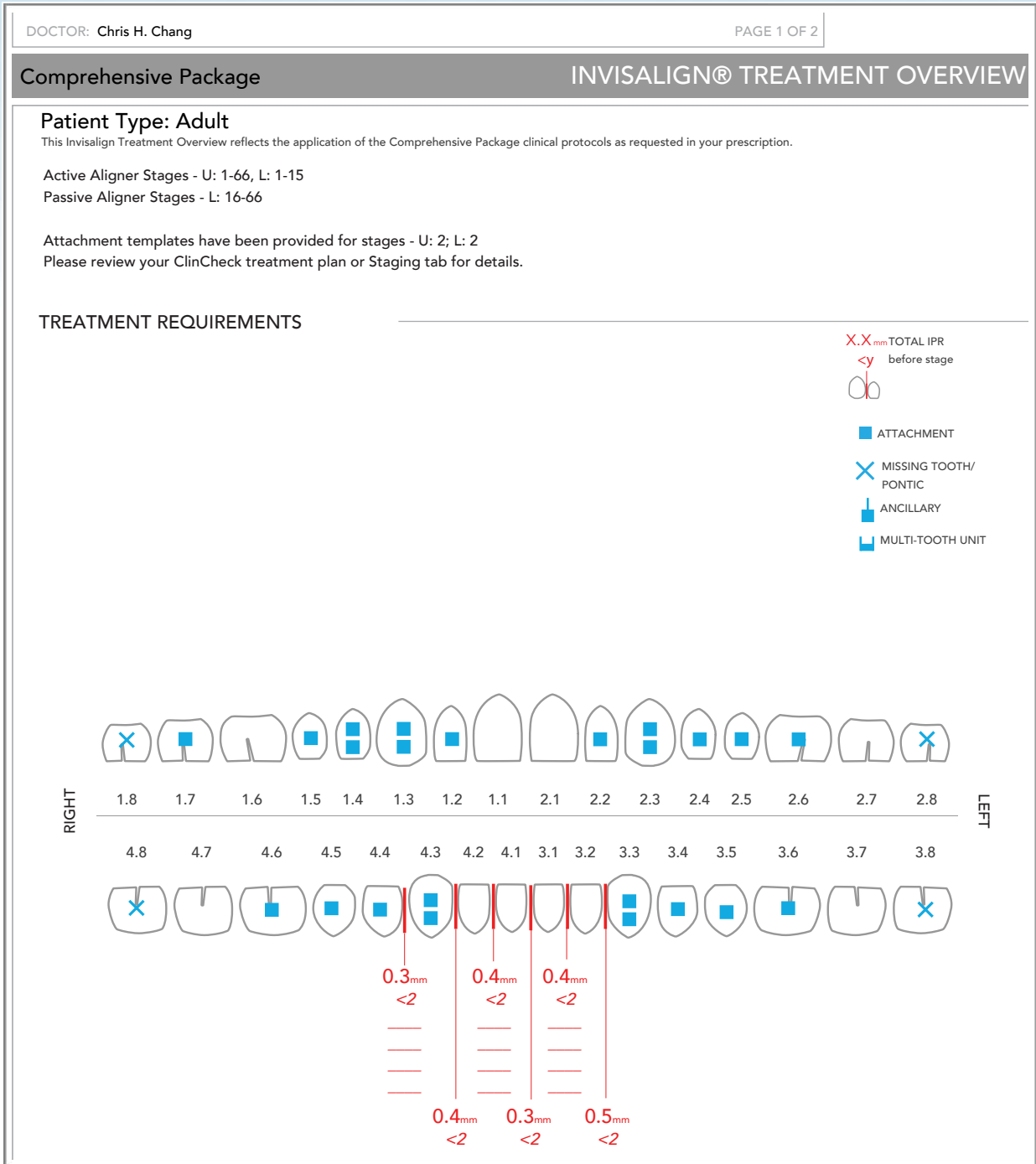


■ **Fig. 3:**  
Marking the outer surface of each attachment window with a black marker pen.

paste, low-speed round bur, and resin feed gun with resin capsule (Fig. 2B)

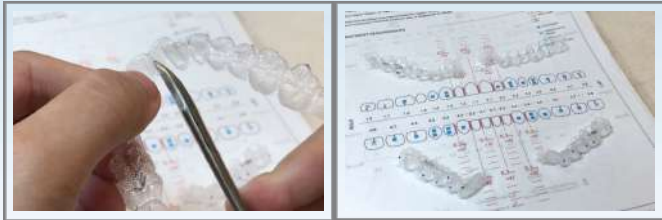
#### 2. Marking Templates and Stage 2 Aligners

Referring to the Invisalign® Treatment Overview sheet,<sup>5,6</sup> assistants confirm the location and specifications for each attachment, and mark the outer surfaces of the template with an indelible pen to correspond to each attachment (Figs. 3 and 4). Then each attachment template is cut in half, between the central incisors, resulting in four templates: upper right (UR), upper left (UL), lower right (LR), and lower left (LL) (Fig. 5). After this segmentation procedure, an assistant again compares the attachments for each quadrant template to the treatment overview (Fig. 4). Attachment locations are similarly marked on the post-bonding set of aligner trays (Aligners #2) to confirm the type and size of each attachment prior to the bonding procedure. The doctor then tries in the post-bonding set of aligner trays (#2) in patient's mouth to check attachment positions relative to the treatment plan (Fig. 4). In effect, there are three checks of aligner positions and specifications according to the treatment overview: two by the assistant(s) and one by the doctor (Figs.



**Fig. 4: Invisalign® Treatment Overview -**  
 The document is downloaded from the Invisalign ClinCheck®. It summarizes the position, type, size, and shape of each attachment, as well as the location and quantity for interproximal reduction (IPR).  
 "Active Aligner Stages" are the stages in which there is active force to the dentition. Every active aligner is a little different in shape to the previous aligner. Therefore, patient can feel the force when replacing an active aligner with a new one. In this figure, the active aligner stages of upper dentition is from stage #1 to the last stage of #66, whereas the active aligner stages of lower dentition is from stage #1 to #15.  
 "Passive Aligner Stages" are the stages in which there is no force to the dentition. Passive aligners are for retention purpose only, and patient cannot feel any force when wearing passive aligners. In this figure, there is no passive aligner stage prescribed to the upper dentition and the passive aligner stages of lower dentition is from #16 to #66.  
 When the doctor prescribes the use of "power arm", the Treatment Overview sheet will show a symbol "Ancillary" on the corresponding tooth.





**Fig. 5:**  
Prior to try-in, templates for bonding each arch are sectioned at the midline which results in four quadrant trays that are more convenient for clinical use.



**Fig. 7:**  
Fitting problem (yellow arrow) of the UL template occurs in the central incisor area which is the most crowded and irregular aspect of the arch.



**Fig. 6:**  
Color-matching with shade guides helps produce inconspicuous attachments.

3-5). These multiple checks reduce chair time and mistakes by ensuring that all templates are correctly configured.

### 3. Isolation and Color-Matching

After explaining the attachment bonding process to the patient, the hole-towel and retractor are applied to isolate the teeth and reduce saliva contamination. The shade for the attachment composite is selected under ambient light conditions by the doctor using the color matching tabs (shade guides) (Fig. 6).

### Bonding Phase

- (1) Polish all enamel surfaces in both arches with pumice paste and rinse thoroughly.
- (2) Try in the respective template for each quadrant. Ensure that they snap into place and fit properly. Fitting and retention problems may occur in the most crowded areas resulting in displacement on either end of the template. Note any fitting problems (Fig. 7) so they can be addressed at the time of bonding by applying pressure with a finger or instrument to achieve an optimal fit. Also, try in the post-attachment aligners (#2) to ensure a proper fit.

**NB:** During this step, the doctor must again check the specification and location for each attachment by comparing template marks to the Treatment Overview sheet (Fig. 3). After triple-checking the templates (twice by the assistant and once by the



**Fig. 8:**  
 Acid-etching according to the marked areas on the template is accomplished for natural enamel with 37% phosphoric acid gel for 30 seconds, and for porcelain surfaces with hydrofluoric acid for 60 seconds.

**Fig. 9:**  
 After rinsing with water and air drying, an etched enamel surface has a frosty (satin) appearance.

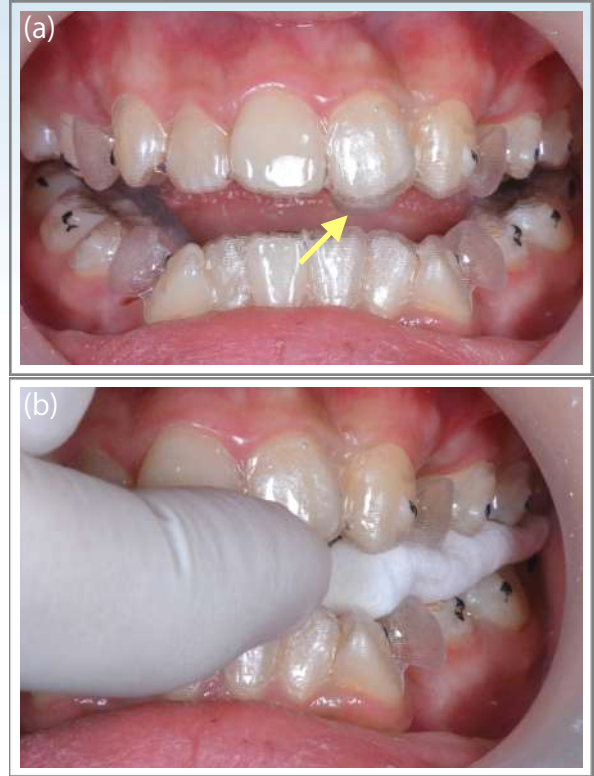


**Fig. 10:**  
 (a) Load composite resin into each attachment relief (window) with a resin-feeding gun.  
 (b) Adapt the resin into each window with a composite spatula.  
 (c) Check the buccal surfaces of the template to confirm a complete fill for each window.  
 (d) The lingual surface for each filled window should be slightly overfilled (convex).

doctor), the assistant then fills the attachment windows (reliefs) with composite resin.

(3) Use the marked post-attachment aligners and the doctor's chair side laptop computer to identify areas of enamel requiring etching. Spot etch only the area to be bonded with a 37% phosphoric acid gel for enamel, or hydrofluoric acid for porcelain (Fig. 8). Thoroughly rinse with water and dry. The etched areas should have a frosty appearance (Fig. 9). Insert cotton rolls between the teeth and tongue for saliva control. Apply the bonding agent (primer): OptiBond® Solo Plus™, but do not apply the curing light.

(4) Load the shade-matched composite into the windows of the attachment template, slightly overfilling each area (Fig. 10).



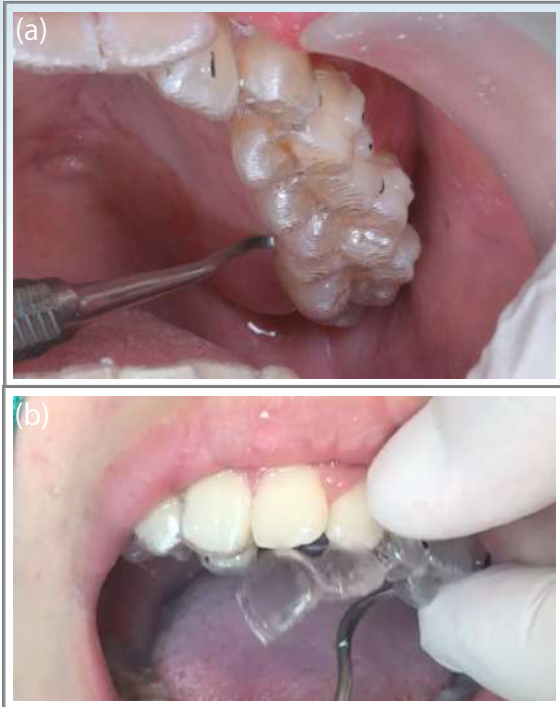
**Fig. 12:**  
 (a) A problem with the fit of the UL template was noticed at the try-in (yellow arrow). It must be corrected with finger or instrument pressure prior to curing the resin.  
 (b) The patient continues to bite on a cotton roll, while an instrument or finger is used to press the ill-fitting area so that it conforms properly to the surfaces of the teeth prior to utilizing the curing light.

**NB:** To improve efficiency, the doctor performs the etching procedure (Fig. 8) at the same time the assistant loads composite into the template windows (Fig. 10).

(5) After air blowing the uncured primer to a thin layer on each tooth, the UL and LL templates loaded with composite resin are seated in sequence. Then the patient bites on a cotton roll to seat the templates, i.e. tightly adapt the templates to the surfaces of the teeth (Fig. 11).



**Fig. 11:**  
 After coating each etched attachment area with primer, the resin-filled trays are seated on the two left quadrants, and the patient bites on a cotton roll to ensure a good fit to tooth surfaces.



■ Fig. 13:

(a) After the composite is completely cured, use a large scaler to dislodge the palatal or lingual posterior surface of each template.  
 (b) Protect the cheeks and lips with the operator's fingers when the attachment template is gently rotated to the buccal and removed from the mouth.

**NB:** Particularly for severely crowded incisors, a gap between the template and the surfaces of the teeth may occur after the patient bites on the cotton roll (Fig. 11). The problem is best resolved by pressing the fingers or an instrument to seat as much as possible the distorted section of the template prior to applying the curing light (Fig. 12).

(6) After the bonding procedure is completed for all four quadrants, additional irradiation with the curing light from all angles is necessary to ensure that primer and composite resin are completely cured.

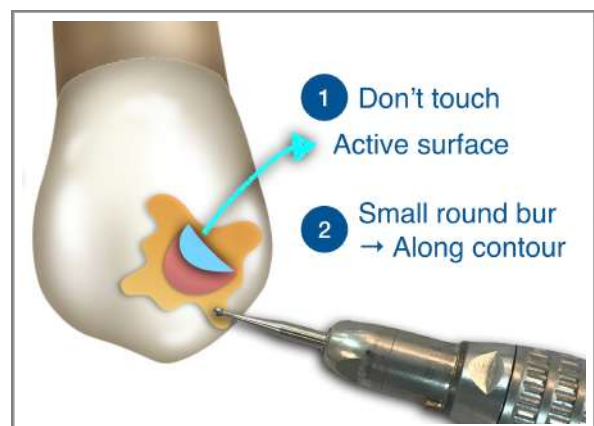


■ Fig. 14:

Clean flash and residual bonding resin around each attachment with a 1 mm diameter round bur in a straight handpiece. Avoid water-cooling to better visualize the margins of the attachments. Remove excess inter-proximal resin with dental floss.

### Post-Bonding Phase

(1) After curing is complete, use a large hook-type scaler to dislodge the distal ends of the template on the lingual surface, and then carefully remove it to the buccal to avoid damaging the template or attachments (Fig.



■ Fig. 15:

Avoid contacting the active surfaces of optimized attachments.

13). The templates are removed sequentially and properly stored. They may be needed when replacing or repairing an attachment(s) during treatment.

**NB:** Keep the templates in the patient's Invisalign® treatment box. The attachment templates should never be given to the patient.

(2) Clean all excess flash and residual bonding resin from around the attachments with a small round bur in a straight handpick (Fig. 14). Dental floss is effective for removing excess resin or composite from interproximal areas.

**NB:** Rotate the bur at a slow speed with blown air to clear excess resin as it is removed. To more easily distinguish the margin of each attachment, avoid water irrigation. Never touch the active surfaces of

optimized attachments (Fig. 15) because their shape and orientation are critical for the planned treatment objectives.

(3) Instruct the patient to completely engage all attachments when the post-attachment aligners are seated. Emphasize proper hygiene for the aligners and all enamel surfaces (Fig. 16). White spots are much less common for aligner compared to fixed appliance treatment, but placing aligners over teeth coated with plaque can result in generalized decalcification.<sup>7</sup>

## Discussion

Precise placement of attachments helps ensure optimal tooth movement as prescribed in ClinCheck®. This is probably the most important step for achieving desired outcomes.<sup>8</sup> The standard bonding



■ **Fig. 16:**

An upper panel of three intra-oral photographs reveals the original malocclusion. A similar lower panel shows the dentition after attachments are bonded and Aligner set #2 are seated to activate alignment.

procedure for attachments at Beethoven Orthodontic Center involves multiple checks by different personnel (Figs. 3, 5-7) to ensure adherence to the specification for each attachment: shape (type), shade, relative prominence, and location. Furthermore, excessive humidity (moisture contamination) is controlled with cheek and lip retraction and lingual cotton rolls to isolate the tongue. These are important steps for achieving optimal polymerization, bond strength, and desired dimensions for each attachment.<sup>9</sup>

## Conclusions

Attachments bonded with this established procedure facilitate the patient and dental team to enjoy a highly effective and relatively comfortable treatment experience. A full-mouth attachment bonding procedure can be accomplished in 12-15 minutes. This approach for rapidly and precisely bonding all attachments optimizes the efficiency of treatment to reduce chair time and improve outcomes.<sup>10</sup>

## Acknowledgements

Thanks to Dr. Rungsi Thavarungkul for the delicate, original illustrations and to Mr. Paul Head for proof-reading this article.

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\* TADs made of Ti alloy have a lower failure rate compared to SS when placed in thin cortical bone. These results are consistent with a biocompatibility-related tendency for less bone resorption at the bone screw interface. Reference: Failure Rates for SS and Ti-Alloy Incisal Anchorage Screws: Single-Center, Double Blind, Randomized Clinical Trial (J Digital Orthod 2018;52:70-79)

\*\* The overall success rate of 93.7% indicates that both SS and TiA are clinically acceptable for IZC BSs.

Reference: Failure rates for stainless steel versus titanium alloy infrazygomatic crest bone screws: A single-center, randomized double-blind clinical trial (Angle Orthod 2019;89(1):40-46)



# 2023-2024 第十五年度 貝多芬 矯正精修班



時間：週二上午 09:00-12:00

地點：金牛頓教育中心（新竹市建中一路 25 號 2 樓）

## 上課日期：

2023 4/18、5/16、6/13、7/11、8/15、9/12、10/3、11/7、12/19

2024 1/9、3/12

- ▶ 09:00 ~ 10:00 精選文獻分析
- ▶ 10:00 ~ 10:30 精緻完工案例
- ▶ 10:50 ~ 12:00 臨床技巧及常犯錯誤分享

全新的第十五年度 2023-24 貝多芬精修班，是由國際知名講師張慧男醫師主持，並偕同貝多芬牙醫團隊住院醫師群共同主講。

每月一次的課程之中，包含了：

1. 精選矯正權威期刊 AJODO 的文章做文獻分析與評讀。
2. 精緻完工 ABO 案例報告，其中因應數位矯正的世界趨勢，Insignia 與 Invisalign 病例為課程探討的主要內容之一。
3. 分享臨床上常犯的錯誤以及解決方法。

2023-24 貝多芬精修班內容豐富精彩，讓您經由每個月一次的課程，在面對各式的臨床案例時，更能游刃有餘、得心應手。

## 學習目的：

研讀最新趨勢文章可以窺知世界文獻公認的治療方式，而藉由評論文章的優缺點不僅能夠訓練判斷與思考能力，更可以清楚比較作法上的不同，達到完理解療方向、內容與穩定性的目標。

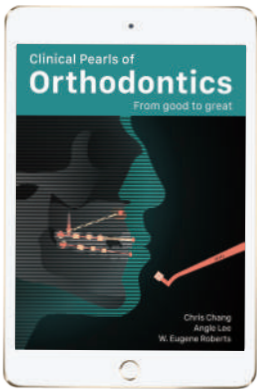


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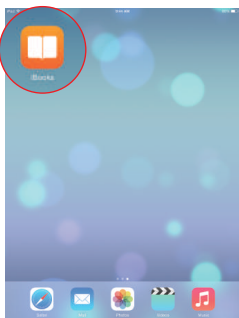
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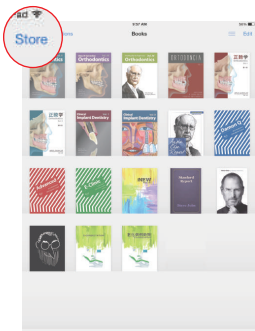
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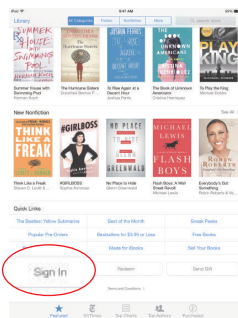
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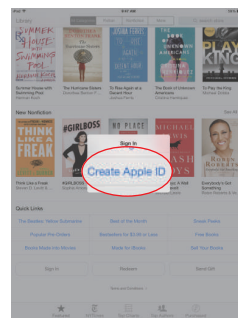
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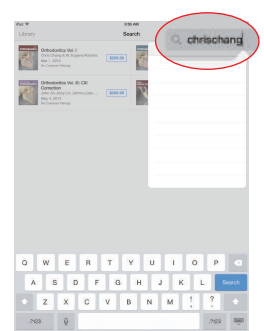
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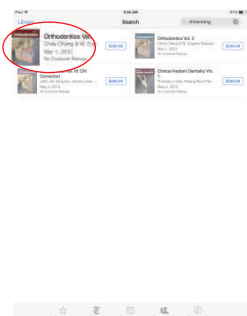
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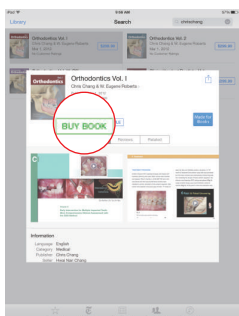
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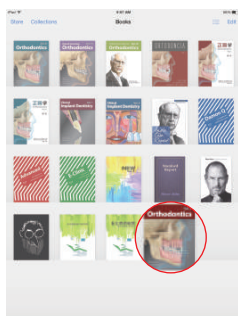
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