Aligner Treatment:
What Assistants Need To Know

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- Stanford University
  - B.S. Biology
  - B.A. Economics
- UCSF
  - Dental School
  - Orthodontic Residency
- Orthodontic Attending- CRMC-UCSF-Fresno/ General Practice Residency
  - Teaching for over 25 years
  - Teaching Clear Aligner Treatment since 2007
- Orthodontist
  - Private Practice
  - Group Pediatric Practice
  - Over 25 years
  - Using Clear Aligners since 1999
Clear Aligner Therapy is increasing in prevalence as a treatment modality to correct malocclusions. Aligners are delivered to treat minor problems like orthodontic relapse and even more complex cases involving extractions.

This lecture will provide an overview of Aligner Treatment: covering the spectrum of case types that can be resolved predictably and what assistants need to know, start to finish, to deliver quality aligner care.
Attendees of this lecture will be able to:

• Recognize malocclusions that can be treated predictably using aligners.

• Outline, start to finish, the procedures involved in delivering aligner care.

• Manage patient aligner treatment from Initial Delivery to Retention.
Aligner Systems

- 8 Aligner Systems
  - Minor Treatment
    - CAS (Clear Aligner System)
    - MTM Clear Aligner
    - Simpli 5
    - Smart Moves
  - Minor-Moderate Treatment
    - EZ Align
    - Originator
  - Major Treatment
    - Clear Correct
    - Invisalign
Aligner System Functions

Minor Treatment
- CAS (Clear Aligner System)
  - CAS aligner trays are designed for minor anterior treatment.
- MTM Clear Aligner
  - Used to correct minor anterior misalignments.
- Simpli5
  - Express aligner treatment for minimal movement.
- Smart Moves
  - Offers exceptional seating and controlled movement, high predictability and patient comfort.

Minor-Moderate Treatment
- EZ-Align
  - Designed for minor to major movement.
- Originator
  - Used for minor to moderate tooth movement

Major Treatment
- Clear Correct
  - Designed for major tooth movement
- Invisalign
  - Designed for major tooth movement
CASE TYPE OVERVIEW

- Generalized Spacing
- Diastema
- Crowding
- Orthodontic Relapse
- Deep Bite
- Open Bite
- Over Bite
- Under Bite
- Cross Bite
- Combination Restorative
Generalized Spacing
Diastema
Crowding
Deep Bite
Open Bite
Over Bite
Under Bite
Combination Restorative
Delivery: Start To Finish
Orthodontic Records

- Diagnostic Photos
- Panoramic Radiograph
- Cephalometric Radiograph
- 3D Intra-Oral Scan/ PVS Impressions
PVS Impressions or 3D Scan

- Poly Vinyl Siloxane (PVS)- Silicone Elastomer
  - Dimensional Stability

Manual PVS Impression

Intra Oral Scan
3D Intra-Oral Scanner
Submit Case With Treatment Plan
Computerization

CAD - Computer Aided Design

CAM - Computer Aided Manufacturing
Initial Delivery Start Kit

- Aligner Cases
- Chapstick
- Closys Toothpaste
- Floss
- Mouth Mirror
- Travel Toothbrush
- Aligned Chewies
- Aligned Retriever
Care Instructions

Forget everything you’ve heard about teeth straightening. Because now there’s breakthrough technology that lets you get the smile you always wanted without bands, brackets, or wires.

**A clear alternative**

By using a series of clear removable aligners, straightens your teeth right before your eyes. Change them about every two weeks, and your teeth will move—little by little, week by week—until they have moved to the final position your orthodontist or dentist has prescribed. Comfortable to wear, our aligners are also removable so you can eat, drink, brush, and floss as usual.

**Less treatment time**

A typical case takes about a year from start to finish. You’ll see your doctor every month or two to see how you’re progressing. Every few visits, you’ll be given additional aligners to continue your treatment. Commonly, the number of aligners worn during treatment is between 18 and 30, but treatment time and the number of aligners will vary from case to case.

**Invisible. And comfortable**

Is a virtually invisible solution. So you won’t draw undue attention to your mouth while in treatment. In fact, virtually no one will know you’re wearing them unless you tell. Comfortable to wear, our aligners are also removable so you can eat, drink, brush, and floss as usual.

Is it for me?

Can be used to treat the vast majority of common problems for adults and teens. Whether your smile needs minor improvements or more extensive adjustments, can certainly help. It's successful in treating overly crowded or widely spaced teeth. It can also relieve more complex issues, including overbites, underbites and even crossbites. In fact, an Certified Orthodontist or Dentist can use clear aligners in all or part of just about any treatment plan.

Look your best during treatment

Is clear and practically invisible, so nothing gets in the way of your new smile. No wonder Invisalign is the choice of over half a million people.

- Unobtrusive in business meetings or social gatherings
- No metal wires or bands to irritate your mouth
- Most people won’t notice you’re wearing aligners
Start Video
Attachments

- Increased Surface Area of the Teeth
- Increased Retention of the Aligner
- Ideal Surfaces for Applying a Push Force
Attachment Set-up

- Scaler
- Gel Etchant
- Suction Tip
- Cheek Retractor
- Mouth Mirror
- Cotton Rolls
- Bonding Brushes
- Composite Material
- High-Speed Flame Carbide Bur
- Bonding Agent
- Aligner Templates
- Composite Material
Ormco Dental

- Etching Gel is a phosphoric acid used for etching enamel and dentin to promote adhesion of primer/bonding agent adhesives to tooth structure and restorative materials.

- Ormco Dental Gel Etchant is fast-acting and 37% Phosphoric Acid. It is dispensed from a bendable syringe tip, which provides precise placement and an easy rinse, without leaving behind residue.

- Place gel etch on the tooth by syringe or by bonding brush, leave on for 30-45 seconds and rinse.
Bonding Primer

G-Bond Unit Dose

• 7\textsuperscript{th} Generation One Component Self-Etching Light-Cured Adhesive

• The unique combination of phosphoric acid ester monomer and 4-MET adhesive technology creates superior etch and adhesion to enamel in addition to providing chemical and mechanical seal to dentin – referred to as the Nano Interaction Zone.

• Etch, desensitize, prime and bond in as little as 20 seconds

• No post-op sensitivity; Fast and easy application
Hybrid Composite

• Tetric EvoCeram is the universal nano-hybrid composite for anterior and posterior restorations that affords outstanding esthetics. The filler technology employed in Tetric EvoCeram is based on an optimum blend of different fillers and filler sizes.

• Advantages
  • Universal nano-hybrid composite for anterior and posterior restorations
  • Proven clinical performance with over 100 million restorations placed worldwide
  • More working time due to the patented light sensitivity filter
  • Natural shade blend with surrounding dentition ensures outstanding restorative results
Komet Dental USA

- H48L.31.012 Long Flame Carbide Bur

- Once a bonded orthodontic appliance is removed, remnants of dental adhesive will be left on the teeth. This flame carbide bur was designed to remove the residual adhesive and restore a smooth aesthetic finish.
IPR- Interproximal Reduction

- Decrease Binding of the Teeth
- Re-Shape Teeth
  - Correct Tooth Size Discrepancies
  - Decrease Black Triangles
- Decrease Crowding to Minimize Extractions
- Aid in Retraction of Teeth
- Decrease Black Triangles
**Interproximal Reduction**
Reducing tooth widths for form, function and stability

**You’re on your way to a healthy new smile**
To help you achieve it, your orthodontist feels that interproximal reduction, making some of your teeth slightly narrower, will contribute to the successful outcome of your orthodontic treatment. It may also contribute to long-term stability of your results after your braces are removed. Interproximal reduction is the removal of some of the outer tooth surface, called enamel, usually between teeth that touch. It has been used in orthodontics since the 1960s. It is also known as slenderizing, stripping, enamel reduction, repalcement and extrinsic reductive.

Whatever the name, the intentions are the same—to acquire more space for your teeth, to bring your teeth into alignment, to improve your bite (the way your teeth come together) or to make the teeth more attractive. Sometimes interproximal reduction is done alone, but it is usually done in combination with orthodontic appliance treatment. Sometimes it is even done in conjunction with tooth extractions. Sometimes it is done following orthodontic treatment to establish stability. Many times front teeth are contoured during or after orthodontic treatment to create a balanced and harmonious appearance of teeth. Your orthodontist will recommend enamel reduction if it is a solution to your individual need.

2 mm deficient

![Diagram](22mm)

6 6 6 6 = 24mm

Interproximal reduction (also known as slenderizing, stripping, enamel reduction, repalcement and extrinsic reductive) is a means by which additional space is acquired for your teeth. This illustration shows how 2 mm of space can be gained through the process of interproximal reduction.

**Questions and answers**
Will interproximal reduction damage my teeth or gums?
The health of your teeth and gums is of utmost concern to your orthodontist. Studies among patients who have had interproximal reduction show that the procedure does not make teeth more susceptible to tooth decay nor does it predispose gums to gum disease. Occasionally, some patients may experience some soreness in the first week. Overall, the results are generally positive.

Front teeth trim the framework upon which lips rest. Evaluating facial characteristics through photographs and X-rays is an essential step in orthodontic treatment. Your orthodontist will examine your facial appearance and decide whether or not interproximal reduction is suitable or beneficial.

The primary reason orthodontists choose to perform interproximal reduction on some patients is to reduce the size of the teeth so that they can be aligned properly. Studies among patients who have had interproximal reduction show that the procedure does not make teeth more susceptible to tooth decay nor does it predispose gums to gum disease.
IPR

Mouth Mirror
ACT Fluoride Rinse
Slow-Speed with Diamond Wheel and Guard
Finishing Strip
Diamond Strip
2x2’s
Floss

2x2's
Floss
Komet USA Dental

- Disk Guard and Adapter to be used on a slow speed hand-piece with a disk wheel.

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<th>Code</th>
<th>Description</th>
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<tr>
<td>5014222U0</td>
<td>53200 DISC GUARD MEDIUM 18MM Protects discs up to 18mm wide (Must order in multiples of 1)</td>
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<tr>
<td>5014223U0</td>
<td>53202 DISC GUARD LARGE 22MM Protects discs up to 22 mm wide (Must order in multiples of 1)</td>
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<tr>
<td>5014224U0</td>
<td>53203 DISC GUARD ADAPTER. The disc guard screws onto the adapter and the adapter is snapped onto the end of the nosecone (Must order in multiples of 1)</td>
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<td>021204U0</td>
<td>6934 11.220 HP COARSE VISIONFLEX OPEN MESHED DOUBLE SIDED DIAMOND DISC (Must order in multiples of 1)</td>
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<tr>
<td>5019041U0</td>
<td>6934 11.250 HP COARSE VISION FLEX DIAMOND DISC (Must order in multiples of 1)</td>
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IPR Diamond Strips

Komet USA Dental

- Vision Flex Interproximal Strips used to hand-file in the interproximal surfaces of the teeth to relieve the tight contact.

- Easy to use finishing strips used to smooth proximal surfaces
Tracking

Monitoring Aligner Fit

**Good fit**
- Aligners are seating well over the teeth
- No visible gaps or rocking
- All attachments are engaged properly

**Poor Fit**
Tracking Set Up
Tracking Aligner Features

ALIGNER FEATURES

UPPER

BUCCAL

LINGUAL

stages 1-28

stages 1-28

stages 1-28

LOWER

BUCCAL

LINGUAL

stages 1-28

stages 1-28

stages 1-28

TOOTH MOVEMENT ASSESSMENT

Tooth | Assessment | Movement | Value | Range
--- | --- | --- | --- | ---
6 | Blue | Root Movement | 3.0 mm | 4.0 mm-6.0 mm
8 | Blue | Root Movement | 4.0 mm | 4.0 mm-6.0 mm
9 | Blue | Root Movement | 3.1 mm | 3.0 mm-4.0 mm
Upper Right Quadrant | Blue | A-P Correction | 3.1 mm | 3.0 mm-4.0 mm
Auxiliaries

- Buttons for Elastics
  - Class II or III
  - Vertical
  - Rotations
- Expanders
- Sectional Fixed Appliances
- Sagittal Correctors
  - Carriere
  - Herbst
  - Pendulum
Rotational Auxiliary
CL. II Elastic Auxiliary
Sectional Fixed Auxiliary
Refinement

Refinement is the detail and finishing part of treatment. A new scan and progress set of photographs and/or radiographs are used to design additional aligners and/or plan auxiliary treatment to fine tune the result.
Right Buccal Cross Bite

Initial Right Buccal

Post Auxiliary Right Buccal
Final Records
Records Comparison

Initial

Final
Retention

- **Invisible Retainers**
  - Clear removable plastic appliance designed to fit precisely over the teeth. These retainers are easily removable and have no visible wires.

- **Hawley Retainers**
  - Thin acrylic molded appliance with wires that retain the teeth in their new position. Hawley retainers are durable, removable and come in a variety of colors.

- **Lower Fixed (Bonded) Retainer**
  - Fixed retainers are not removable. They are bonded on the lingual surface of the teeth and remain in place for years or indefinitely.
Aligner Therapy Takeaway:

Three Partners for Success (Removable Treatment)

1. Orthodontist (Coach)- Design the right treatment plan
2. Assistants (Support Staff/Assistant Coaches)- Active motivators with information, guidance and encouragement.
3. Patients (Team Players)- Cooperation: Right Effort and Attitude
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ORTHODONTICS IS MY PASSION...

“That’s why I support the AAOF.”