

# **Achieving Successful Results with Invisalign**

**- Series 1 of 2 -**

Presented by:  
David A. Chenin, DDS

# Series Overview



- Series Part 1:
  - David A. Chenin, DDS
    - Strategies for successful treatment outcomes
    - Cover Align Clinical Monitoring Guide topics
  - Jennifer Salzer, DDS
    - Discuss real cases examples of finishing techniques
- Series Part 2 November 17, 2003
  - Juan Carlos Quintero, DDS
    - Continue to discuss & show real cases examples of finishing techniques

# Introduction



- Manager of Clinical Process Development, Manufacturing Department
  - \_ Managed the incoming inspection of >50K cases
  - \_ Clinical Trainer for Costa Rica Treat Operations facility
  - \_ Developed the Online Case Evaluation Process
  - \_ Developed the Online Treatment Planning Forms
  - \_ Contributor to Certification Training, Primary Author of the *Clinical Monitoring Guide*, and numerous other publications
- Investigator for the first clinical study on Invisalign, University of the Pacific Invisalign Feasibility Study
- Faculty, Restorative Department, University of the Pacific School of Dentistry

# Topics of Discussion



- Beginning with the end in mind
  - Records
  - Treatment Planning
  - ClinCheck Review
- During Treatment
  - The Right Start
  - Monitoring
  - Midcourse Correction
- End of Treatment
  - Refinement
  - Auxiliary
  - Retention

Information primarily based upon Align's Clinical Monitoring Guide and Align manufacturing experience)



# Beginning With the End in Mind



- Records
  - Record not Submitted #1 Issue
  - Poor PVS impressions #2 Issue
  - Non-Diagnostic Photos #3 Issue
  - Poor Bite Registration #4 Issue
    - Record accuracy dictates treatment, how well aligners fit, and treatment outcome.
    - Presenting cases to colleagues, study clubs, publications, patient reception area

## Prescription Form

- Order Form
- Shipping /Billing
- Type of Case
- Patient Info
- Tx instructions

## Photos & X-Rays

- Detailing of 3-D models
- Verify occlusion
- Verify restorations, attachment placement, tooth movements, tooth development, and tooth position.
- Verify Proper Patient

## Impression & Bite Registration

- This is raw data to fabricate
- ClinCheck & Aligners
- Verify occlusion

# Beginning With the End in Mind



- Treatment Planning
  1. Identify Treatment Goals
    - Patients Chief desire/goals
    - Malocclusion Diagnosis
  2. Assess complexity of case
    - Start with your comfort level
  3. Decide to treat or refer
  4. If treating, then give informed consent
    - Needs for compliance
    - Plan for detailing and possible refinement
    - Anticipate auxiliary techniques
    - Good communication with patient is key to setting expectations

**invisalign** PRESCRIPTION & DIAGNOSIS FORM FORM A  
3-3: Anterior Teeth Only  
Invisalign is a registered trademark of Invisalign, Inc.  
For Full Invisalign Instructions, See Form B and C

DOCTOR NAME Last, First MI \_\_\_\_\_  
Address Address Line 1 \_\_\_\_\_  
Address Line 2 \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Country \_\_\_\_\_ Phone # \_\_\_\_\_  
Email \_\_\_\_\_

PATIENT NAME Last, First MI \_\_\_\_\_ Gender  Male  Female Age \_\_\_\_\_

1. Invisalign Treatment Options:  Yes  No  Clear Aligner  Clear Aligner  
2. Do you agree to wear these teeth?  Yes  No  I don't know  
3. Do you agree to wear retainers?  Yes  No  I don't know  
4. Malocclusion:  Mild  Moderate  Severe  
5. Retention:  Night  Day  
6. Retention:  Yes  No  
7. Do you agree to wear these teeth?  Yes  No  I don't know  
8. Do you agree to wear retainers?  Yes  No  I don't know  
9. Special Instructions: \_\_\_\_\_  
10. Doctor Signature: \_\_\_\_\_ Date: \_\_\_\_\_

# Beginning With the End in Mind



- Treatment Planning
  - Determine Anterior vs. Full
    - Amount of crowding / spacing
    - Personal preferences
  - Prescription & Diagnosis Form
    - Be specific
    - Avoiding less predictable movements or plan for auxiliaries
      - Severe Derotations of Cylindrical teeth (e.g. derotate prior to Invisalign)
      - Extrusions (e.g. intrude to level central incisors rather than extruding laterals)
      - Large Translations (e.g. sectional brackets)

invisalign		PRESCRIPTION & DIAGNOSIS FORM	FORM A
<b>3-3: Anterior Teeth Only</b> <small>(Anterior to Canine) No Extractions For Full Arch treatments use Form B only</small>			
DOCTOR NAME (Last, First MI) Ship to Address (or IDE):		Bill to Address (or IDE), if different:	
City: _____ State: _____ Zip: _____		City: _____ State: _____ Zip: _____	
Country: _____		Country: _____	
Phone #: _____		Phone #: _____	
Email / Fax #: _____		Email / Fax #: _____	
PATIENT NAME (Last, First MI): _____ Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female Age: _____			
<b>1. Invisalign Treated Arches:</b> <input type="checkbox"/> Both <input type="checkbox"/> Upper Only <input type="checkbox"/> Lower Only <b>2. Do not move these teeth:</b> (Note bridges not to be moved, any/whole teeth, & implants)		<b>6. Tooth Size Discrepancy:</b> If all spaces cannot be closed, then leave space: <input type="checkbox"/> Distal to 2's <input type="checkbox"/> Distal to 3's <input type="checkbox"/> Equally around 2's <input type="checkbox"/> IPR the opposite arch to close all spaces <input type="checkbox"/> Other (see Special Instructions)	
<b>3. Do not place attachments on these teeth:</b> (Note facial / buccal restorations)		<b>7. Overcorrection:</b> (Check all that apply) <input type="checkbox"/> Yes-Anterior Rotations <input type="checkbox"/> Yes-Anterior Invs/Outs <input type="checkbox"/> Yes-Space Closure <input type="checkbox"/> Other-see special instructions	
<b>4. Midline:</b> If = 2mm change, IPR or AP change may be needed. <input type="checkbox"/> Maintain Upper Move: <input type="checkbox"/> R / <input type="checkbox"/> L : <input type="checkbox"/> +2 <input type="checkbox"/> -2 mm <input type="checkbox"/> Maintain Lower Move: <input type="checkbox"/> R / <input type="checkbox"/> L : <input type="checkbox"/> +2 <input type="checkbox"/> -2 mm		<b>8. Treatment Preferences:</b> Refer to my on-line treatment preferences for basic guidance on this set-up. <input type="checkbox"/> No (if box is not checked, we will refer to your treatment preferences)	
<b>5. Resolve Spacing and Crowding:</b> (Check all that apply) <b>Spacing:</b> Upper: <input type="checkbox"/> Close all spaces <input type="checkbox"/> Leave space-see Section 6 Lower: <input type="checkbox"/> Close all spaces <input type="checkbox"/> Leave space-see Section 6 <b>Crowding:</b> Upper: Procline: <input type="checkbox"/> Primarily <input type="checkbox"/> as needed <input type="checkbox"/> None IPR: <input type="checkbox"/> Primarily <input type="checkbox"/> as needed <input type="checkbox"/> None Lower: Procline: <input type="checkbox"/> Primarily <input type="checkbox"/> as needed <input type="checkbox"/> None IPR: <input type="checkbox"/> Primarily <input type="checkbox"/> as needed <input type="checkbox"/> None		<b>9. Refinement Coverage:</b> <input type="checkbox"/> No (If box is not checked, Refinement Coverage and Fee applies) * For 3-3: Anterior Teeth Only treatment, overlap and overextension of space may be adjusted as needed to correct spacing at crowding. * If at the time of ClinCheck you wish to move teeth beyond 3-3, then Full Arch fees will apply.	
<b>10. Special Instructions</b> (e.g. extraction or attached magnets, black dye, resin reduction, predoctoral concerns, etc.) _____ _____ _____			
<b>Tooth ID:</b> Indicate which tooth numbering system you are using. <input type="checkbox"/> Palmer (UR8-LR8) <input type="checkbox"/> Universal (A1-452) <input type="checkbox"/> FDI (1.8-4.8)			
Doctor Signature _____		Date _____	
<small>The form constitutes your final and complete prescription for Align Technology. Diagnosis and prescription are the decision and sole responsibility of the doctor ordering this appliance and we are not liable for any complications or adjustments of Align Technology. Align Technology, ClinCheck and prescription are the decision and sole responsibility of the doctor ordering this appliance and we are not liable for any complications or adjustments of Align Technology. Align Technology, ClinCheck and prescription are the decision and sole responsibility of the doctor ordering this appliance and we are not liable for any complications or adjustments of Align Technology. Align Technology, ClinCheck and prescription are the decision and sole responsibility of the doctor ordering this appliance and we are not liable for any complications or adjustments of Align Technology.</small>			
Align Technology, Inc. • 881 Martin Avenue • Santa Clara, CA 95050 • 1-888-82-ALIGN • Fax: (877) 651-7128 • www.invisalign.com			
<small>1998 Rev. 01.01.03</small>			

# Beginning With the End in Mind

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- ClinCheck Manufacturing Data
  - \_ Many Full arch cases are accepted with zero modifications
  - \_ Majority of Full arch cases are accepted after zero or one modification
  - \_ Some top doctors rarely modify ClinCheck
  - \_ Some top doctors always modify ClinCheck



# Beginning With the End in Mind



- ClinCheck Review
  - Keep to your original treatment plan as much as possible
    - Try to avoid repeated requests of modifying and adjusting every tooth in the arch
    - If an action is missing, read the comments to see if there is a reason why it wasn't performed
    - If in the end, the 3D set-up has allowed you to see the case in a new light, then re-treatment plan thoroughly
    - Send the modification response on VIP. This is the beauty of Invisalign & ClinCheck

# Beginning With the End in Mind



- ClinCheck Review
  - Remember: ClinCheck is a 3D representation of your treatment plan
    - Check for less predictable movements if they were not planned:
      - Severe rotations of cylindrical teeth
      - Extrusions
      - Large Translations
    - If movements are necessary, decide if you would like to keep these as part of the treatment and/or plan for auxiliary techniques



# Beginning With the End in Mind



- What does planning for auxiliaries mean?
- Less predictable movements:
  - Severe rotations of cylindrical teeth
  - Extrusions
  - Large Translations
- Determine which auxiliaries you will use
- View ClinCheck and anticipate the stages to apply auxiliaries
- Plan the type of auxiliaries and planned stage in the patient chart for future reference

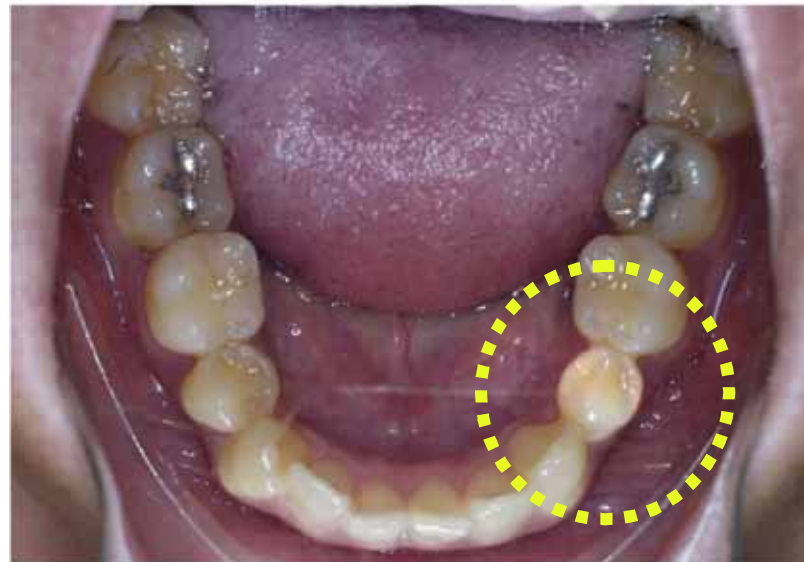
Tip: Putting the less predictable movements at end of treatment may prevent early derailing of treatment.



# Beginning With the End in Mind

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- Less predictable movements:
  - **Severe rotations of cylindrical teeth**
  - Extrusions
  - Large Translations



# Beginning With the End in Mind

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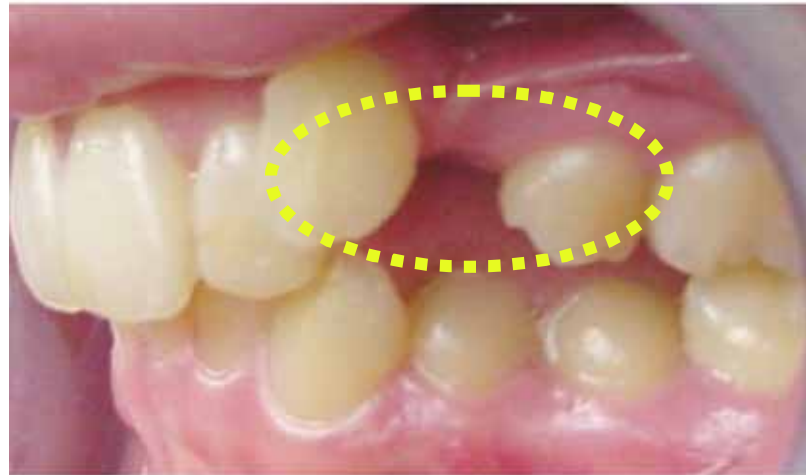
- Less predictable movements:
  - Severe rotations of cylindrical teeth
  - **Extrusions**
  - Large Translations



# Beginning With the End in Mind

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- Less predictable movements:
  - Severe rotations of cylindrical teeth
  - Extrusions
  - **Large Translations**  
(e.g. Teeth requiring large root movements)



- The Right Start
  - Accurate attachment bonding
  - Complete and thorough inspection of Aligner fit
    - ✓ Snap
    - ✓ Non-impingement of tissue
    - ✓ Trim as needed
    - ✓ Attachment engagement
  - Complete patient instruction
    - ✓ Compliance
    - ✓ Care and Use
  - Proper recall appointments
    - ✓ 4-8 weeks (avg. 6 weeks)
    - ✓ At least every other appointment, review the ClinCheck set-up to visualize treatment progress

# During Treatment



- Monitoring
    - At each Appointment
      - ✓ Check Aligner fit
      - ✓ Review IPR
      - ✓ Attachment Fit/Engagement
      - ✓ Tight contacts of crowded teeth (Floss/Fine diamond strips)
    - At least every other appointment\*
      - ✓ Review ClinCheck movements on the computer
      - ✓ Track progress (helps you understand actual results compared to 3D plan)
- \* Note: Pacific's orthodontic residents are trained to review ClinCheck at every appointment.

# During Treatment

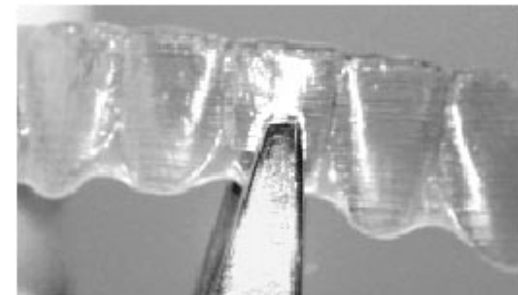


- To ensure Aligner tracking, consider:
  - ✓ Check IPR amount on Reprox Form and your notes in patient chart
  - ✓ Check contact with floss (may need additional IPR, or simply loosening contact with a fine diamond strip)
  - ✓ When checking attachments, use a graphite pencil to outline the attachment, then seat Aligner--for better attachment visualization
  - ✓ Back track 1-3 stages / longer wear
  - ✓ Check for tissue impingement / trim Aligner
  - ✓ Use Detail Pliers to apply additional force to teeth
  - ✓ Continue treatment as is and perform auxiliary techniques at end of treatment

# End of Treatment

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- Auxiliaries
- Refinement
- Retention

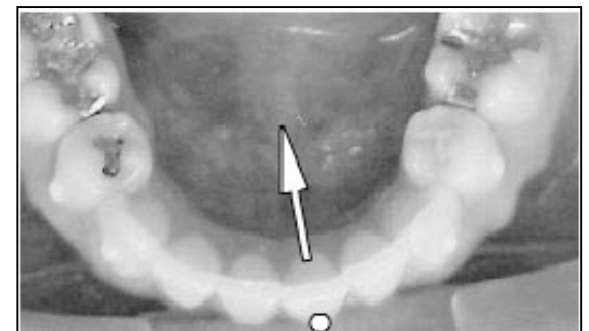
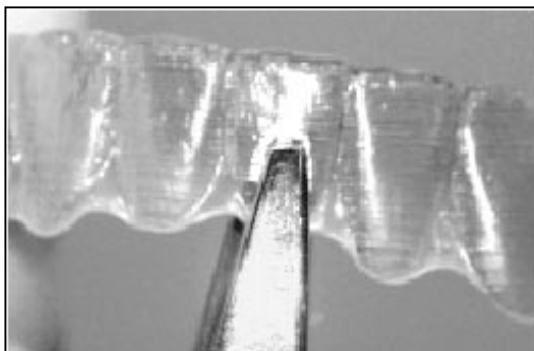


# End of Treatment



- Incorporating Auxiliaries
  - Detail Pliers
    - Ins and Outs
    - Rotations of anterior teeth

Tip: Start with making small dimple—too large may be difficult to seat Aligner



# End of Treatment

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- Incorporating Auxiliaries
  - Buttons and Elastics
    - Extrusion
    - Rotations
    - Midline Correction/A-P



# End of Treatment

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- Incorporating Auxiliaries
  - Sectionals



- Positioner



# End of Treatment



- Refinement: More Aligners needed to achieve final alignment
  - New Impression
    - When multiple teeth need alignment and some not on track with the Aligner
    - Final Aligner does not fit well
    - 10 business days for ClinCheck and 10 business days for Aligners
  - Photos Only—use current data
    - When a couple teeth are on track, but movements are not completely expressed
    - Final Aligner fits perfectly
    - 3 business days for ClinCheck and 10 business days for Aligners



# Beginning, Middle, or End of Treatment



- Treatment not Tracking
  - Tried solutions mentioned in *Clinical Monitoring Guide!*
  - Aligner absolutely does not fit
  - Continuing treatment without movements expressed not an option
- What To Expect if taking new PVS
  - 9 business days for Midcourse ClinCheck and 10 business days for new set of Aligners
    - Retake both arch PVS and photos if possible
  - No charge if reason for Midcourse Correction is unknown, but charged \$300 when reporting:
    - Patient compliance issue (e.g. <22hr wear),
    - Change in patients tooth anatomy (e.g. crown),
    - Change in treatment goals (e.g. adding an arch to treatment)

# End of Treatment

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- Retention
  - Order Invisalign Retainer
    - From existing 3D data
    - Align does not make retainers from a new impression
  - Make your own vacuum formed retainer (requires an impression)
  - Have a lab make you a:
    - Vacuum formed retainer
    - Hawley retainer (Standard retainer with metal wire)
    - Wrap-around retainer (occlusal surface is open)
  - National or Local Lab
    - Contact Information from Sales Reps for Local Labs



Note: Labs are not affiliated with Align Technology, Inc.

# Using The Guide



- Example: Upper right canine, is not extruding
- Example: Residual crowding
- Example: Attachments not fitting

# Using The Guide



Eg: Upper right canine is not extruding

<b>Contents</b>	
<b>1. Managing Aligner fit and seating</b>	
Critical fit issue (Aligners are not seating well, >1 mm)	1
Aligner popping up when forced down, or anterior/posterior rocking	3
Severe setback	5
The Aligner doesn't fit at all	6
Aligners are too tight or can't be removed (too sensitive)	7
The Aligners are not retentive enough	8
Short Aligners	9
Long Aligners	10
<b>2. Handling tooth-specific movements</b>	
Rotations of anterior teeth not occurring	11
Rotations of posterior teeth (especially premolars/bicuspids) not occurring	13
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Residual spaces at end of treatment	16
Anterior teeth not level	18
Incomplete extractions	19
Posterior openbite occurring near end of treatment	20
Black triangles appear	21
Incomplete tip at end of treatment	22
Incomplete torque	23
Unintended intrusion is occurring of teeth that I'm trying to extrude/rotate/expand	24
Unwanted tipping/dumping during large open space closure of extraction spaces	25
Distal root/Mesial root not occurring	26
Expansion not occurring	27
Intrusory not occurring	28
Extrusion into space not closing	29
Anterior or lateral openbite (rare) occurring	30
<b>3. Ensuring Attachments fit and stay bonded</b>	
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Attachments come debonded	32
<b>4. Addressing Patient concerns</b>	
Patient has negative reaction to Aligner (rare)	33
TMD symptoms occurring (jaw locks or locks—rare)	34
<b>5. Handling lost or broken Aligners</b>	
Lost or broken Aligner	35
<b>6. Maintaining Aligner Aesthetics</b>	
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Holes or bubbles	37
Attachments on anterior teeth are not aesthetic	38
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# Using The Guide



**Eg: Upper right canine is not extruding**

## 1. Managing Aligner fit and seating

General fit issues (Aligners are not seating well, >1 mm) .1
Aligner popping up when forced down, or anterior/posterior rocking .....3
Severe undercut .....5
The Aligners don't fit at all. ....6
Aligners are too tight or can't be removed (too retentive) 7
The Aligners are not retentive enough .....8
Short Aligners .....9
Long Aligners .....10

## 2. Handling tooth-specific movement






Rotations of anterior teeth not occurring .....11
Rotations of posterior teeth (especially premolars/ bicuspid) not occurring .....13
Residual crowding .....15
Residual spaces at the end of treatment .....16
Anterior teeth not level .....18
<b>Incomplete extrusions</b> .....19
Posterior occlusion occurring near end of treatment .....20

# Using The Guide

## Eg: Upper right canine is not extruding

### 2 Handling tooth-specific movements

#### Incomplete extrusions

	ROOT CAUSES	SOLUTIONS	REFERENCES	
<p><b>A</b> </p> <p>As intra-arch elastic is place</p>	<p>Absolute extrusion was programmed (less predictable than relative extrusion).</p> <p>Prevention Note 2.10</p>	<p>Auxiliary Treatment: Button—interarch or intra-arch elastic—and make sure there is no contact binding <i>see fig. A.6.D.F.</i></p>	<p>Sectionals (brackets and wires)</p>	<p>Extrusions (<i>Tips &amp; Techniques on Online CEC</i>); Buttons; Batten Kit</p>
<p><b>B</b> </p> <p>Triangular elastic wear from upper first bicuspids or lower bicuspids. Aligner removed away from buttons and occlusal enamel away from upper first bicuspids to allow for extrusion. Occlusal coverage remains on lower bicuspids. (Suzuki)</p>	<p>Insufficient undercut for Aligner to grab tooth</p> <p>Prevention Note 2.10</p>	<p>Auxiliary Treatment: Button—interarch or intra-arch elastic—and make sure there is no contact binding <i>see fig. A.6.D.F.</i></p>	<p>Sectionals (brackets and wires)</p>	<p>Extrusions (<i>Tips &amp; Techniques on Online CEC</i>); Buttons; Batten Kit</p>
<p><b>C</b> </p> <p>Applying a dimple adjacent to an attachment using Detail Pliers</p>	<p>Attachments not engaging, or attachment ineffective</p> <p>Prevention Note 2.11</p>	<p>Remove attachments and use Auxiliary Treatment: Button—interarch or intra-arch elastic—make sure there is no contact binding <i>see fig. A.6.D.F.</i></p>	<p>Consider using Detail Pliers to assist with extrusion by placing dimples directly gingival to the attachment. <i>see fig. C.</i></p>	<p>Ensure there are no interproximal space constraints and reference the Attachments section, pp. 31-32.</p> <p>Extrusions (<i>Tips &amp; Techniques on Online CEC</i>); Buttons; Batten Kit; Pliers (<i>Tips &amp; Techniques on Online CEC</i>)</p>
<p><b>D</b> </p> <p>Bonded buttons to bring #2 into occlusion. (Miller)</p>	<p>Insufficient coverage area of the isolated tooth (short Aligner around tooth)</p>	<p>Auxiliary Treatment: Button—interarch or intra-arch elastic—and make sure there is no contact binding <i>see fig. A.6.D.F.</i></p>	<p>Sectionals (brackets and wires)</p>	<p>Extrusions (<i>Tips &amp; Techniques on Online CEC</i>); Buttons; Batten Kit</p>
<p><b>E</b> </p> <p>After tooth extruded</p>	<p>Lack of space (interproximal interference)</p>	<p>Always monitor contacts with unwaxed floss during treatment. If IPR is prescribed, check reproximation form and track amount of IPR done. If IPR is not prescribed, continue to check if contacts are tight, loosen contacts with a fine diamond strip; extend Aligner wear with current Aligner (maybe backtrack 1-2 aligners); verify treatment progress with corresponding ClinCheck stage.</p>	<p>Auxiliary Treatment: Button—interarch or intra-arch elastic—and make sure there is no contact binding <i>see fig. A.6.D.F.</i></p>	<p>IPR Guides (<i>Tips &amp; Techniques on Online CEC</i>); IPR Vials; IPR in Clinical Update, Fall 2001</p>

**PREVENTION NOTES:**

2.10 Program more predictable movements in ClinCheck (intrusion and relative extrusion); if doing less predictable movements, program them at the end of treatment (i.e., absolute extrusion); attachments are placed for 2-3 anterior intrusions but not automatically placed for extrusion of posterior teeth—request if desired (see Attachment Protocol on Online CEC).

2.11 Attachments for anterior extrusions are automatically placed for extrusions >1 mm. Posterior extrusion >1 mm must be requested by doctor.

# Using The Guide



## Eg: Residual crowding

**Contents**

- 1. Managing Aligner fit and seating
  - General fit issues (Aligners are not seating well, >1 mm) . . . 1
  - Aligner popping up when forced down, or anterior/posterior rocking . . . . . 3
  - Severe undercut . . . . . 5
  - The Aligners don't fit at all . . . . . 6
  - Aligners are too tight or can't be removed from mouth/well . . . . . 7
  - The Aligners are not retentive enough . . . . . 8
  - Short Aligners . . . . . 9
  - Long Aligners . . . . . 10
- 2. Handling tooth-specific movements
  - Rotations of anterior teeth not occurring . . . . . 11
  - Rotations of posterior teeth (especially premolars/bicuspids) not occurring . . . . . 13
  - Residual crowding . . . . . 15
  - Residual spaces at the end of treatment . . . . . 16
  - Anterior teeth not level . . . . . 18
  - Incomplete extractions . . . . . 19
  - Posterior openbite occurring near end of treatment . . . . . 20
  - Black triangle appear . . . . . 21
  - Incomplete tip at end of treatment . . . . . 22
  - Incomplete torque . . . . . 23
  - Unintended intrusion is occurring of teeth that I'm trying to extrude/rotate/expand . . . . . 24
  - Unwanted tipping/lamping during large space closure of extraction spaces . . . . . 25
  - Distalization/Mesialization not occurring . . . . . 26
  - Expansion not occurring . . . . . 27
  - Intrusion not occurring . . . . . 28
  - Extraction site space not closing . . . . . 29
  - Anterior or lateral openbite (rare) occurring . . . . . 30
- 3. Ensuring Attachments fit and stay bonded
  - Attachments are not fitting into the Aligner attachment space . . . . . 31
  - Attachments come debonded . . . . . 32
- 4. Addressing Patient concerns
  - Patient has negative reaction to Aligner (rare) . . . . . 33
  - TMD symptoms occurring (jaw pain or locks—rare) . . . . . 34
- 5. Handling lost or broken Aligners
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  - Staining or discoloration . . . . . 36
  - Holes or bubbles . . . . . 37
  - Attachments on anterior teeth are not aesthetic . . . . . 38
- 7. Retainer questions
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# Using The Guide



## Eg: Residual crowding

### 1. Managing Aligner fit and seating

General fit issues (Aligners are not seating well, >1 mm) .1
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Aligners are too tight or can't be removed (too retentive) 7
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Long Aligners .....10

### 2. Handling tooth-specific movements

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Expansion not occurring .....27
Intrusion not occurring .....28
Extraction site space not closing .....29
Anterior or lateral openbite (rare) occurring .....30

### 3. Ensuring Attachments fit

# Using The Guide

## Eg: Residual crowding

### 2 Handling tooth-specific movements

#### Residual crowding



Example before



Adjustment (Canine adjustment to Aligner was added after photo was taken.)



Example After



Overcorrection Aligner, indicated with a "+"

ROOT CAUSES	SOLUTIONS	REFERENCES
Aligner lag, or not enough time for movement to be expressed due to variation in bone biology or tooth morphology	Extend wear time of Aligners or backtrack an Aligner before moving forward. Ensure contacts are not binding on teeth that are to rotate	Use Detail Pliers to apply pressure points for additional force <i>see fig. A.R.C</i>  <i>Detail Pliers (Tips &amp; Techniques on Online CEC)</i>
Lack of overjet; Lower crowding cannot be resolved because lower teeth are contacting upper teeth (interarch interference)	Move interference out of the way with Case Refinement Aligners	
Inadequate IPR during treatment  Prevention Note 2.6	Complete the amount of IPR prescribed and extend wear time of Aligner or backtrack an Aligner	IF AT END OF TREATMENT: during Case Refinement ask for Overcorrection <i>see fig. D</i>  Use Detail Pliers to apply pressure points for additional force  <i>Detail Pliers (Tips &amp; Techniques on Online CEC)</i>
Contact binding (interproximal interference)  Prevention Note 2.7	Ensure no contact binding with floss and finishing diamond strips; Extend wear time of Aligners	Use Detail Pliers to apply pressure points for additional force  <i>IPR Guides (Tips &amp; Techniques on Online CEC; IPR Video; IPR in Clinical Update, Fall 2005; Detail Pliers (Tips &amp; Techniques on Online CEC)</i>

#### PREVENTION NOTES:

- 2.6 Closely track amount of IPR and monitor teeth.
- 2.7 Consider Pre-PVS IPR (make sure to retain teeth between taking PVS impressions and initial Aligner delivery).

# Using The Guide



## Eg: Attachment not Fitting

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# Using The Guide



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# Using The Guide

## Eg: Attachments not Fitting

### 3 Ensuring Attachments fit and stay bonded

Attachments are not fitting into the Aligner attachment space



Properly seated attachments.



Verify attachment seating by marking it with a pencil.



If the pencil mark and the Aligner do not line up, then the tooth movement is lagging behind.



Before using Eraser Pliers to erase attachment pocket



After using Eraser Pliers to erase attachment pocket

#### ROOT CAUSES

Tooth movement not occurring due to bone biology, Aligner lag, or excessive speed of movements

#### SOLUTIONS

Back up an Aligner to try to reengage attachment into pocket; if they don't reengage, see the solutions to the right...

Remove attachment and use sectioned attachment template to rebond attachments; or use current Aligner as an attachment template, but be aware that you will be one stage off

Remove attachment and continue treatment without attachments if possible; if attachment pocket in Aligner affects patient aesthetics erase it with the Eraser pliers (NOTE: this may distort the Aligner) see fig. 3.4

If attachments are necessary to achieve original treatment goals, then use Mid-Course Correction for new Aligners

#### REFERENCES

Guide to Placing attachments (Tips & Techniques on Online CEC)

#### PREVENTION NOTES:

3.0 Make sure attachment is fully covered by Aligner—during ClinCheck modification, request attachment is placed at least 2 mm away from the gingival edge of the Aligner.

3.1 Educate the patient to mark the attachment with a pencil or wax pencil and to check to make sure the attachments are engaged. (See Fig. B, C)

Prevention Note 3.0

Gingiva is simulated in gingiva—if Aligner is trimmed short then attachment will not be fully covered and therefore not fully engaged

(See Short Aligners section, p. 9)

- Clinical Treatment & Align Process Assistance
  - Local Experienced Orthodontist or Dentist
  - Cert. II
  - Online CEC
  - Study Clubs
- Full Treatment Planning and/or Troubleshooting Consultation
  - Local Experienced Orthodontist or Dentist

***QUESTIONS????***

Presented by:

**David A. Chenin, DDS**