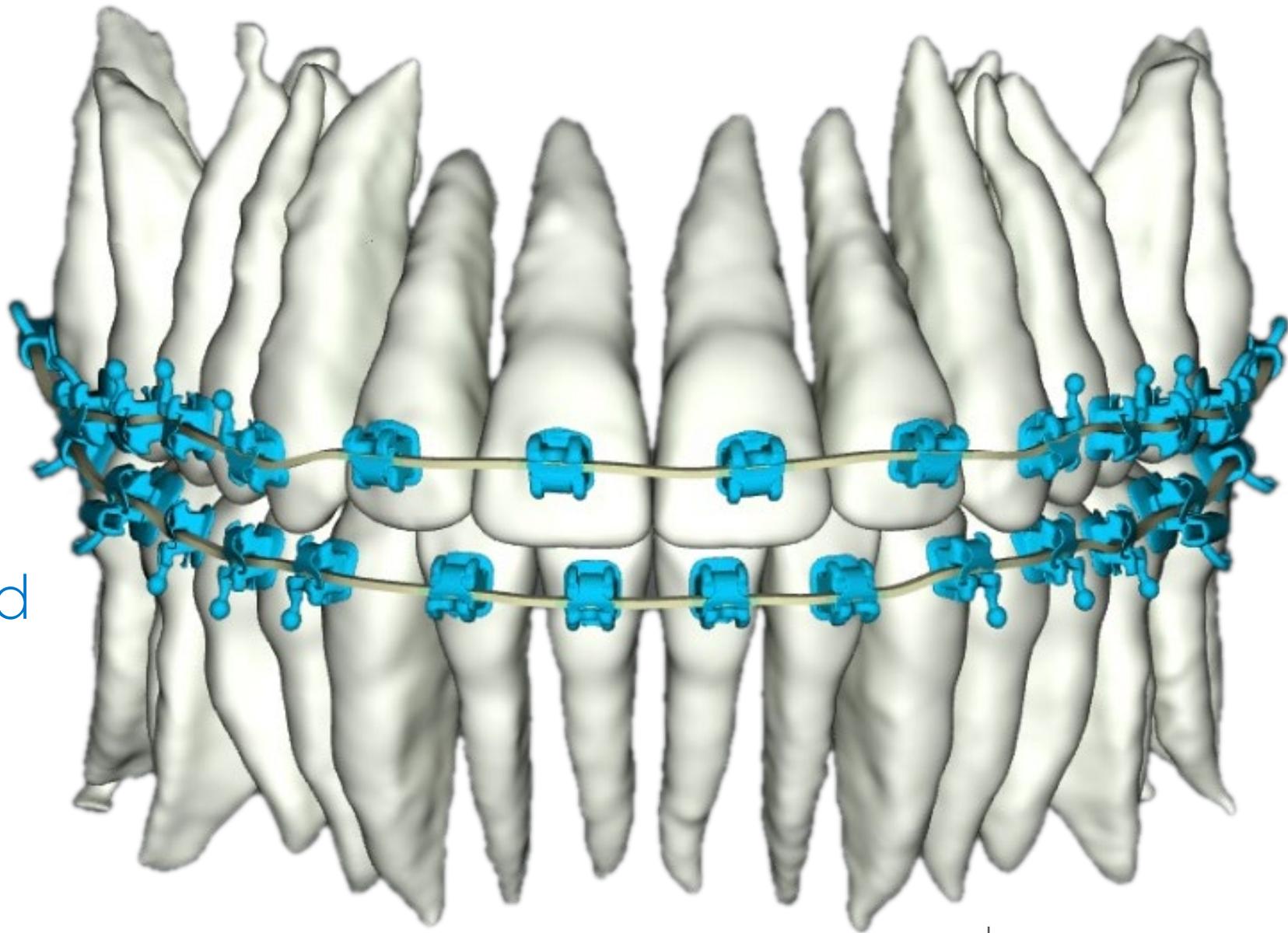


SureSmile® Advanced  
Wire Therapy



# Overview of SureSmile® Wire Therapy Process

SureSmile® is an end-to-end solution for fixed and removable appliances that allows the doctor to apply 3D diagnostic imaging and computer-aided treatment planning to unlock the power of both shape memory alloy and ductile archwires through customization. This results in greater control and efficiency for orthodontic care.

SureSmile® is comprised of three key components:

- In-vivo scanning is used to capture 3D images of a patient's dentition. These images are used to produce 3D models with individually movable teeth.
- SureSmile® 3D software provides powerful visualization tools for precision diagnosis, treatment simulation and customized appliance design. The doctor can review the digital setup with this software and use it to communicate with patients and with the SureSmile® Digital Lab.
- The SureSmile® Digital Lab processes scans and provides a setup based on clinical instructions from the practice. Our manufacturing facility can produce robotically bent precision archwires, aligners, printed models and IDB trays.

*Important: Dentsply Sirona does not determine patient care. Dentsply Sirona only provides therapeutics as directed by the doctor. The SureSmile® process depends on the application of the doctor's diagnostic and clinical judgment.*



SureSmile®

# Reviewing Therapeutic Models

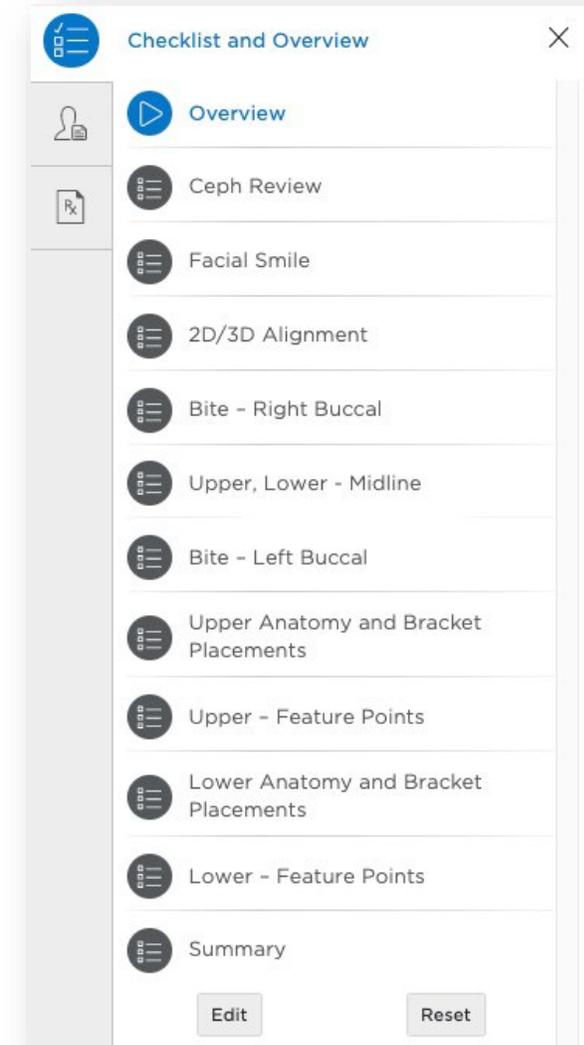
# Reviewing the Therapeutic Model

In SureSmile® Advanced, a therapeutic model is a 3D model of the patient's individual tooth anatomy and bracket positions (if applicable). It is created from an in-vivo scan in combination with photos and x-rays. You order the therapeutic model at the point when you are ready to start treatment with SureSmile® custom archwires.

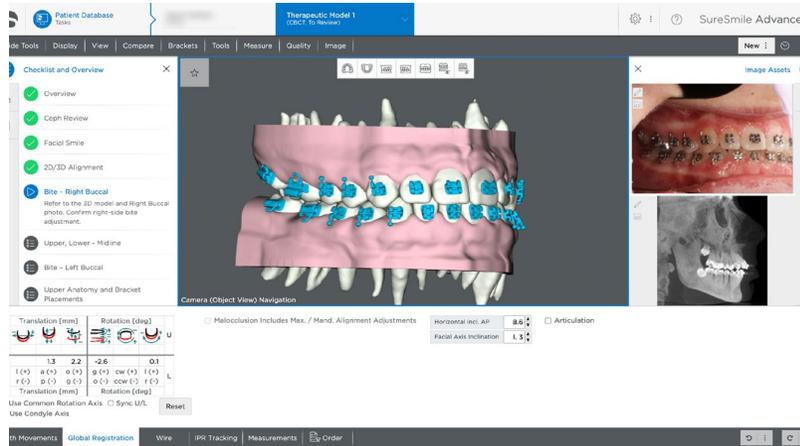
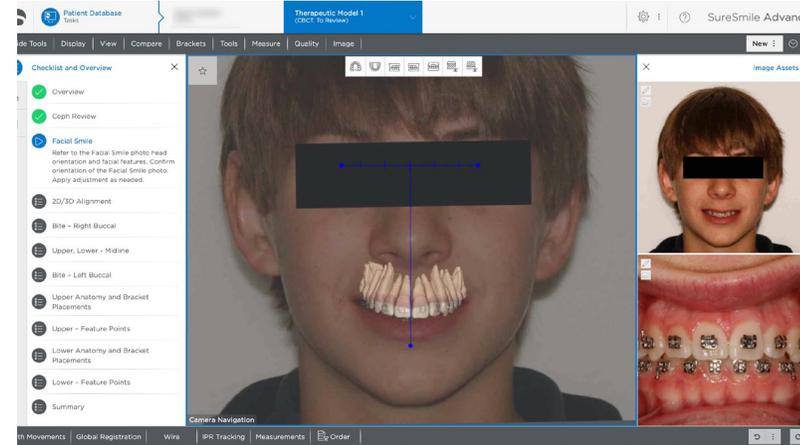
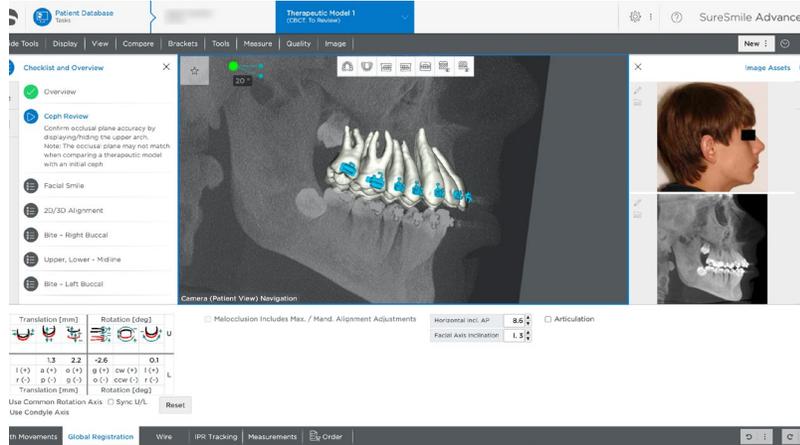
The Digital Lab will process the imported scan data, and using the photos and x-rays as references, will create a 3D digital model of the patient's current dentition. Once the therapeutic model is complete, it is returned to you in digital format to review it for accuracy.

# Therapeutic Model Review Checklist

- Checklists in the treatment planning workspace support a step-by-step standardized review of models after they are processed by the Digital Lab and returned to you. There are distinct checklists for diagnostic models, therapeutic models, setup models and final models.
- You will use a 12-step checklist to systematically review a therapeutic model for any inaccuracies.



# Reviewing the Therapeutic Model



# Ordering a Setup

# Completing the Setup Prescription Form (MACROS)

- SureSmile® Advanced organizes the information required for a setup prescription into six categories – Midline, Archform, Class, Resolutions, Occlusal Plane and Surgery. We refer to these six categories by the acronym MACROS. Think of MACROS as an organizational tool to help you with your treatment planning and to convey your plan to the Digital Lab.
- The Digital Lab requires that you make selections under each of the six MACROS categories listed in the prescription form so that your setup technician has enough information to process your setup.

# Completing the Setup Prescription Form (MACROS)

- If all the MACROS categories are not filled out completely, or if the Digital Lab has questions regarding the treatment plan, the setup order is returned to you in a *Needs Information* state. You must provide to the Digital Lab the information requested in the product notes to complete the order.

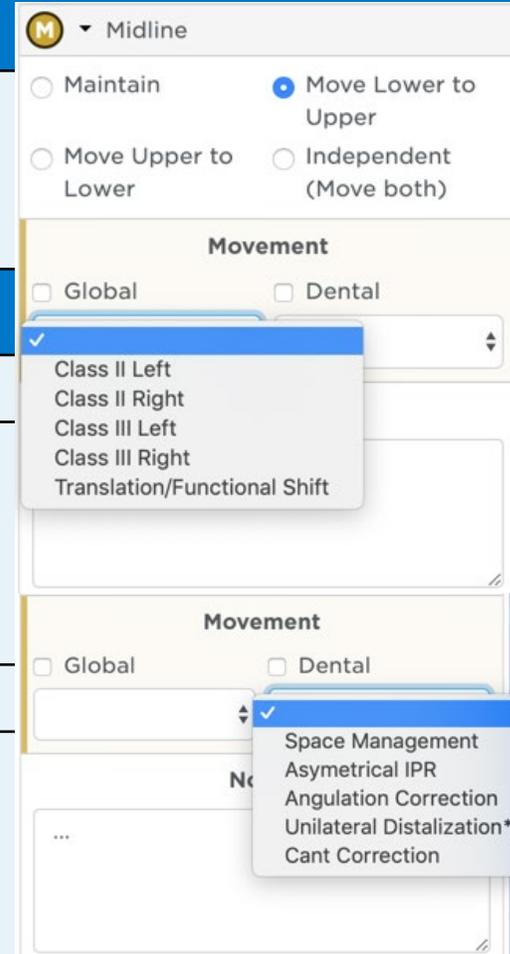


What do the MACROS button colors indicate?

-  → Section has not been opened or clicked in
-  → More information is needed
-  → All required information has been provided

# Midline

Which Midline to Treat to	
<b>Maintain</b> <b>Move Upper to Lower</b> <b>Move Lower to Upper</b> <b>Independent (move both)</b>	= maintain current positions = treat to lower = treat to upper = treat independently ( <i>specification needed</i> )
How to Achieve Midline Correction	
Global Movement	Move globally
<b>Class II Left</b> <b>Class II Right</b> <b>Class III Left</b> <b>Class III Right</b> <b>Translation for Functional Shift</b>	= rotate mandible to the right = rotate mandible to the left = rotate mandible to the left = rotate mandible to the right = translate mandible to the left or right
Dental Movement	Move dentally
<b>Space Management</b> <b>Asymmetrical IPR</b> <b>Angulation Correction</b> <b>Unilateral Distalization</b> <b>Cant Correction</b>	= use space closure = IPR to allow for dental correction = crown angulation change = distalize left or right ( <i>auxiliary anchorage required</i> ) = improve midline by correcting the cant



# Archform

Which Archform to Treat to	
<b>Maintain Relationship Independent</b>	= maintain current positions
<b>Adjust to Upper</b>	= treat independently ( <i>specification needed</i> )
<b>Adjust to Lower</b>	= treat to upper
	= treat to lower
Archform Type Choices	
Natural (patient's)	Penta Normal
Brader	Penta Ovoid
ORMCO TMA	Penta Narrow Ovoid
PAR Arch	Penta Tapered
Vari simplex large	Penta Narrow Tapered
Vari simplex small	True Arch
Bennet & McLaughlin	Damon
Upper Expansion / Constriction	
<b>Upper</b>	= amount of expansion or constriction
<b>Lower</b>	= amount of expansion or constriction
Archform Reference Teeth	
<b>Archform References</b>	= the teeth with proper archform alignment to be used as archform reference teeth

**A** ▾ Archform

Maintain Relationship       Adjust to Upper  
 Independent       Adjust to Lower

**Archform Type**

Natural ▾

Upper Exp.\* (+) / Con. (-) 0.0 mm ▾

Lower Exp.\* (+) / Con. (-) 0.0 mm ▾

*\* Auxiliary anchorage may be necessary.*

**Archform Reference Teeth**

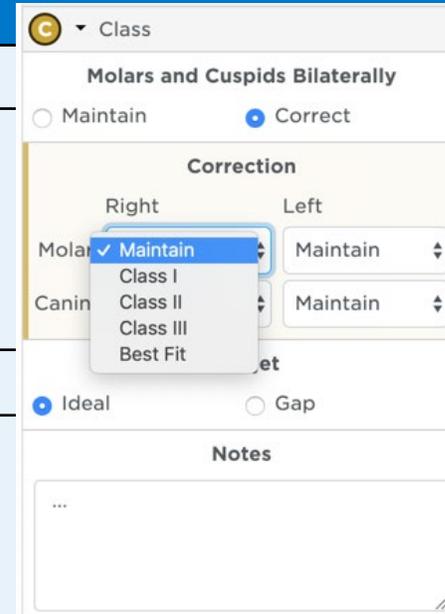
|   
 |

**Notes**

...

# Class

Which Class to Treat to		
<b>Molar</b>	<b>Right</b>	<b>Left</b>
	Maintain Class I Class II Class III Best Fit	Maintain Class I Class II Class III Best Fit
<b>Canine</b>	<b>Right</b>	<b>Left</b>
	Maintain Class I Class II Class III Best Fit	Maintain Class I Class II Class III Best Fit



# Class

## How to Achieve the Class Correction

<b>Global Correction</b>	Class II Class III	= use Class II simulation = use Class III simulation
<b>Dental Correction</b>	Space Management Asymmetrical IPR Angulation Correction Archform Correction Cant Correction	= improve class using space closure = use IPR to help with class correction = improve class by adjusting angulation alignment = improve class by adjusting the archform = improve class by correcting the cant

## Anterior Overjet

<b>Ideal</b>	= mandibular incisor edges contact maxillary lingual surfaces
<b>Gap</b>	= space between mandibular incisor edges and maxillary lingual surfaces

The screenshot shows the 'Class' settings panel in the SureSmile software. It includes the following sections:

- Molars and Cuspids Bilaterally:** Radio buttons for 'Maintain' and 'Correct' (selected).
- Correction:** Dropdown menus for 'Right' and 'Left' sides, with 'Molar' and 'Canine' categories set to 'Class I'.
- Achieve Class by:** Radio buttons for 'Global' (selected) and 'Dental'. A dropdown menu is open showing 'Class II' and 'Class III' options. Below this is a 'Maximum A-P Change' slider set to 1.0 mm.
- Overjet:** Radio buttons for 'Ideal' (selected) and 'Gap'.
- Notes:** A dropdown menu is open showing options: 'Space Management', 'Asymmetrical IPR', 'Angulation Correction', 'Archform Correction', and 'Cant Correction'.

A red note at the bottom of the panel reads: '\* Auxiliary anchorage may be necessary.'

# Resolutions

Tooth Size Discrepancy	
<b>Bolton Ratio and Maxilla &amp; Mandible Sum</b>	= arch measurements and surplus
Resolve Tooth Size Issues	
<b>IPR</b>	= resolve tooth size issues using interproximal reduction; choose the location of the IPR; choose the maximum amount of IPR allowed

**R** Resolutions

**Tooth Size Discrepancy**

	All (6..6)	Anteriors (3..3)
<b>Bolton Ratio</b>	94.3%	81.0%
<b>Maxilla Sum</b>	93.2 mm	43.8 mm
<b>Mandible Sum</b>	87.8 mm	35.5 mm

Surplus (6..6): lower 2.8mm

Surplus (3..3): lower 1.7mm

**Resolve Tooth Size Issues**

IPR
  Restorative (No IPR)
  Accept Best fit (No IPR, No Restorati

**Location**

Upper: None

Lower: 
 None  
 3-3  
 4-4  
 6-6

Space: Reciprocal

**Tooth Movement Restrictions**

|

Notes



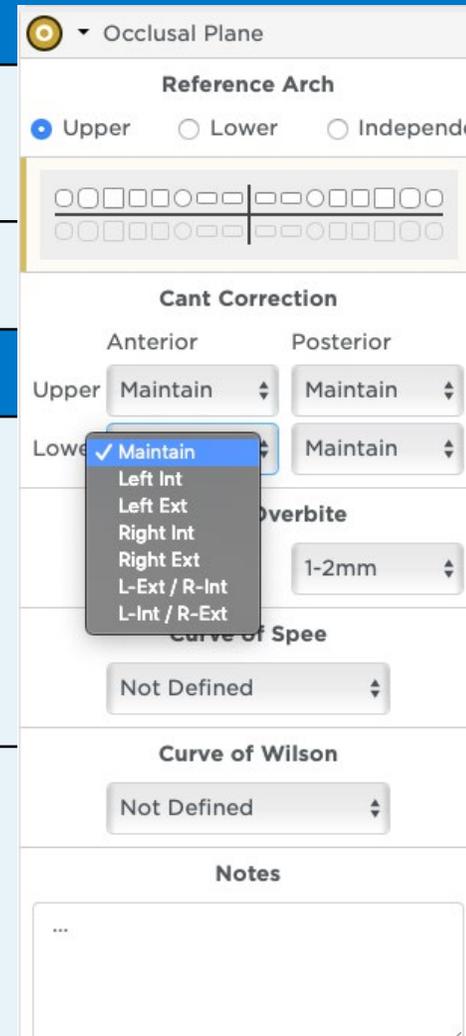
# Resolutions

Resolve Tooth Size Issues	
<b>Restorative (No IPR)</b>	= tooth/teeth will be restored later, no IPR allowed; type notes for Digital Lab in “Resolve Restorative Issues” box
Resolve Tooth Size Issues	
<b>Accept Best Fit (No IPR, No Restorative)</b>	= get best fit with no IPR and no restorative work later; prioritize overjet or class if both cannot be obtained
Space Closure Requirements	
<b>Reciprocal</b>	= choose Reciprocal to close spaces both mesially and distally
<b>Max. Anchorage</b>	= choose Max. Anchorage to close spaces distally
<b>Min. Anchorage</b>	= choose Min. Anchorage to close spaces mesially
Tooth Movement Restrictions	
Teeth which cannot be moved (e.g., ankylosis, root resorption, periodontally involved tooth/teeth)	

The screenshot displays the 'Resolve Tooth Size Issues' section of the software interface. It features three radio button options: 'IPR', 'Restorative (No IPR)', and 'Accept Best fit (No IPR, No Restorative)'. The 'Restorative (No IPR)' option is currently selected. Below this, there is a 'Prioritize' section with radio buttons for 'Overjet' and 'Class'. The 'Space Closure Requirements' section shows a dropdown menu set to 'Reciprocal'. The 'Resolve Space Closure Issues' section contains a text input field with a placeholder '...' and a 'PAL' label. The 'Tooth Movement Restrictions' section shows a grid of 16 checkboxes arranged in two rows of eight. At the bottom, there is a 'Notes' section with a text input field.

# Occlusal Plane

Which Arch to Use as Occlusal Plane Reference		
<b>Upper</b>	= treat to upper occlusal plane	
<b>Lower</b>	= treat to lower occlusal plane	
<b>Independent</b>	= treat independently	
<b>Occlusal Plane Reference Teeth</b>	= choose at least one reference tooth on the reference arch	
Indicate How to Treat Cant		
<b>Upper Anterior</b>	Maintain Left – Int Left – Ext Right – Int Right – Ext	= maintain = intrude left segment = extrude left segment = intrude right segment = extrude right segment
<b>Lower Anterior</b>	L – Ext R – Int L – Int R – Ext	= extrude left/intrude right segments = intrude left/extrude right segments
<b>Upper Posterior</b>	Maintain Left – Int Left – Ext Right – Int Right – Ext	= maintain = intrude left segment = extrude left segment = intrude right segment = extrude right segment
<b>Lower Posterior</b>	L – Ext R – Int L – Int R – Ext	= extrude left/intrude right segments = intrude left/extrude right segments



# Occlusal Plane

Indicate How to Treat Anterior Overbite		
<b>Anterior Overbite</b>	= < 1 mm = 1-2 mm = > 2 mm	
Indicate How to Treat Curve of Spee		
<b>Curve of Spee</b>	Level – Ant. Intrusion Level – Bicuspid Extrusion Level – Combination Maintain Increase	= with anterior intrusion = with bicuspid extrusion = with both = maintain CoS = increase CoS
Indicate How to Treat Curve of Wilson		
<b>Curve of Wilson</b>	Level Maintain Increase	= decrease crown buccal torque = maintain posterior torque = increase crown buccal torque

The screenshot shows a software interface with three dropdown menus:

- Anterior Overbite:** Options are < 1mm, 1-2mm (selected), and > 2mm.
- Curve of Spee:** Options are Not Defined (selected), Level - Ant. Intrusion, Level - Bicuspid Extrusion, Level Combination, Maintain, and Increase.
- Curve of Wilson:** Options are Not Defined (selected), Level, Maintain, and Increase.

# Surgery

Surgery	
<b>Maxilla</b> <b>Mandible</b> <i>(Selection of one or both arches activates the Surgery tab)</i>	= 1 piece = 2 pieces = 3 pieces
<b>Notes</b>	= be sure to leave notes for the Digital Lab specifying the type of surgery that is planned for the patient

Surgery

Surgery On

Maxilla  Mandible

✓ 1 piece  
2 pieces  
3 pieces

1 piece

Notes

...

# Reviewing a Setup

# Reviewing a Setup

What is a 3D setup?

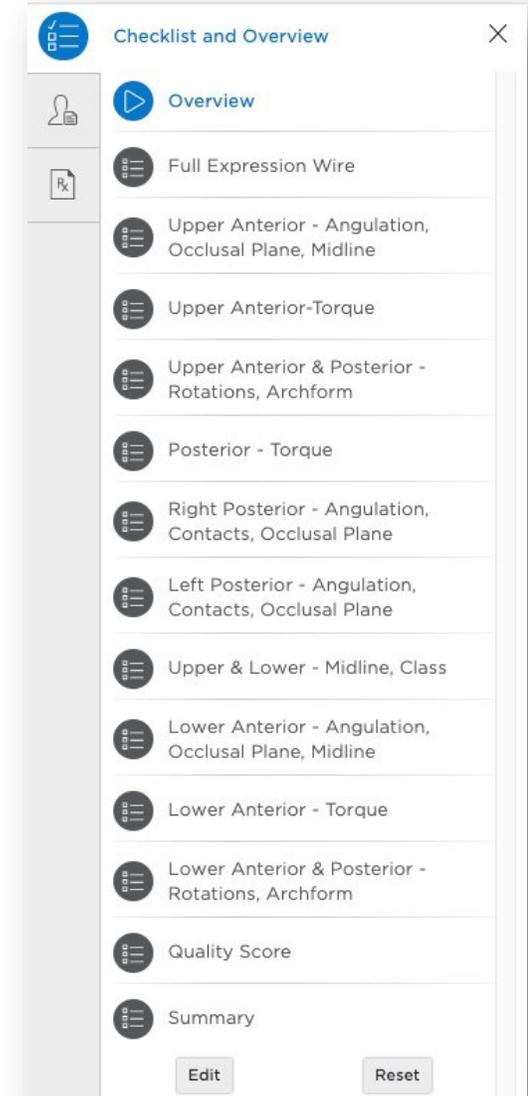
- Based on the therapeutic model and MACROS (setup prescription)
- Basis of the SureSmile® custom archwire or aligner

What are the prerequisites for a setup?

- Therapeutic model must be in one of two product states:
  - Approved
  - Finished

# Setup Review Checklist

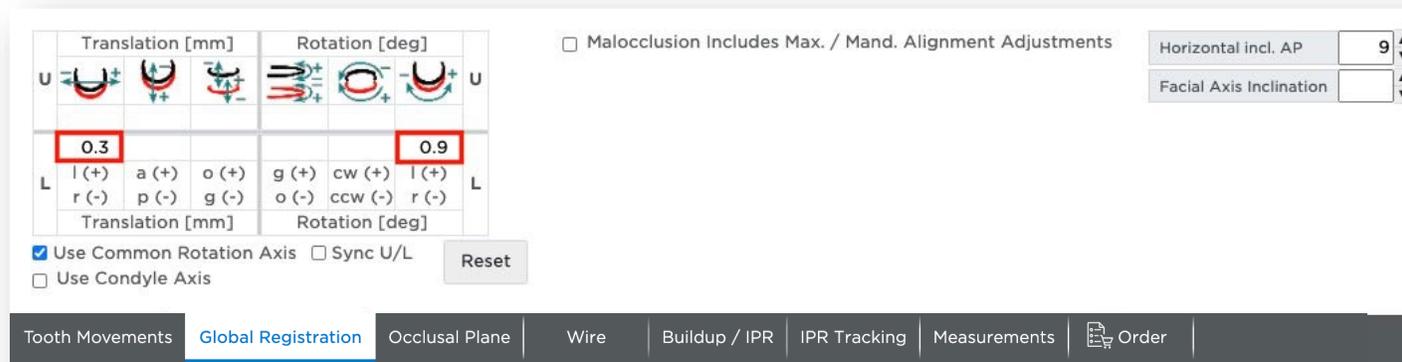
- The setup review checklist was designed under the direction of doctors who are expert SureSmile® Advanced users.
- The checklist was created to help doctors complete their review faster and find issues more easily.
- The checklist is a 14-step review (by default).
- The checklist can be customized.



# Clinical Considerations: Global Midline Correction

## Key Points:

1. Rotation to translation proportion
2. Movements should be in the same direction



**Global Correction      0.3 mm Translation      0.9 deg Rotation**

The proportion of rotation to translation is approximately 3:1

Translation = to compensate for rotational side effects which could appear in the posterior segment

Rotation and Translation movements should always be applied in the same direction  
(both + or both – values)

# Clinical Considerations: Dental Midline Correction

The screenshot displays a dental software interface with a 3D model of a dental arch. The interface includes a menu bar at the top with options like 'Guide Tools', 'Display', 'View', 'Compare', 'Tools', 'Measure', 'Quality', and 'Image'. Below the menu is a toolbar with various icons. The main area shows a 3D model of a dental arch with teeth in light blue and a pink gum line. Below the model is a table of measurements for the upper and lower arches, with columns labeled LR8 through LL8. The table includes rows for mesial (+) / distal (-), buccal (+) / lingual (-), occlusal (+) / gingival (-), Torque facial (+) / lingual (-), Ang. mesial (+) / distal (-), Rot. mesial (+) / distal (-), and Spacing (+) / Intersection (-). The values for the LR1 and LL1 columns are highlighted in red, showing 0.8 and -0.8 respectively. Below the table are control panels for 'Comparison Stage', 'Displacement Type', 'Edit Selection', 'Functions', 'Midline Offset', and 'Align Front'. The 'Midline Offset' is set to L 0.9. The 'Align Front' section has buttons for 2-2, 3-3, and 4-4, and a checked 'Keep Midline' option. At the bottom, there is a 'Tooth Movements' section with buttons for 'Global Registration', 'Buildup / IPR', 'Brackets', 'Bracket Placement', 'Measurements', and 'Order'.

Upper / Lower	LR8	LR7	LR6	LR5	LR4	LR3	LR2	LR1	LL1	LL2	LL3	LL4	LL5	LL6	LL7	LL8	
mesial (+) / distal (-)			0.6	0.6	0.5	0.5	0.7	0.8	-0.8	-1.0	-1.1	-0.9	-0.8	-0.8			mesial (+) / distal (-)
buccal (+) / lingual (-)						-0.2	-0.6	-0.6	-0.6	-0.6	-0.2						buccal (+) / lingual (-)
occlusal (+) / gingival (-)						-0.4	-0.4	-0.4	-0.8	-0.7	-0.4						occlusal (+) / gingival (-)
Torque facial (+) / lingual (-)																	Torque facial (+) / lingual (-)
Ang. mesial (+) / distal (-)										2							Ang. mesial (+) / distal (-)
Rot. mesial (+) / distal (-)																	Rot. mesial (+) / distal (-)
Spacing (+) / Intersection (-)																	Spacing (+) / Intersection (-)
Do not move	<input type="checkbox"/>	Do not move															

Comparison Stage: Reference Stage: Therapeutic Model 1

Displacement Type:  Tooth  Cusp Tip

Malocclusion Includes Max. / Mand. Alignment Adjustments

Edit Selection: 0.0 =

Functions: Clear Spaces Reset

Midline Offset: L 0.9

Align Front: 2-2 3-3 4-4

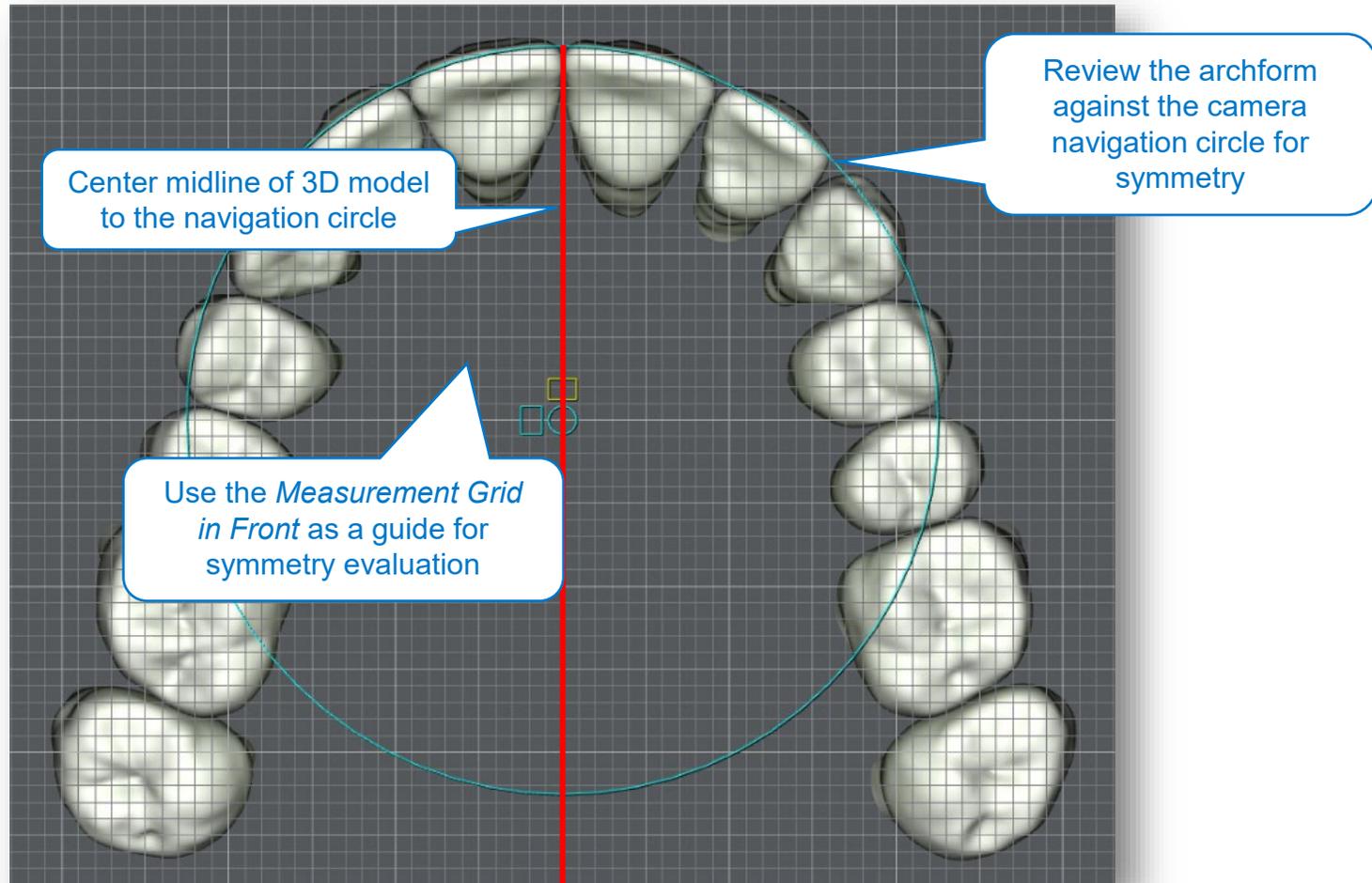
Keep Midline

Show Setup Workflow

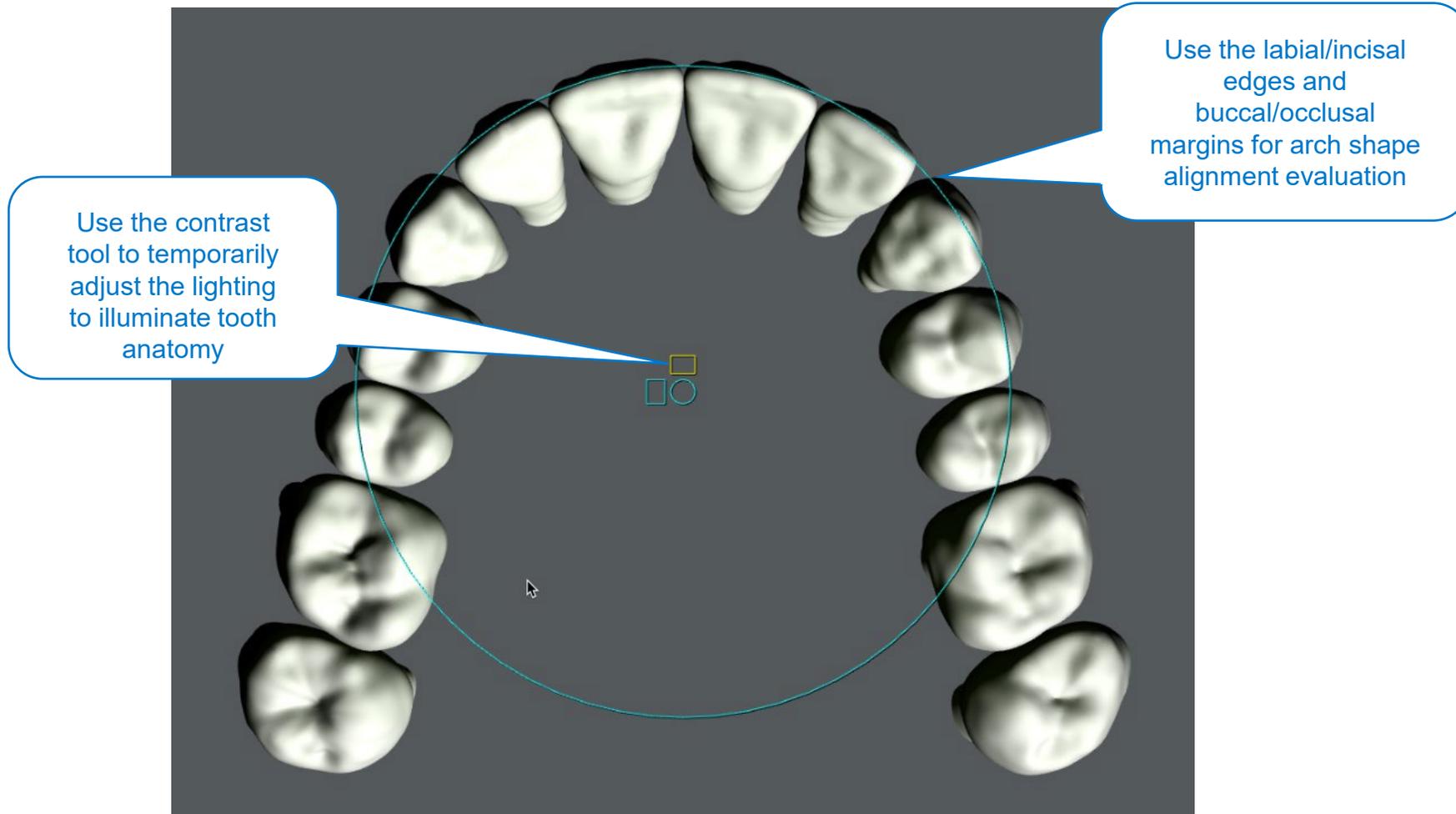
Tooth Movements: Global Registration Buildup / IPR Brackets Bracket Placement Measurements Order

Dental Correction ~ 0.8 mm Dental Correction to the left

# Clinical Considerations: Arch Symmetry

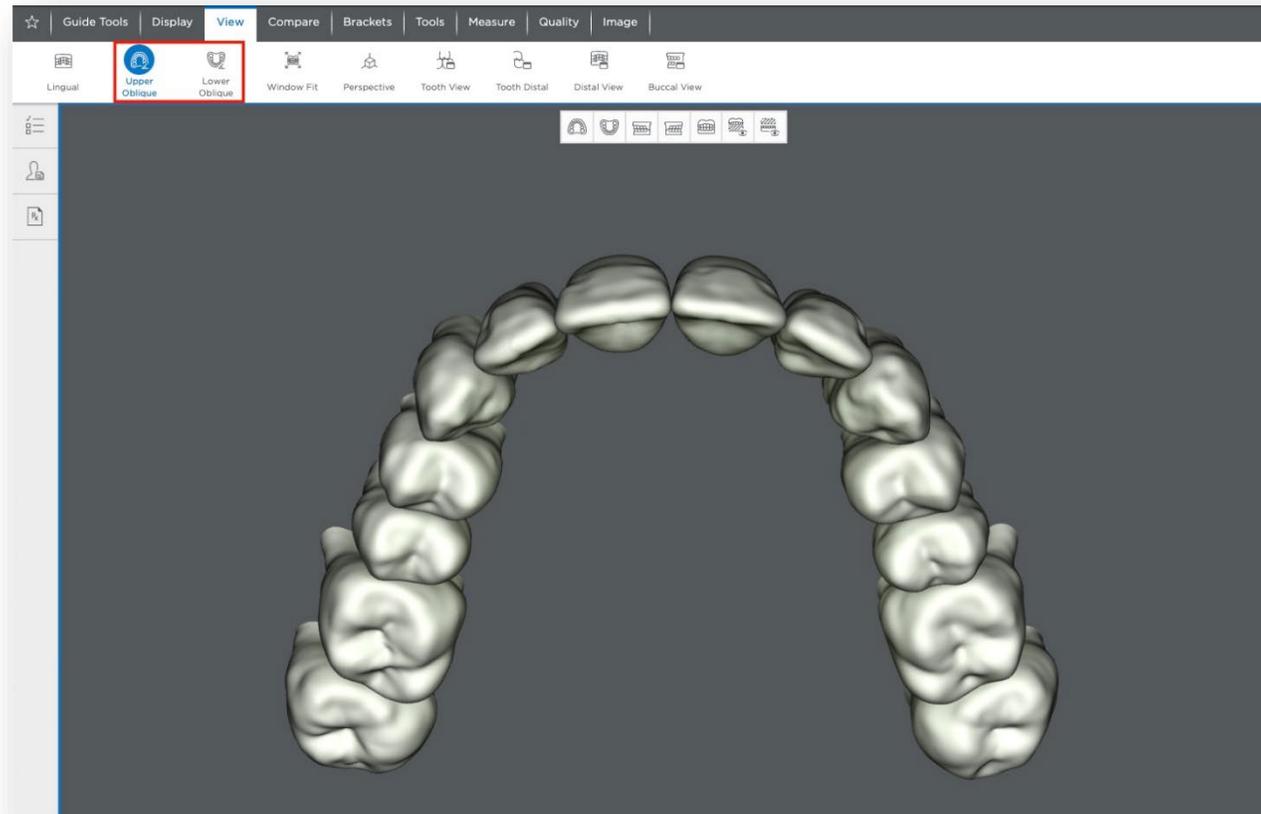


# Clinical Considerations: Arch Alignment



# Clinical Considerations: Anterior Alignment

1. Refer to the therapeutic photos as a reference
2. Compare 3D setup to photos
3. Use Upper/Lower Oblique views to confirm that rotation and torque alignments are appropriate

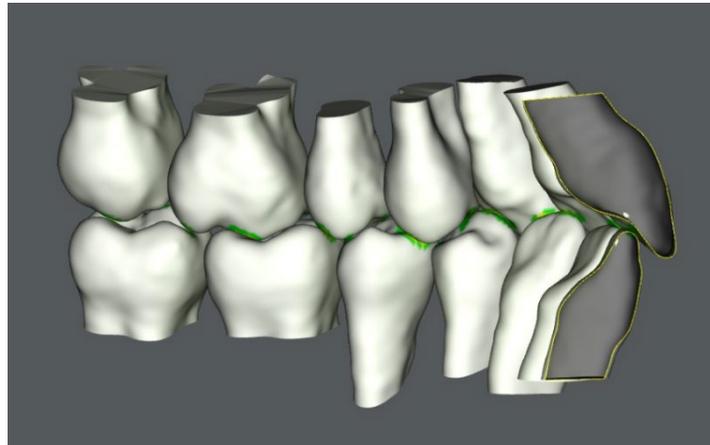
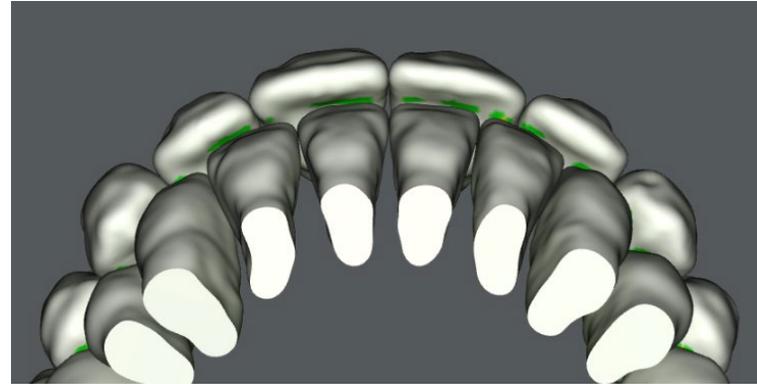


Remember the “Social Six”

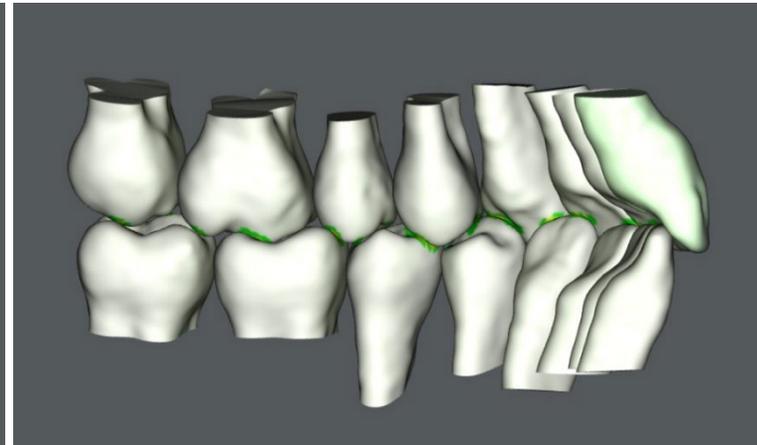
# Clinical Considerations: Overjet

Use anterior OJ oblique view and refer to OJ photos if present  
Compare the 3D setup to the photos

OJ Alignment Evaluation



Show/Hide Clipping Plane Tool



Distal Tooth View Tool

# Clinical Considerations: IPR & Space Management

To evaluate IPR, use the *Clipping Plane* tool.

IPR values are listed in the Tooth Movements tab, the Buildup/IPR tab, and the IPR Tracking tab.

The screenshot shows the SureSmile Advanced software interface. The 'Clipping Plane' tool is highlighted in the 'Tools' menu. The 3D model shows a dental arch with a clipping plane applied. The 'Tooth Movements' table is visible at the bottom, with the 'Spacing (+) / Intersection (-)' row highlighted in red. A callout box explains that '+' indicates space and '-' indicates IPR. A note states that IPR values indicate planned reduction at the mesial interproximal contact, requiring clinical judgment for distribution.

	4	LL5	LL6	LL7	LL8
mesial (+) / distal (-)	.1	1.1	0.9		
buccal (+) / lingual (-)	3	-0.7	-0.2		
occlusal (+) / gingival (-)	0	1.2	1.0		
Torque facial (+) / lingual (-)	-3				
Ang. mesial (+) / distal (-)	4			-7	
Rot. mesial (+) / distal (-)	-5	3	-3		
Spacing (+) / Intersection (-)	0.4	-0.2	-0.2	-0.1	-0.2

**Note:** IPR values indicate planned reduction at the mesial interproximal contact. Clinical judgment must be used to determine how the reduction is distributed between the tooth and adjacent mesial tooth.

# Clinical Considerations: Global Class Correction

Translation [mm]      Rotation [deg]       Malocclusion Includes Max. / Mand. Alignment Adjustments

U			U
L	1.5		L
	l (+)   a (+)   o (+)	g (+)   cw (+)   l (+)	
	r (-)   p (-)   g (-)	o (-)   ccw (-)   r (-)	
	Translation [mm]	Rotation [deg]	

Use Common Rotation Axis    Sync U/L    Use Condyle Axis  

Horizontal incl. AP    

Facial Axis Inclination    

Global Registration    Occlusal Plane    Wire    Buildup / IPR    IPR Tracking    Measurements    Order

1.5 mm of Class II mechanics simulation

Translation [mm]      Rotation [deg]       Malocclusion Includes Max. / Mand. Alignment Adjustments

U			U
L	-0.8		L
	l (+)   a (+)   o (+)	g (+)   cw (+)   l (+)	
	r (-)   p (-)   g (-)	o (-)   ccw (-)   r (-)	
	Translation [mm]	Rotation [deg]	

Use Common Rotation Axis    Sync U/L    Use Condyle Axis  

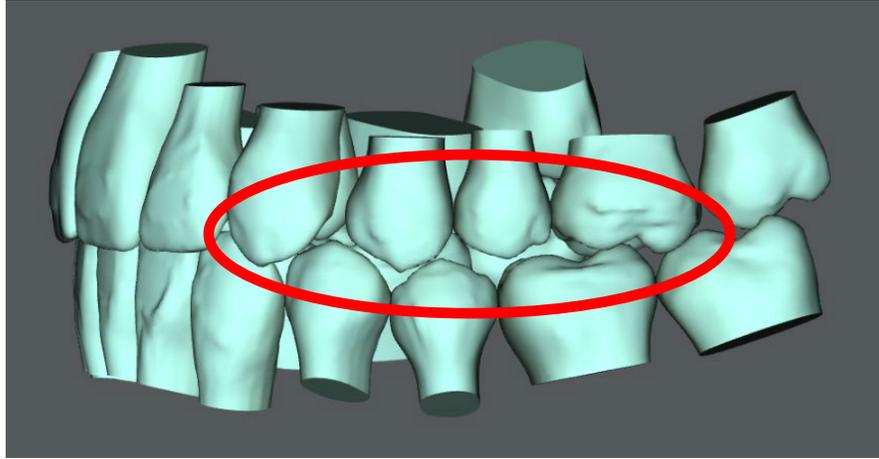
Horizontal incl. AP    

Facial Axis Inclination    

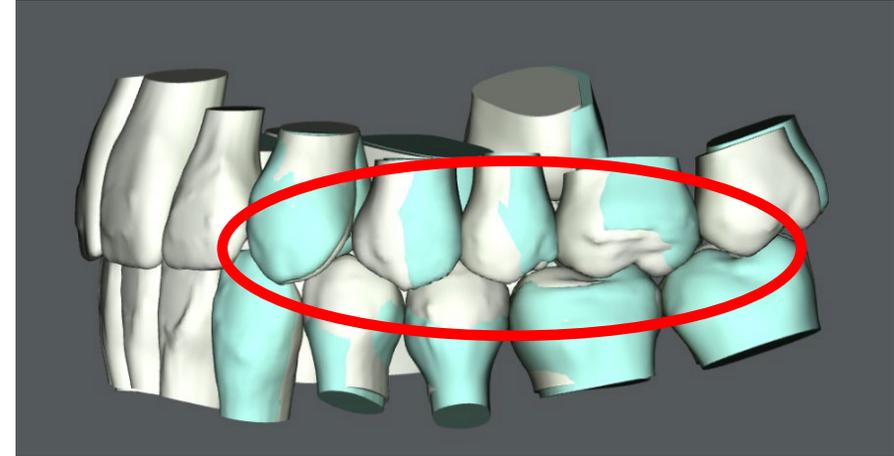
Global Registration    Occlusal Plane    Wire    Buildup / IPR    IPR Tracking    Measurements    Order

-0.8 mm of Class III mechanics simulation

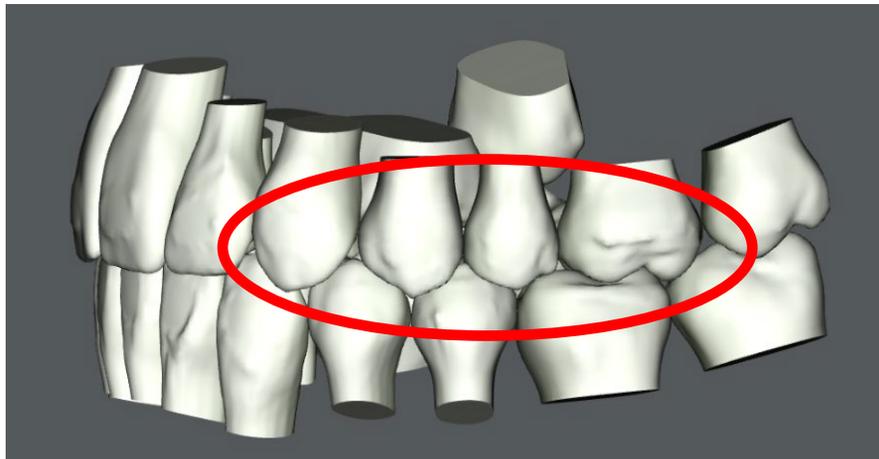
# Clinical Considerations: Dental Class Correction



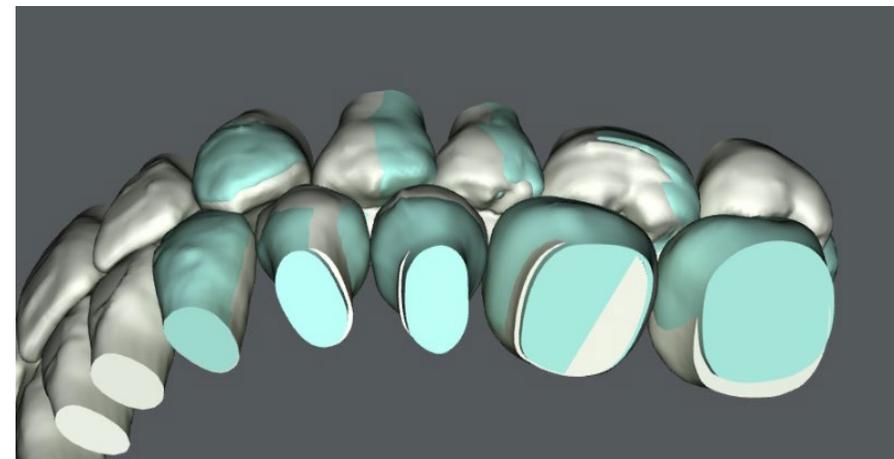
Malocclusion



Display both sets of teeth to evaluate dental correction



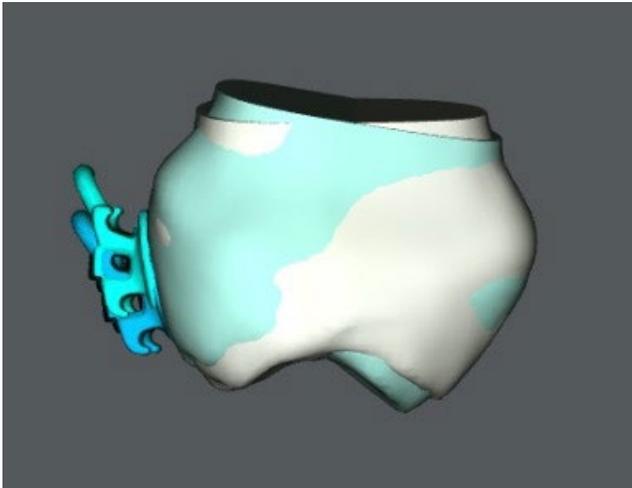
Class improvement done with angulations, rotations, and dental A/P correction



View model from different angles to evaluate dental correction

# Clinical Considerations: Torque Compensation

## Tooth Coordinate System



Movements relative to center of crown

Lingual crown torque → relative extrusion of bracket  
 Buccal crown torque → relative intrusion of bracket

Software interface showing torque compensation settings for a tooth.

**Top Screenshot:**

Upper / Lower	UR8	UR7	UR6	UR5	UR4	UR3	UR2	UR1	UL1	UL2	UL3	UL4	UL5	UL6	UL7	UL8
mesial (+) / distal (-)																
buccal (+) / lingual (-)																
occlusal (+) / gingival (-)																
Torque facial (+) / lingual (-)			-10													
Ang. mesial (+) / distal (-)																
Rot. mesial (+) / distal (-)																
Spacing (+) / Intersection (-)																

Displacement Type:  Tooth  Bracket  Cusp Tip

Functions: Clear Spaces, Reset, Midline Offset, Align Front (2-2, 3-3, 4-4), Keep Midline

**Bottom Screenshot:**

Upper / Lower	UR8	UR7	UR6	UR5	UR4	UR3	UR2
mesial (+) / distal (-)			0.2				
buccal (+) / lingual (-)			-0.3				
occlusal (+) / gingival (-)			1.2				
Torque facial (+) / lingual (-)			-10				
Ang. mesial (+) / distal (-)			1				
Rot. mesial (+) / distal (-)			1				
Spacing (+) / Intersection (-)							

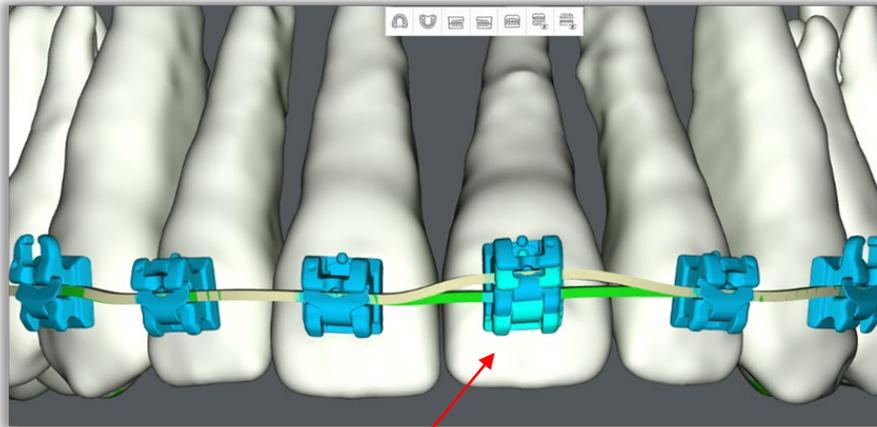
Displacement Type:  Tooth  Bracket  Cusp Tip

Functions: Clear Spaces, Reset, Midline Offset, Align Front (2-2, 3-3, 4-4), Keep Midline

**Callout:** 1.2 mm of relative extrusion due to the lingual crown torque being applied from Tooth Displacements

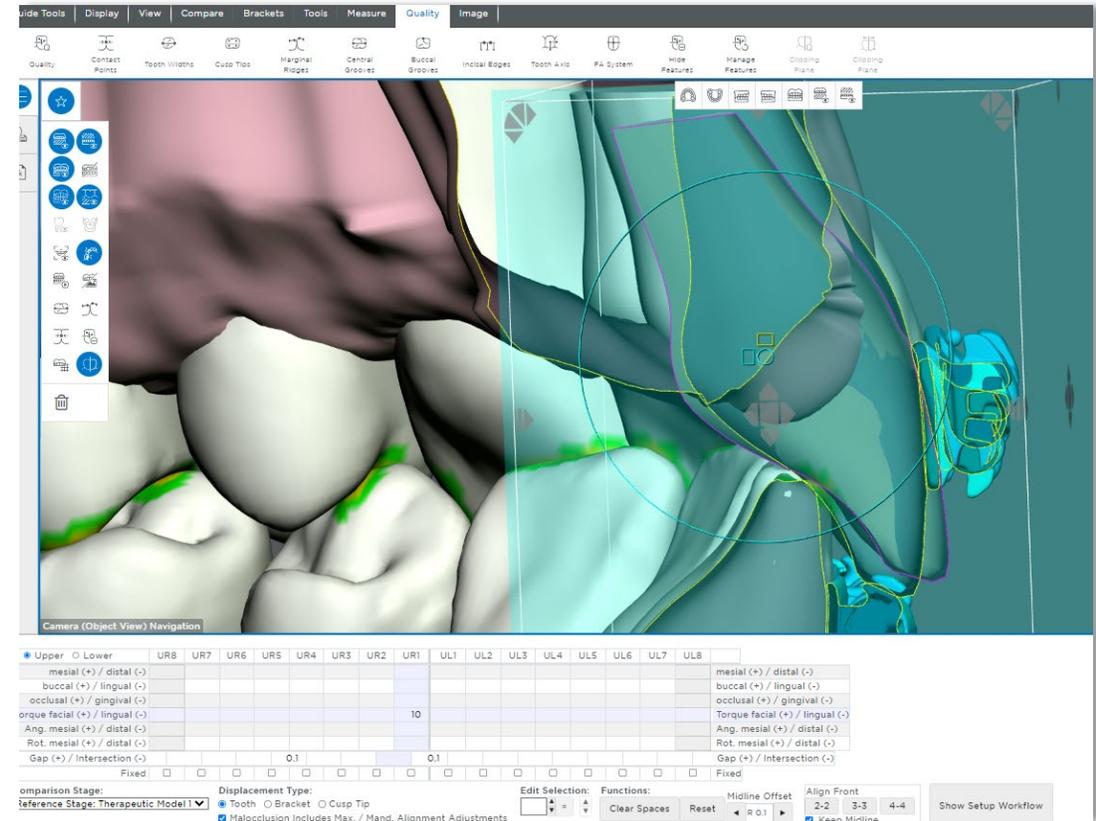
# Clinical Considerations: Torque Compensation

## Tooth Coordinate System



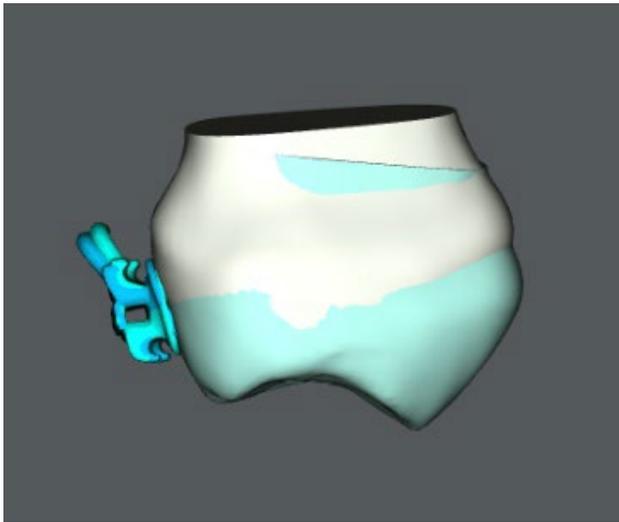
Labial Tip	Relative intrusion
Lingual Tip	Relative Extrusion
Coordinate System	Tooth

Movements relative to center of crown



# Clinical Considerations: Torque Compensation

## Bracket Coordinate System



Movements relative to center of bracket slot

Upper	Lower	UR8	UR7	UR6	UR5	UR4	UR3	UR2	UR1	UL1	UL2	UL3	UL4	UL5	UL6	UL7	UL8	
mesial (+) / distal (-)				0.1														mesial (+) / distal (-)
buccal (+) / lingual (-)				0.4														buccal (+) / lingual (-)
occlusal (+) / gingival (-)				-1.1														occlusal (+) / gingival (-)
Torque facial (+) / lingual (-)				-10														Torque facial (+) / lingual (-)
Ang. mesial (+) / distal (-)				-1														Ang. mesial (+) / distal (-)
Rot. mesial (+) / distal (-)				-1														Rot. mesial (+) / distal (-)
Spacing (+) / Intersection (-)				-0.1														Spacing (+) / Intersection (-)
Do not move																		Do not move

Comparison Stage: Reference Stage: Plan 2 [1.1 Practice] Displacement Type:  Tooth  Bracket  Cusp Tip

Malocclusion Includes Max. / Mand. Alignment Adjustments

Align Front: 2-2 3-3 4-4 Keep Midline

Global Registration Occlusal Plane Wire Buildup

Upper	Lower	UR8	UR7	UR6	UR5	UR4	UR3	UR2										
mesial (+) / distal (-)																		mesial (+) / distal (-)
buccal (+) / lingual (-)																		buccal (+) / lingual (-)
occlusal (+) / gingival (-)																		occlusal (+) / gingival (-)
Torque facial (+) / lingual (-)																		Torque facial (+) / lingual (-)
Ang. mesial (+) / distal (-)																		Ang. mesial (+) / distal (-)
Rot. mesial (+) / distal (-)																		Rot. mesial (+) / distal (-)
Spacing (+) / Intersection (-)																		Spacing (+) / Intersection (-)
Do not move																		Do not move

Comparison Stage: Reference Stage: Plan 2 [1.1 Practice] Displacement Type:  Tooth  Bracket  Cusp Tip

Malocclusion Includes Max. / Mand. Alignment Adjustments

Align Front: 2-2 3-3 4-4 Keep Midline

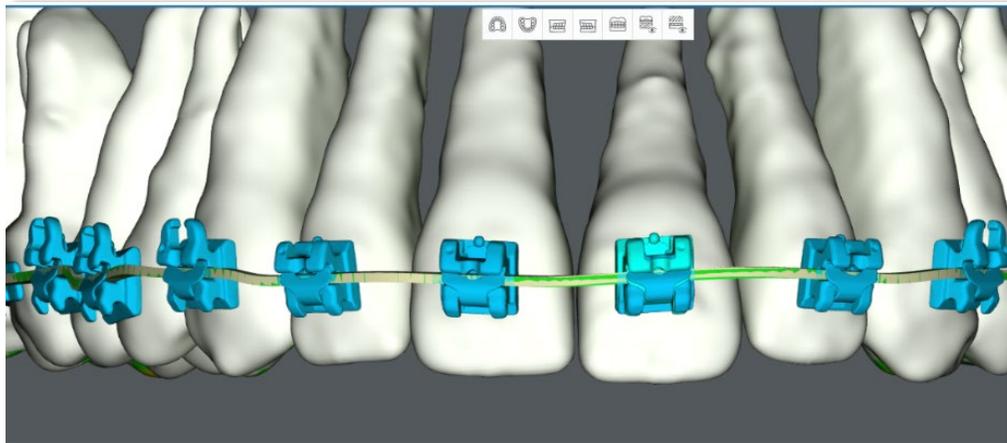
Global Registration Occlusal Plane Wire Buildup / IPR Measurements Order

No extrusion due to the lingual crown torque being applied from Bracket Displacements

When torquing a tooth using the Bracket Displacement option the tooth rotates around the bracket, and no intrusion or extrusion of the bracket occurs.

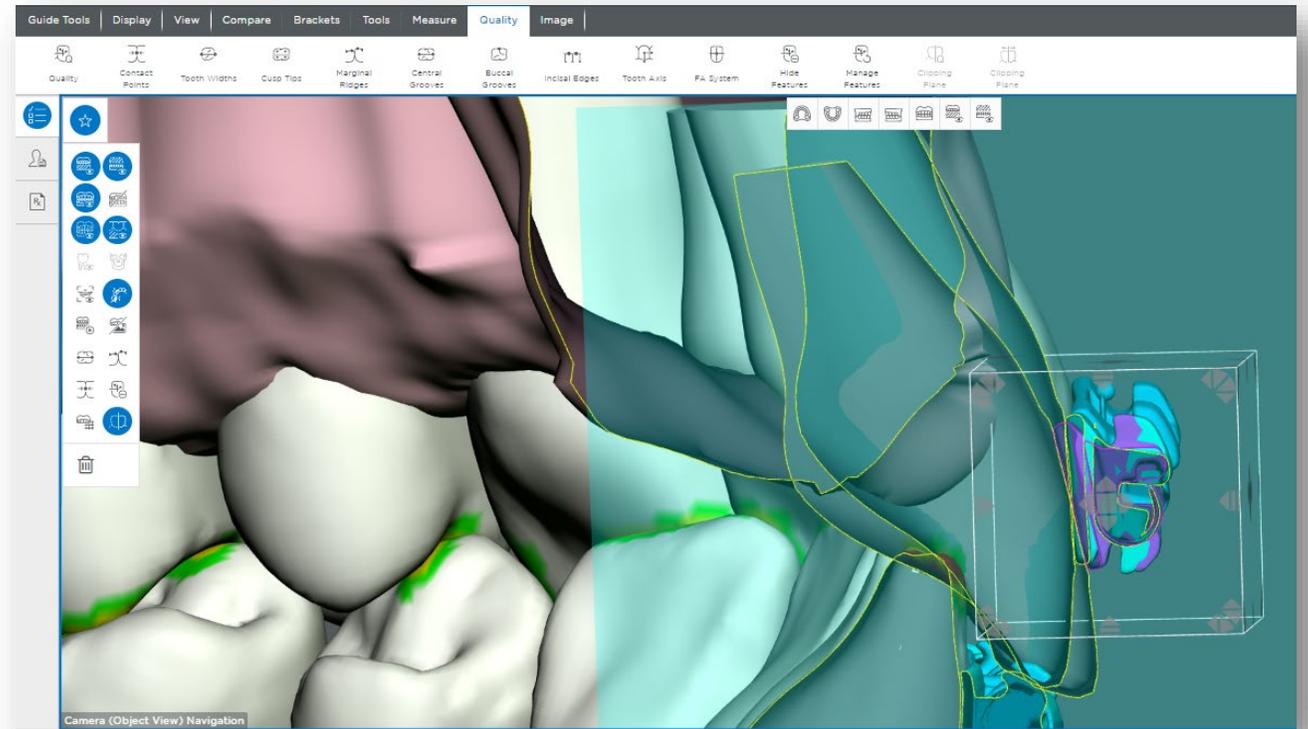
# Clinical Considerations: Torque Compensation

## Bracket Coordinate System



<b>Labial Torque</b>	<b>Vertically maintained</b>
<b>Lingual Tip</b>	Vertically maintained
<b>Coordinate System</b>	Bracket

Movements relative to center of bracket slot



# Tooth Displacements vs. Bracket Displacements

Occlusal/gingival and buccolingual movements can be assessed from the Tooth Coordinate System

<input checked="" type="radio"/> Upper <input type="radio"/> Lower	UR8	UR7	UR6	UR5	UR4	UR3	UR2	UR1	UL1	UL2	UL3	UL4	UL5	UL6	UL7	UL8	
mesial (+) / distal (-)																	mesial (+) / distal (-)
buccal (+) / lingual (-)																	buccal (+) / lingual (-)
occlusal (+) / gingival (-)																	occlusal (+) / gingival (-)
Torque facial (+) / lingual (-)																	Torque facial (+) / lingual (-)
Ang. mesial (+) / distal (-)																	Ang. mesial (+) / distal (-)
Rot. mesial (+) / distal (-)																	Rot. mesial (+) / distal (-)
Spacing (+) / Intersection (-)																	Spacing (+) / Intersection (-)
Do not move	<input type="checkbox"/>	Do not move															

**Comparison Stage:**  
Reference Stage: Therapeutic Model 1

**Displacement Type:**  
 Tooth  Bracket  Cusp Tip  
 Malocclusion Includes Max. / Mand. Alignment Adjustments

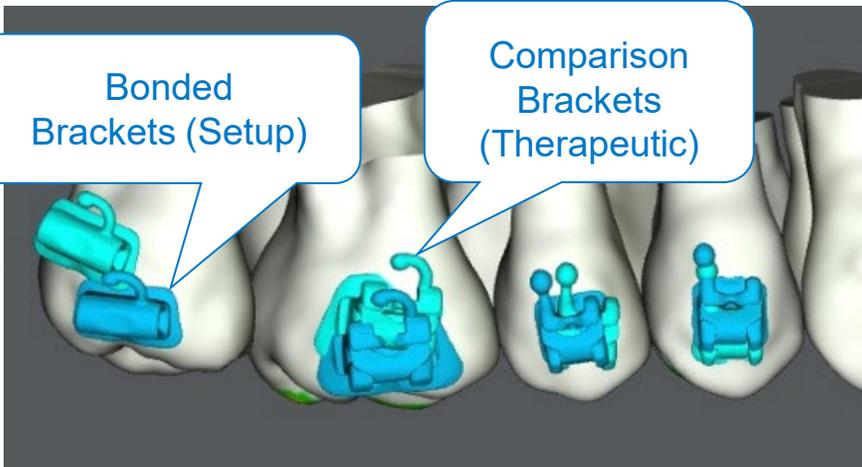
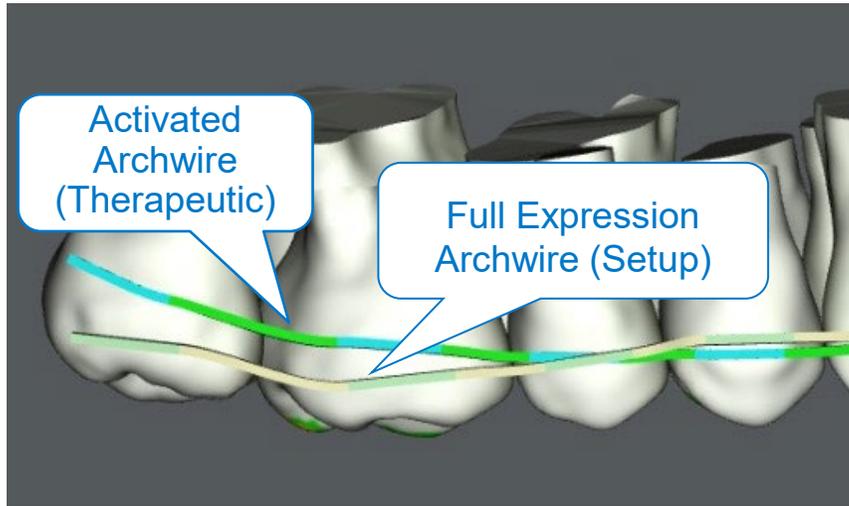
**Edit Selection:**  
[ ] = [ ]

**Functions:**  
Clear Spaces Reset Midline Offset

Align Front  
2-2 3-3 4-4  
 Keep Midline

Torque and angulation correction must be assessed from the Bracket Coordinate System

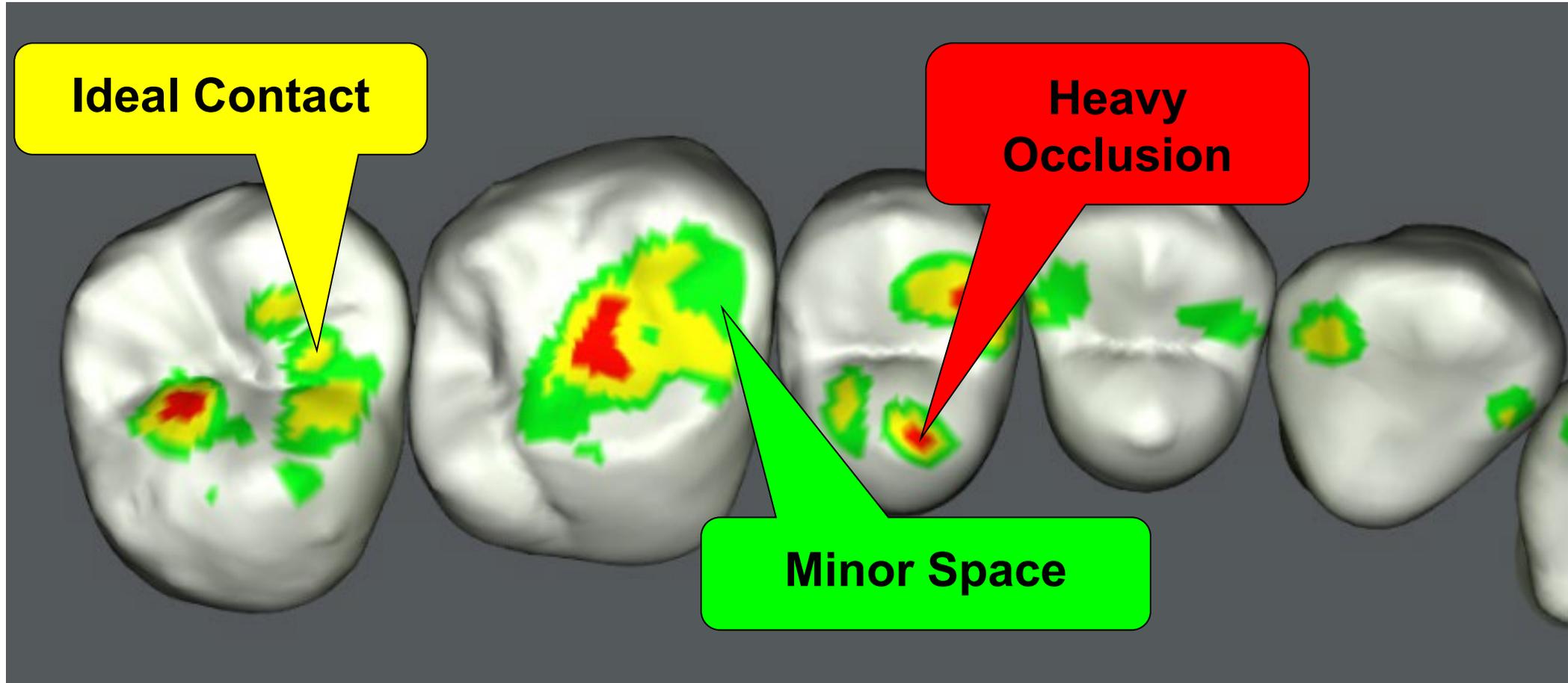
# Clinical Considerations: Reading the Wire



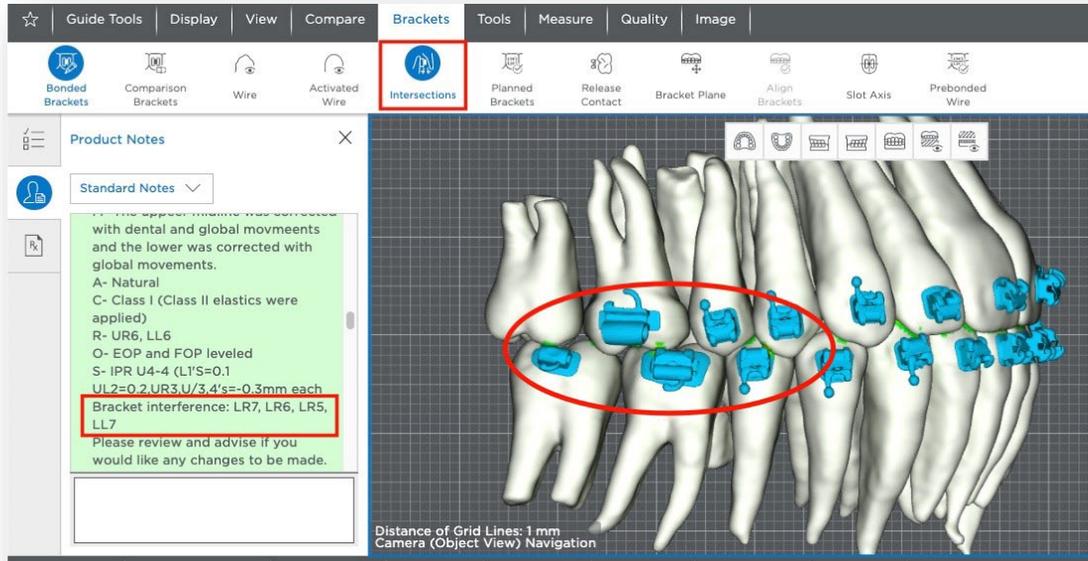
To evaluate vertical and angulation changes, you can use:

1. Activated and setup wires as a reference
2. Comparison and Bonded Brackets as a reference

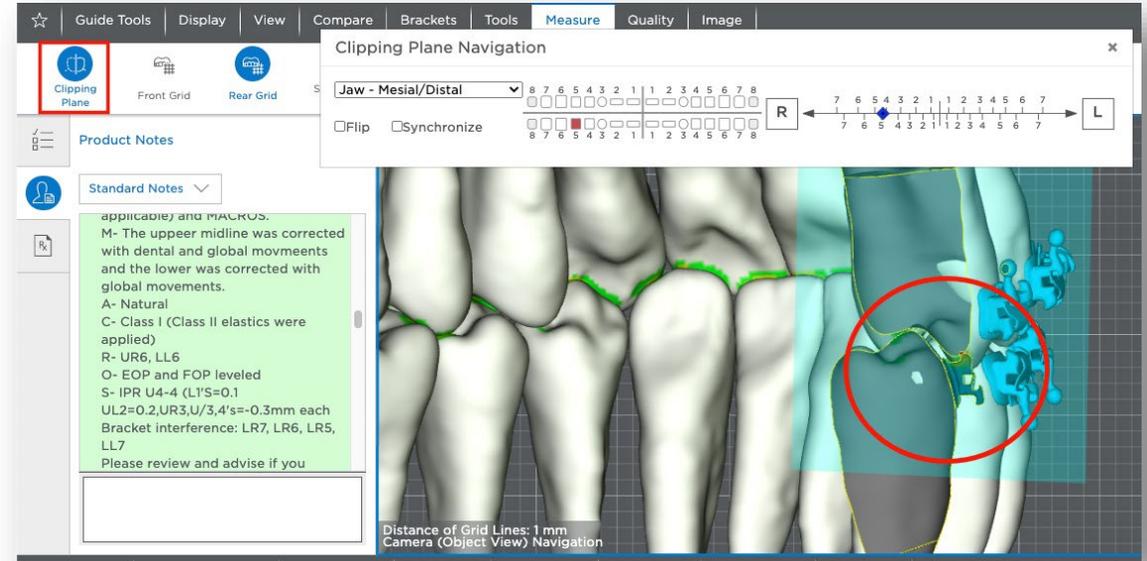
# Clinical Considerations: Occlusal Contacts



# Clinical Considerations: Bracket Interferences



View 1



View 2

When evaluating the setup, look for possible Bracket-Tooth Interferences.

For information about Bracket-Tooth Interferences refer to DL Notes.

To evaluate bracket interferences, select the *Check Wire and Bracket Intersections with Teeth* tool.

# Ordering SureSmile<sup>®</sup> Wires

# SureSmile® Archwires

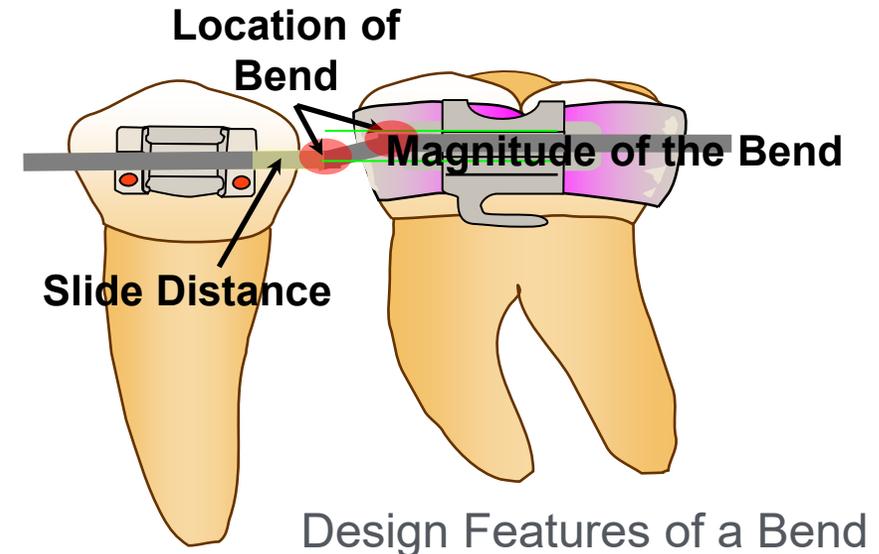
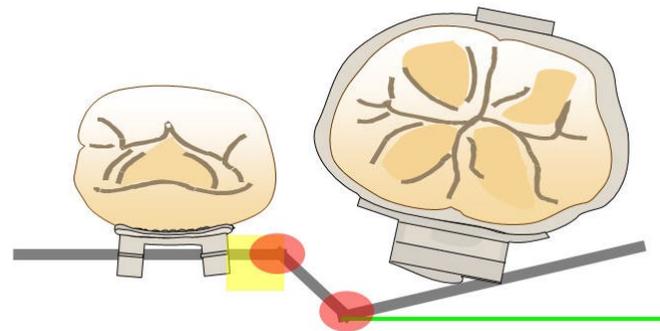
- SureSmile® archwires are custom-bent to the setup (plan) or malocclusion (therapeutic model), as determined by your archwire prescription.
- Additional features (e.g., CoS, RCoS, expansion, constriction) allow you to enhance the effectiveness of the wires, to minimize side effects, and make over-corrections or other anticipated adjustments.

# SureSmile® Archwires

- Before designing SureSmile® archwires you must determine when in the patient's treatment SureSmile® archwires should first be used and whether any overcorrections or other adjustments will need to be made to the wires.

## Design Considerations

- Location of bend
- Magnitude of bend
- Slide distance



# SureSmile® Wire Design Options

1. Full expression archwire (setup wire)
2. Full expression archwires (with overrides):
  - a. Overcorrected archwire
  - b. Undersized archwire
  - c. Limit archwire with passive segment, 0%
  - d. Limit value % archwire (e.g., 75%, 50%, 25%)
  - e. Straight archwire

# SureSmile® Archwire Stiffness Comparison Guide

Stiffness	Type of Material	Cross-Section
Low	Nickel Titanium (NiTi)	.016 round
	NiTi	.016 x .016
	Beta Titanium (Beta-Ti)	.016 round
	Beta-Ti	.016 x .016
	NiTi	.016 x .022
	Beta-Ti	.016 x .022
	NiTi	.017 x .025
	NiTi	.018 x .018
High	NiTi	.019 x .025
	Beta-Ti	.017 x .025
	Beta-Ti	.019 x .025
	Elgiloy	.016 x .022
	Elgiloy	.017 x .025
	Elgiloy	.019 x .025

# Slot Filling Torque vs. Additional Twist

- Slot Filling Torque is used:

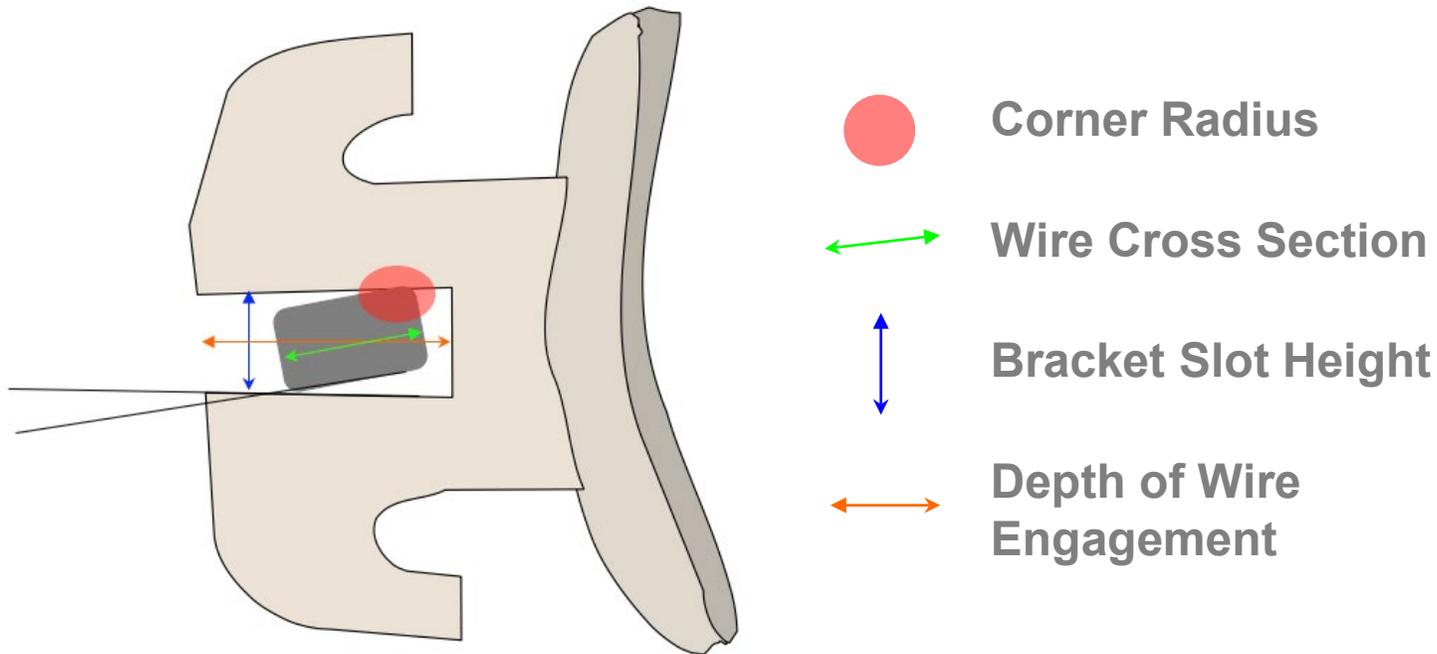
- To compensate for the “slop” of a given wire dimension within the bracket slot

- Additional Twist (torque) is used:

- To correct or overcorrect the torque of an individual tooth or group of teeth
- To compensate for the torquing effects of certain mechanics on certain teeth such as CoS, RCoS, inter-maxillary elastics, or space closure mechanics
- Often helpful in controlling the torque of the terminal molar where the control or effect of the archwire may be diminished
- To compensate for manufacturing tolerances of the brackets and wires

# Handling Torque Loss in SureSmile<sup>®</sup> Advanced

- In traditional orthodontics, additive bends are used to correct for the combination of bracket/wire slop and tolerances.



Torque Loss as a Function of Wire Size and Corner Radii	
.018 Slot	Corner Radius (range .002 to .005)
.016 X .016	Range 15° to ∞
.016 X .022	Range 9° to 14°
.017 X .025	Range 5° to 7°
.022 Slot	Corner Radius (range .002 to .005)
.017 X .025	Range 15° to 22°
.019 X .025	Range 10° to 15°

# Handling Torque Loss in SureSmile® Advanced

□ For torque loss as a function of wire size, use the automatic slot filling – lingual or labial torque options.

● Upper ○ Lower	UR8	UR7	UR6	UR5	UR4	UR3	UR2	UR1	UL1	UL2	UL3	UL4	UL5	UL6	UL7	UL8	
Insert wire beginning at tooth ..	<input type="checkbox"/>	Insert at ..															
Automatic Slot Filling / Lingual Torque	<input type="checkbox"/>	Lingual Fill															
Automatic Slot Filling / Facial Torque	<input type="checkbox"/>	Facial Fill															
Filling Torque Facial (+) / Lingual (-)																	Fill Torque
Straight	<input type="checkbox"/>	Straight															
buccal (+) / lingual (-)																	bucc. / ling.
occlusal (+) / gingival (-)																	occl. / ging.
Torque facial (+) / lingual (-)																	Torque
Angulation mesial (+) / distal (-)																	Angulation
Rotation mesial (+) / distal (-)																	Rotation
Limit (%)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	Limit

NiTi .019x.025

Simulate Tooth Movements

Show wire for prebonded brackets

Curve of Spee:

Reverse CoS:

Expansion:

Constriction:

Add distal slots:  Right  Left

**Calc Slot Filling Torques**

Edit Selection:  =

Tooth Movements | Global Registration | Wire | IPR Tracking | Order

# Handling Torque Loss in SureSmile® Advanced

- In traditional orthodontics, additive bends are used to compensate for the loss of torque with the use of inter-maxillary elastics.

□ Malocclusion Includes Max. / Mand. Alignment Adjustments

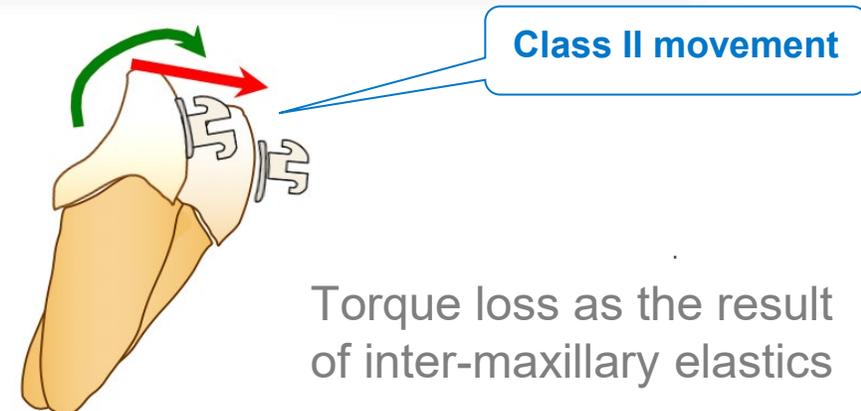
Translation [mm]			Rotation [deg]			
U					U	
	-0.7	1.0			-2.1	
L	l (+)	a (+)	o (+)	g (+)	cw (+)	l (+)
	r (-)	p (-)	g (-)	o (-)	ccw (-)	r (-)
Translation [mm]			Rotation [deg]			

Use Common Rotation Axis    Sync U/L    Use Condyle Axis  

Horizontal incl. AP: 9.2  
Facial Axis Inclination: 1.08

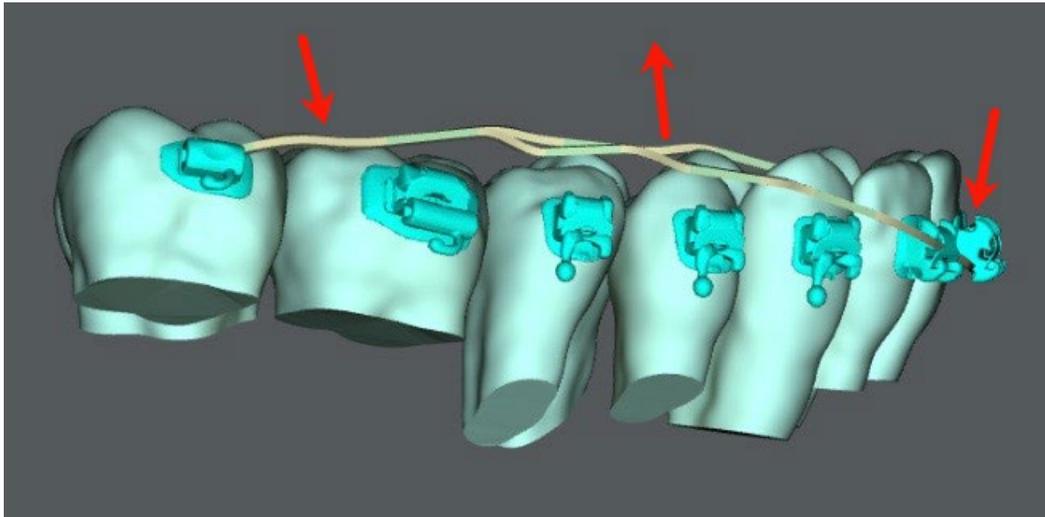
Navigation: Tooth Movements | **Global Registration** | Occlusal Plane | Wire | Buildup / IPR | IPR Tracking | Measurements | Order

To compensate for torque loss as the result of inter-maxillary elastics, SureSmile® uses values of additional torque entered for each tooth in the wire prescription.



# Compensation for Curve of Spee in SureSmile®

- In traditional orthodontics, additive compensatory bends are used to compensate to level a Curve of Spee.
  - For anterior torque loss:
    - in non-extraction cases, lingual slot filling is recommended
    - additional lingual crown torque may be considered
  - For bicuspid torque loss:
    - in non-extraction cases, lingual slot filling may be considered
    - in extraction cases, buccal slot filling may be considered



CuNiTi / NiTi    .017x.025

Simulate Tooth Movements

Show wire for prebonded brackets

Curve of Spee: 4.0

Reverse CoS:

Expansion:

Constriction:

**Add distal slots:**  Right  Left

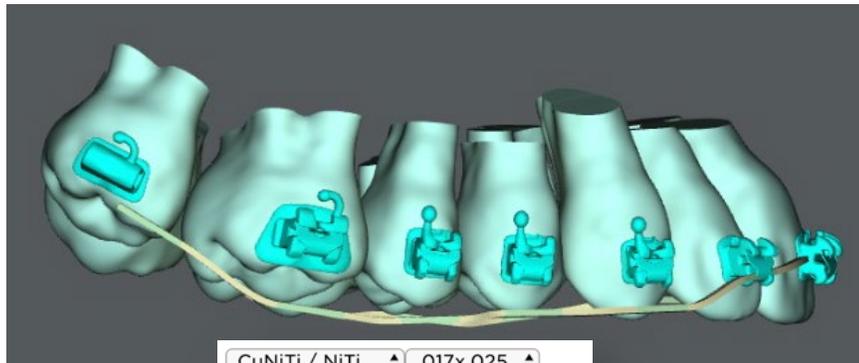
Calc Slot Filling Torques

**Edit Selection:**    =

# Curve of Spee (CoS) & Reverse Curve of Spee (RCoS)

## CoS can be used in the:

- Upper arch where incisor intrusion or bite opening is desired
- Upper arch during anterior retraction and space closure to counteract the extrusive forces of those mechanics on the incisors
- Lower arch where incisor extrusion or bite closure is desired



CuNiTi / NiTi .017x.025

Simulate Tooth Movements

Show wire for prebonded brackets

Curve of Spee: 4.0

Reverse CoS:

Expansion:

Constriction:

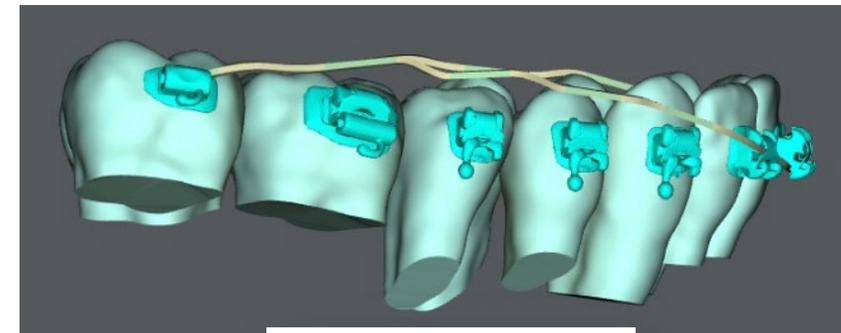
Add distal slots:  Right  Left

Calc Slot Filling Torques

Edit Selection: =

## RCoS Can be used in the:

- Upper arch where incisor extrusion or bite closure is desired
- Lower arch where incisor intrusion or bite opening is desired
- Lower arch during anterior retraction and space closure to counteract the extrusive forces of those mechanics on the incisors



CuNiTi / NiTi .017x.025

Simulate Tooth Movements

Show wire for prebonded brackets

Curve of Spee: 4.0

Reverse CoS:

Expansion:

Constriction:

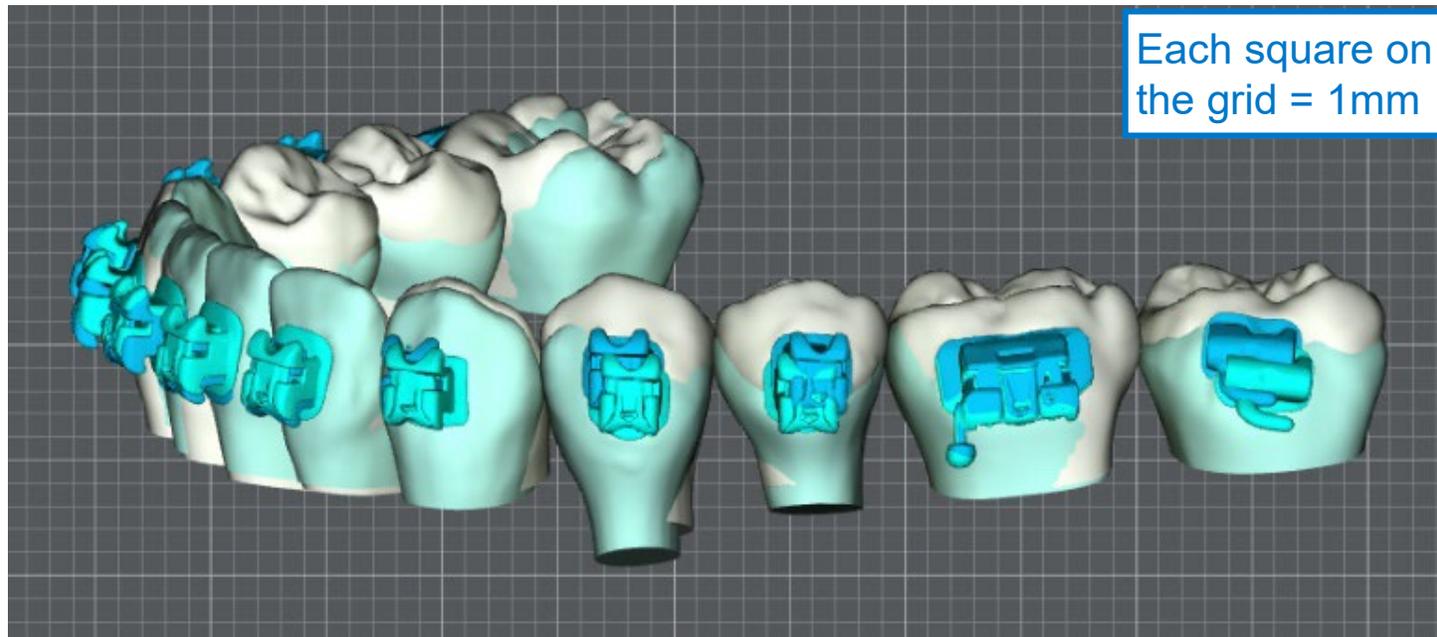
Add distal slots:  Right  Left

Calc Slot Filling Torques

Edit Selection: =

# Applying Curve of Spee/Reverse Curve of Spee

- Determine how much CoS/RCoS to apply to the SureSmile® archwire by overlaying the active model (the plan, shown in white) over the reference model (the therapeutic model, shown in blue).
- Display the grid behind both models and use the grid to gauge how much movement has been applied in the plan.
- You can then apply your clinical judgment and decide if you want to apply additional overcorrection.



# Expansion / Constriction

## Expansion:

- Can be used where arch widening is desired
- Can be used to compensate for the narrowing effects of other mechanics

CuNiTi / NiTi .017x.025

Simulate Tooth Movements

Show wire for prebonded brackets

Curve of Spee:

Reverse CoS:

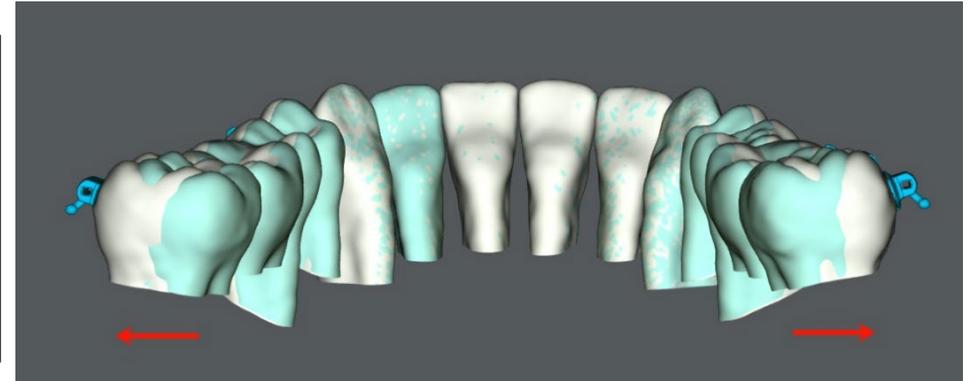
Expansion: 4.0

Constriction:

Add distal slots:  Right  Left

Calc Slot Filling Torques

Edit Selection:  =



Compensation for expansion tipping:  
In SureSmile® Advanced, lingual slot filling torque may be considered for expansion tipping

## Constriction:

- Can be used where arch narrowing is desired
- Can be used to compensate for the widening effects of other mechanics

CuNiTi / NiTi .017x.025

Simulate Tooth Movements

Show wire for prebonded brackets

Curve of Spee:

Reverse CoS:

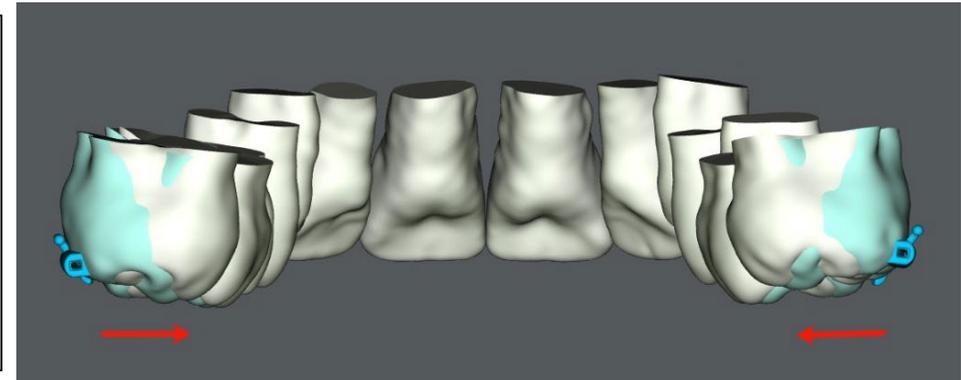
Expansion:

Constriction: 4.0

Add distal slots:  Right  Left

Calc Slot Filling Torques

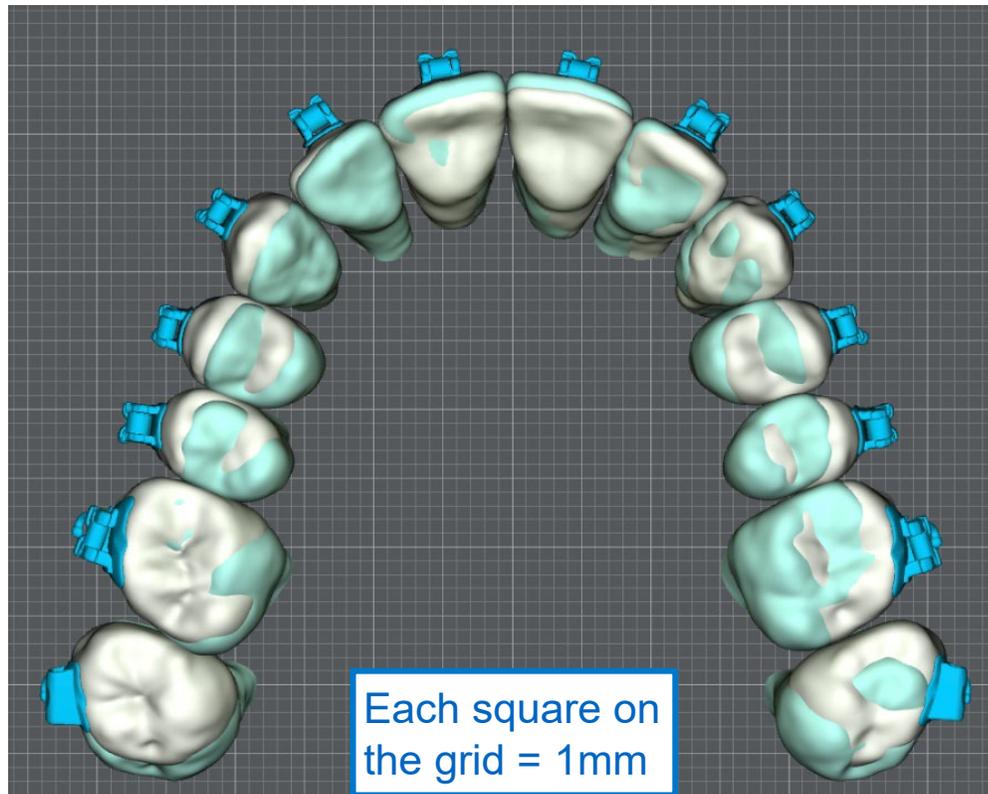
Edit Selection:  =



Compensation for constriction tipping:  
In SureSmile® Advanced, labial slot filling torque may be considered for constriction tipping

# Applying Expansion / Constriction

- Determine how much expansion/constriction to apply to the SureSmile® archwire by overlaying the active model (the plan, shown in white) over the reference model (the therapeutic model, shown in blue) in the 3D viewer.
- Display the grid behind both models and use the grid to gauge how much movement has been applied in the plan.
- The doctor can then apply his/her clinical judgment and decide if he/she wants to apply additional overcorrection.



CuNiTi / NiTi .017x.025

Simulate Tooth Movements

Show wire for prebonded brackets

Curve of Spee: [ ]

Reverse CoS: [ ]

Expansion: 4.0

Constriction: [ ]

Add distal slots:  Right  Left

Calc Slot Filling Torques

Edit Selection: [ ] = [ ]

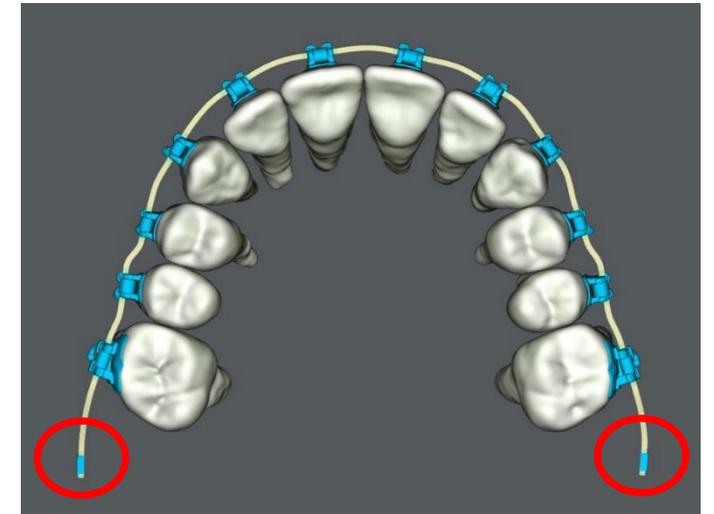
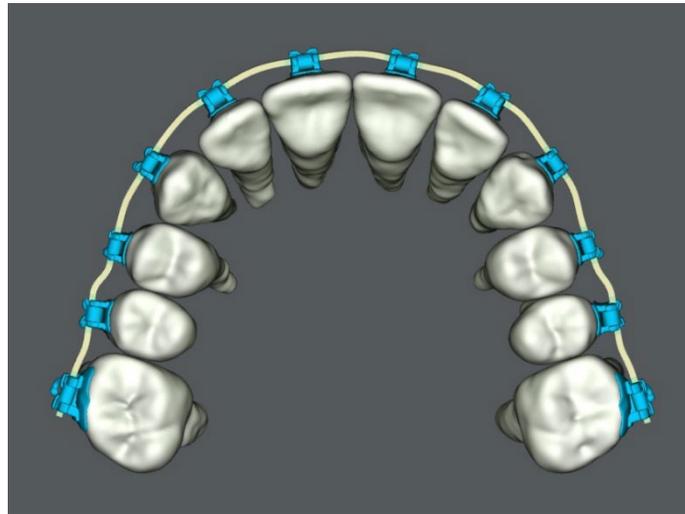
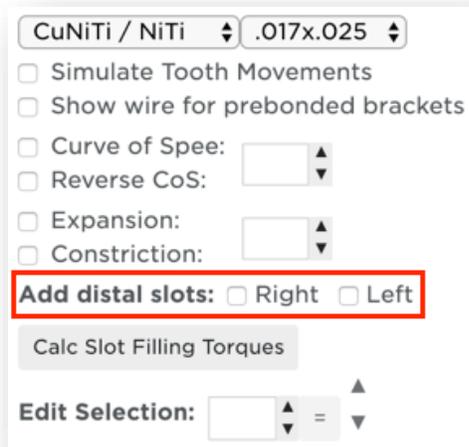
Expansion

Important! When considering additional expansion/constriction, keep in mind that expansion/constriction is applied to the entire arch. For example, if you apply 4.0 mm of expansion, 2.0 mm of expansion is applied to each side of the arch.

# Add Distal Slots in SureSmile® Advanced

Use the *Add distal slots* feature when:

- 7s and/or 8s are not captured in the scan
- 7s and/or 8s erupted mid treatment
- A molar bracket is not yet present in the SureSmile® bracket library



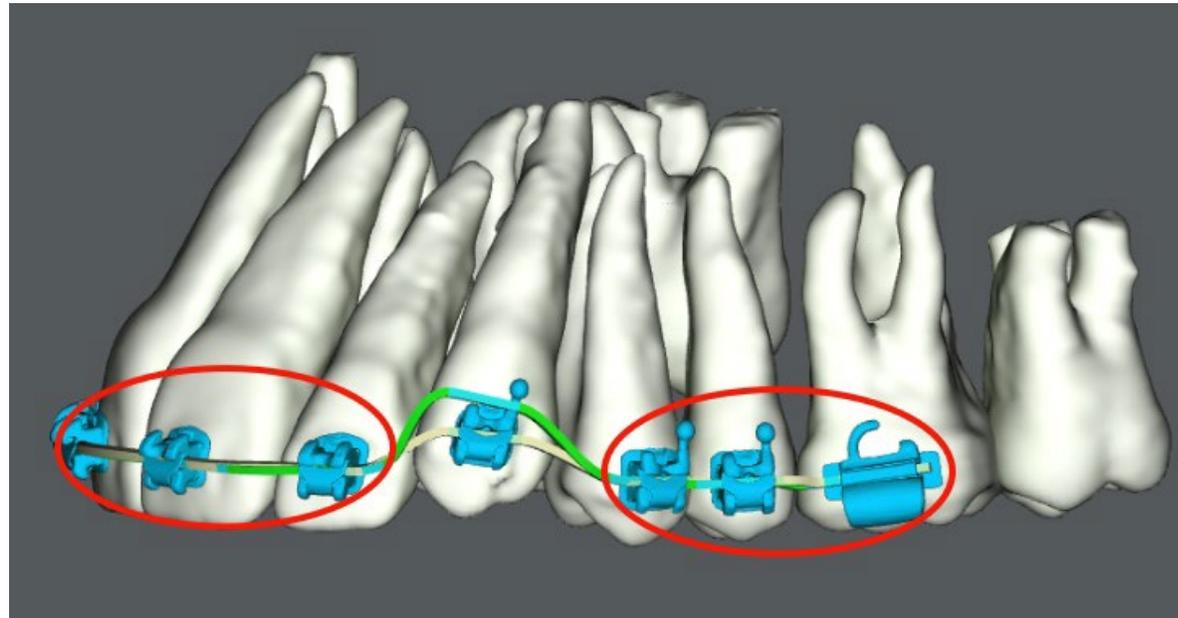
Distal Slots applied

Note: the wire extends straight from the distal of the most distal tooth in the model and does not take into account where the bracket is on the tooth unless an Update scan is ordered.

# SureSmile® Archwire with Passive Segment (0%)

0% bend or segment prescription intended to prevent movement for the following reasons:

- Stabilization archwires in order to maintain the group of the teeth, e.g., periodontally involved
- Maintain the alignment of teeth segment/group
- Increase anchorage



Passive Bends

# Limit Value (%) Wire in SureSmile® Advanced

Limit value (%) wire can be used to limit the movement of certain teeth as part of a treatment plan while other teeth are being corrected

Considerations:

- Difficulty of wire engagement
- Ankylosis
- Root resorption
- Periodontally involved teeth
- Low tolerance to discomfort
- Bracket delamination
- In orthognathic surgery cases where the surgeon does not want any dental compensations to occur so that he/she can surgically correct a deformity and minimize relapse

# Limit Value (%) Wire in SureSmile® Advanced

Wire prescription can be staged in percentages from 100% (full expression) to any percentage of expression, i.e., 75%, 50%, 25%, etc.

Staging can be done tooth by tooth or to the entire wire.

Upper Lower	UR8	UR7	UR6	UR5	UR4	UR3	UR2	UR1	UL1	UL2	UL3	UL4	UL5	UL6	UL7	UL8	
Insert wire beginning at tooth ..	<input type="checkbox"/>	Insert at ..															
Automatic Slot Filling / Lingual Torque	<input type="checkbox"/>	Lingual Fill															
Automatic Slot Filling / Facial Torque	<input type="checkbox"/>	Facial Fill															
Filling Torque Facial (+) / Lingual (-)																	Fill Torque
Straight	<input type="checkbox"/>	Straight															
buccal (+) / lingual (-)																	bucc. / ling.
occlusal (+) / gingival (-)																	occl. / ging.
Torque facial (+) / lingual (-)																	Torque
Angulation mesial (+) / distal (-)																	Angulation
Rotation mesial (+) / distal (-)																	Rotation
Limit (%)	100	100	100	100	100	100	100	100	100	75	100	25	100	100	100	100	Limit

CuNiTi / NiTi .019x.025

Simulate Tooth Movements

Show wire for prebonded brackets

Curve of Spee:

Reverse CoS:

Expansion:

Constriction:

Add distal slots:  Right  Left

Calc Slot Filling Torques

Edit Selection:  =

Tooth Movements
Global Registration
Wire
IPR Tracking
Order

100% = Full Expression archwire (setup wire)

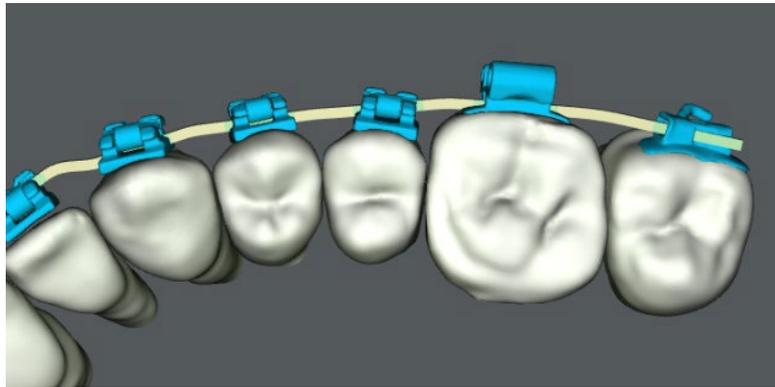
0% = Limit Wire with Passive Segment or Passive wire

100% > Staged Archwire < 0%

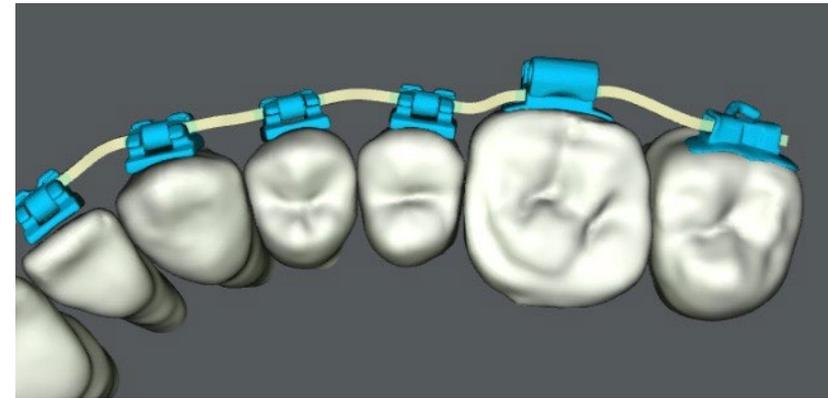


# SureSmile® Advanced Straight Wire

- Allows for easier space closure
- Used before a full expression archwire (setup wire)
- Straight segments in posteriors
- Full expression archwire in anteriors to maintain control and anchorage

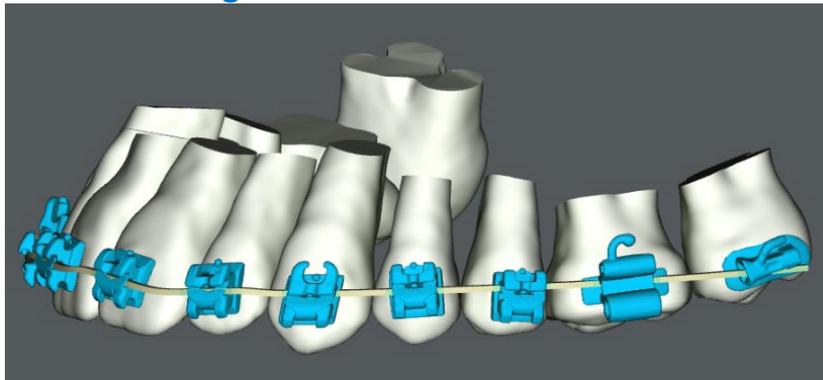


Straight - distal to the canine

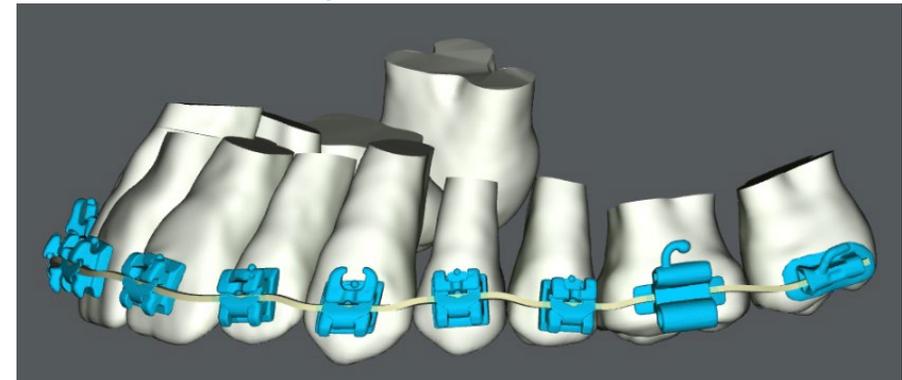


Full expression archwire

View 1

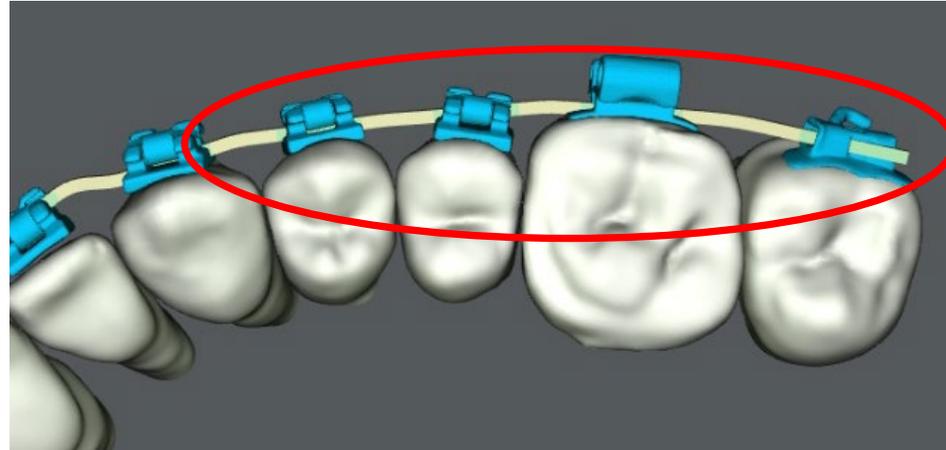


View 2



# SureSmile® Advanced Straight Wire

- Select most mesial tooth in segment, software automatically selects distal teeth
- You can deselect or override values as needed



Straight - distal to the canine

Upper Lower	UR8	UR7	UR6	UR5	UR4	UR3	UR2	UR1	UL1	UL2	UL3	UL4	UL5	UL6	UL7	UL8	
Insert wire beginning at tooth ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Insert at ..									
Automatic Slot Filling / Lingual Torque	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lingual Fill									
Automatic Slot Filling / Facial Torque	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Facial Fill									
Filling Torque Facial (+) / Lingual (-)																	Fill Torque
Straight	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Straight													
buccal (+) / lingual (-)											-1.0	-0.7	-0.2	-0.7	-0.1		bucc. / ling.
occlusal (+) / gingival (-)											-0.5	-0.1	-0.7	-0.3	0.5		occl. / ging.
Torque facial (+) / lingual (-)											-3	-18	-10	-13	-6		Torque
Angulation mesial (+) / distal (-)											-1	2	-3	4	14		Angulation
Rotation mesial (+) / distal (-)											6	-5	13	-7	-1		Rotation
Limit (%)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	Limit

Simulate Tooth Movements  
 Show wire for prebonded brackets  
 Curve of Spee:     
 Reverse CoS:     
 Expansion:     
 Constriction:     
**Add distal slots:**  Right  Left

**Edit Selection:**    =

Tooth Movements
Global Registration
Wire
IPR Tracking
Order

# Archwire Recommendations: Indication of Use

Stiffness	Type of Material	Alignment	Leveling	Archwidth	Torque	Elastics		Stage of Treatment
Low	Nickel Titanium (NiTi)*	✓✓✓	✓✓ (w/ auxiliaries ✓✓✓)	✓ (w/ auxiliaries ✓✓✓)	✓ (w/ auxiliaries ✓✓✓)	✓✓	✓	Early to Final
	Beta Titanium (Beta-Ti)**	✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	Mid to Final
High	Elgiloy**	✗	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	Final

- ✓ = Adequate
- ✓✓ = Recommended
- ✓✓✓ = Highly Recommended

\*Adjustable with virtual pliers (robot) only

\*\*Adjustable with virtual pliers (robot) or by hand tools

# Archwire Recommendations: Space Closure Considerations

Stiffness	Type of Material	Space Closure (1-2mm)	Space Closure (3-4mm)	Archwidth
Low	Nickel Titanium (NiTi)*	✓✓✓ (sliding mechanics)	✓✓ (sliding mechanics with auxiliaries)	✓✓
	Beta Titanium (Beta-Ti)**	✓ (sliding mechanics)	✓✓ (sliding mechanics)	✓✓✓
High	Elgiloy**	✓✓✓ (sliding mechanics)	✓✓✓ (sliding mechanics)	✓

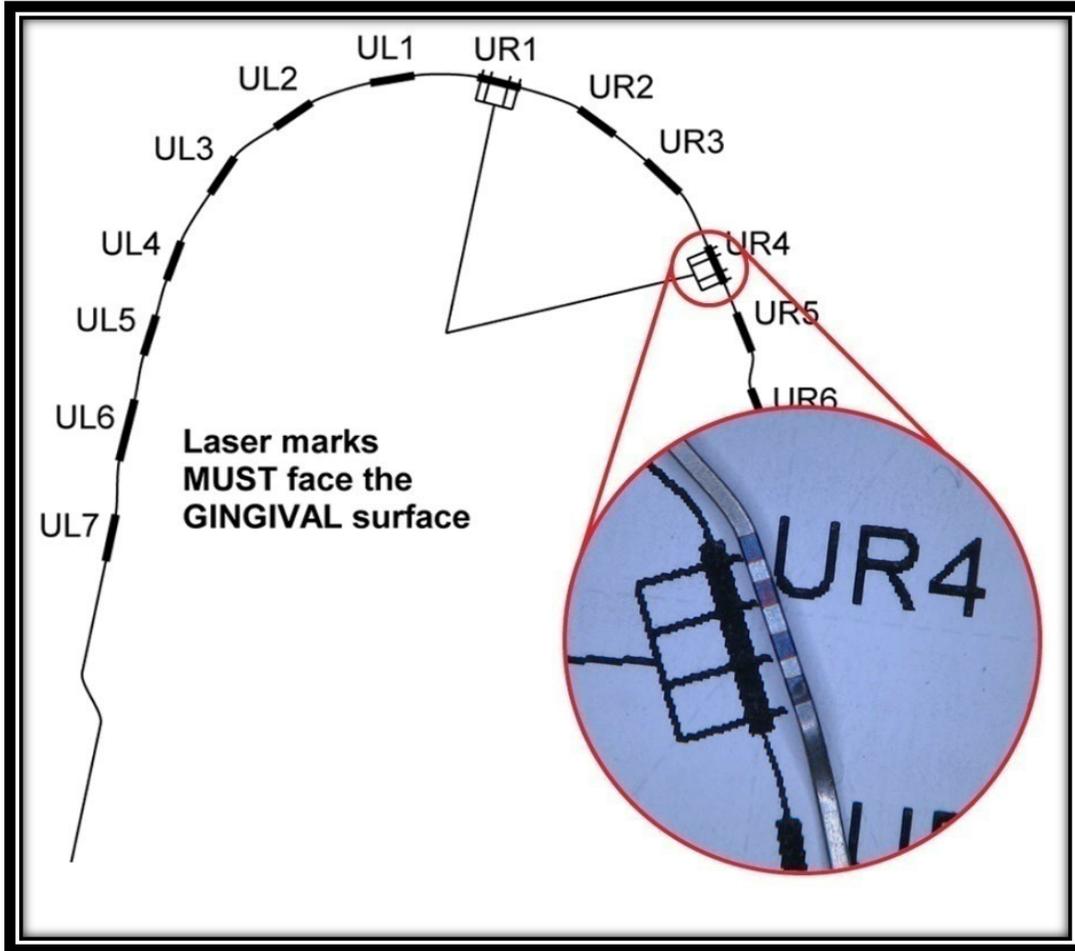
- ✓ = Adequate
- ✓✓ = Recommended
- ✓✓✓ = Highly Recommended

\*Adjustable with virtual pliers (robot) only

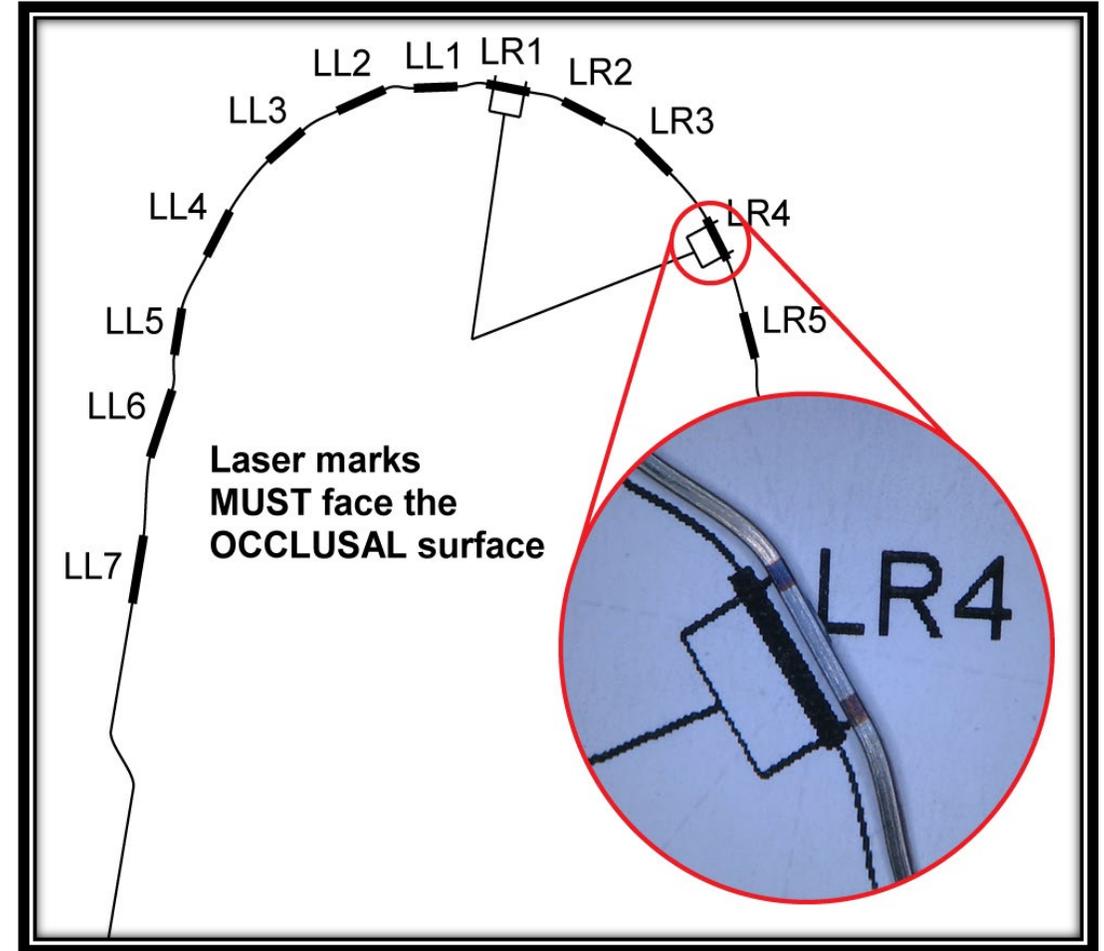
\*\*Adjustable with virtual pliers (robot) or by hand tools



# Wire Insertion and Laser Marks



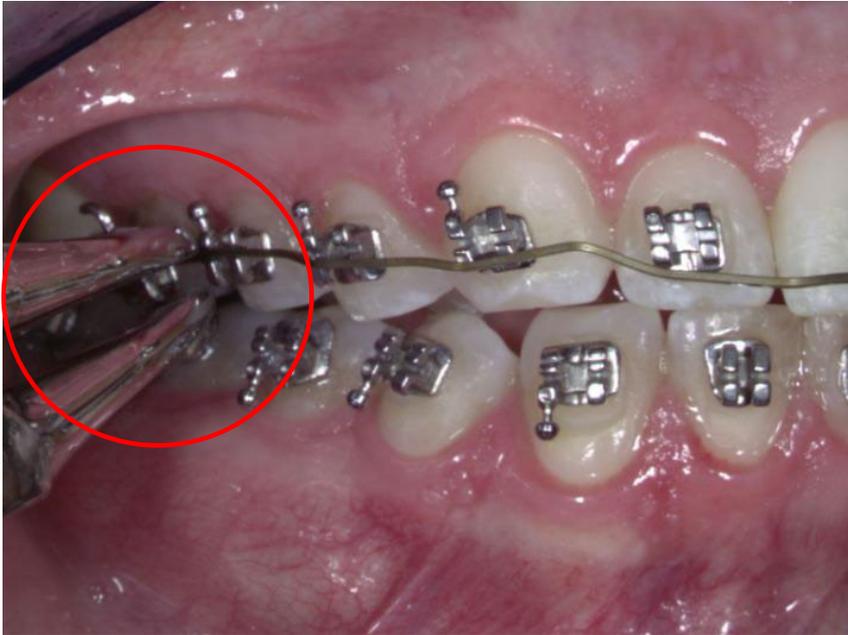
Maxilla



Mandible

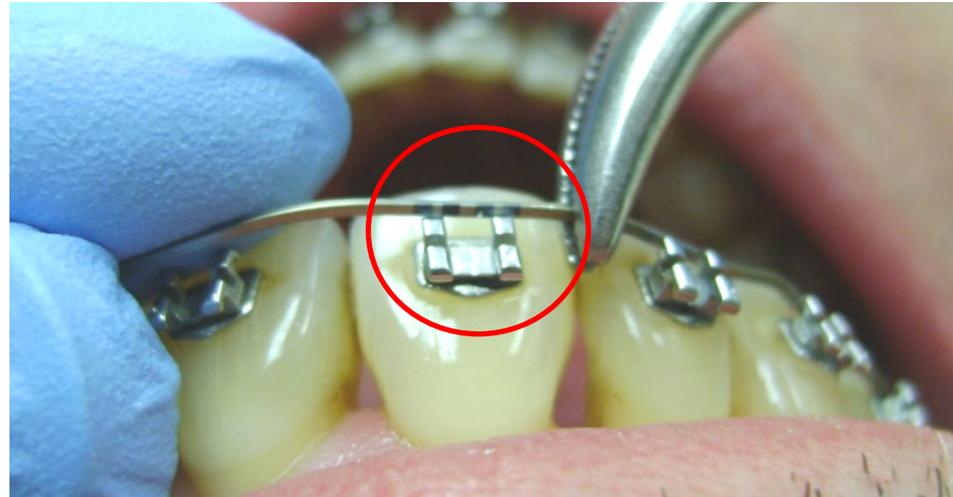
# Wire Insertion

1. Insert wire into tube on one side



2. Position wire using laser marks

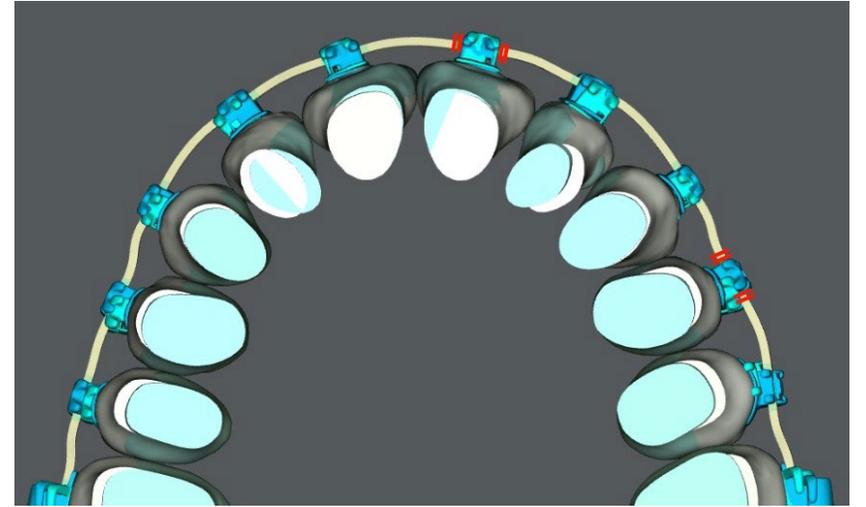
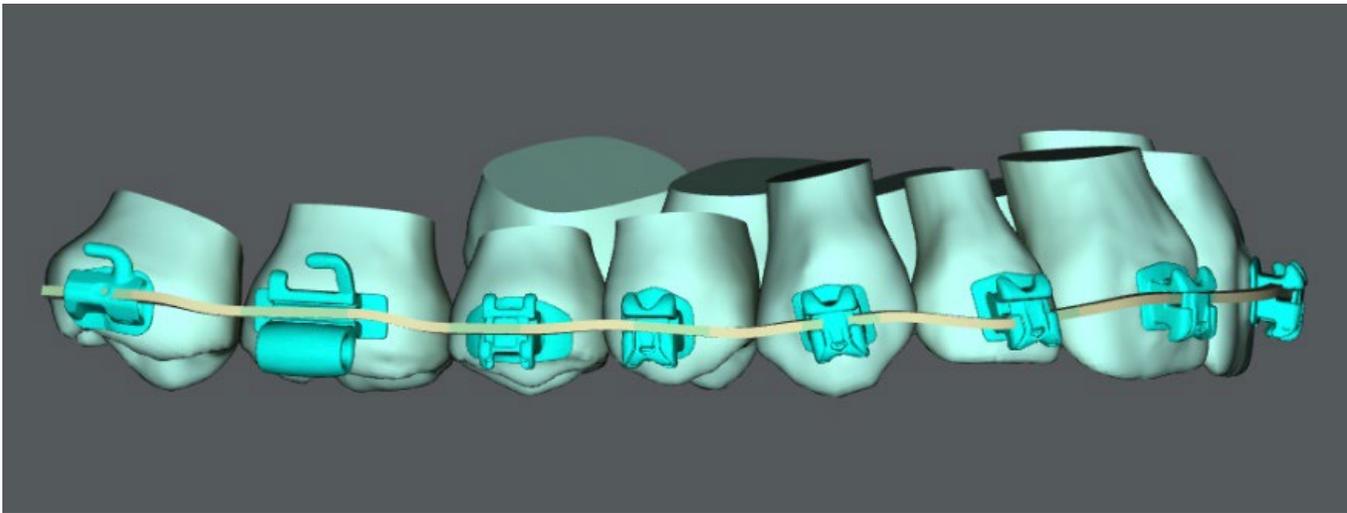
- Use laser markings to check your initial position
  - Upper wire markings face gingival for labial wires
  - Upper wire markings face occlusal for lingual wires
  - Lower wire markings face occlusal
- Engage wire with mark near therapeutic bracket location with room to move to approved setup bracket location



# Wire Insertion

## 3. Refer to 3D model for proper positioning

- Refer to software for positioning
  - Therapeutic model
  - Display wire (full expression wire or setup wire)
- Bends are NEVER in slot
- Brackets ALWAYS on straight segments



# Using Diagnostic Simulations

# Diagnostic Simulations in SureSmile® Advanced

A diagnostic simulation in SureSmile® Advanced is a treatment simulation based on a diagnostic model. The end result of a diagnostic treatment simulation is a 3D model of a patient's treatment objective representing a specific treatment approach. The diagnostic treatment simulation allows you to explore multiple treatment alternatives before deciding on a specific setup prescription. You can create and store numerous treatment simulations for a patient before deciding on a specific treatment plan.

In order to begin a diagnostic simulation, the status of the diagnostic model must be in an *Approved* state. Even though you can also create treatment simulations from an approved therapeutic model, keep in mind that the patient will be in mid-treatment at this point. As a result, you will be more constrained by clinical considerations, since the therapeutic model is the basis for the SureSmile® wire.

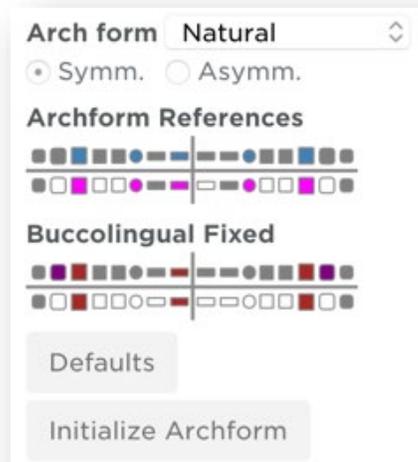
# Setup Workflow Tools

- The Setup Workflow tool enables you to rapidly simulate treatment outcomes that approach the quality of a high fidelity setup.
- The tool uses an integrated workflow with automated tools for basic alignment for all movements except torque.
- It provides an intuitive and workflow guided toolset for setups and simulations.



# Setup Workflow Tools

- Instead of moving teeth manually, you can set several teeth in each arch as reference teeth, and then allow the software to quickly build a treatment simulation for the entire arch based on the position of these reference teeth.
- The automation features allow you to save substantial time, while the integrated workflow ensures a consistent approach to simulate treatment options.



Key to the colors of the teeth in the small tooth crosses:

Color	Meaning
Pink	<ul style="list-style-type: none"> <li>A reference or rotation symmetric tooth</li> </ul>
White	<ul style="list-style-type: none"> <li>Reference tooth cross: Unselected teeth that are available for selection as reference teeth. When you choose another reference tooth, the previous reference tooth turns from pink to white.</li> <li>Fixed tooth cross: Unselected teeth that are available for selection as fixed teeth.</li> </ul>
Dark red	<ul style="list-style-type: none"> <li>A fixed tooth that is also a reference tooth</li> </ul>
Bright red	<ul style="list-style-type: none"> <li>A fixed tooth</li> </ul>
Gray	<ul style="list-style-type: none"> <li>Teeth in the inactive arch</li> <li>Teeth in the active arch that cannot be used as reference or fixed teeth for this kind of movement</li> <li>Teeth that are missing</li> </ul>
Green	<ul style="list-style-type: none"> <li>Teeth that are not available for angulation movements. Green is only used in the Angulation I and Angulation II steps.</li> </ul>
Teal	<ul style="list-style-type: none"> <li>Reference teeth in the inactive arch, or</li> <li>Reference teeth in one angulation step that are consequently unavailable in the other angulation step</li> </ul>
Purple	<ul style="list-style-type: none"> <li>A fixed tooth in the inactive arch</li> </ul>

# Simulating Elastics or Other Global Mechanics

- Simulate elastics and/or other global mechanics on the Global Registration tab. For example, as shown below, you can simulate CII/CIII elastics under Translation [mm] a(+)/p(-) and Midline elastics under Translation [mm] l(+)/r(-) and Rotation [deg] l(+)/r(-).

Midline correction

Translation [mm]			Rotation [deg]				
0.3	1.0				0.9		
L	l (+)	a (+)	o (+)	g (+)	cw (+)	l (+)	L
	r (-)	p (-)	g (-)	o (-)	ccw (-)	r (-)	
Translation [mm]			Rotation [deg]				

Midline correction

Class II correction

Horizontal incl. AP 13.2

Facial Axis Inclination

Malocclusion Includes Max. / Mand. Alignment Adjustments

Reset

Tooth Movements | Global Registration | Occlusal Plane | Wire | Buildup / IPR | IPR Tracking | Measurements | Order

# Archwire Modifications

# Archwire Modifications in SureSmile® Advanced

Why do I need to modify an archwire?

## **Setup Modification Wire (based on treatment simulation):**

To correct setup misalignment missed during the setup review

## **Compensation Wire (based on Progress Model):**

To make corrective adjustments in response to factors not considered in the setup (i.e., mechanics, biological response, etc.)

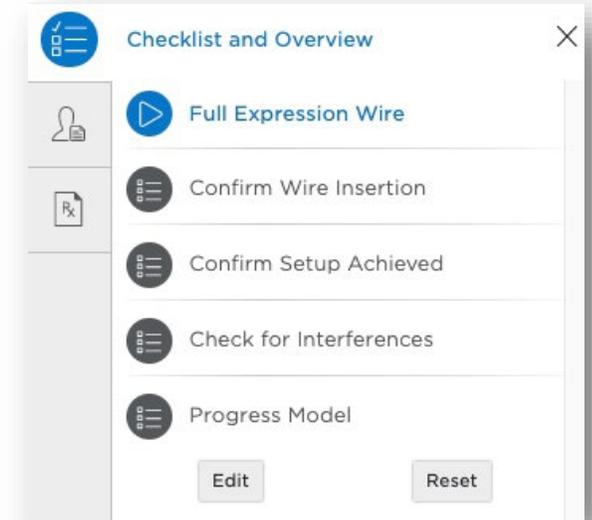
How do I modify an archwire?

Use the SureSmile® progress evaluation checklist to:

- assess issues that may arise after SureSmile® wires have been inserted
- determine what to do next

# Progress Evaluation Checklist

- From the wire design workspace, click the Open Checklist icon  to open the progress evaluation checklist
- Follow checklist steps until option for resolution is determined
- Select applicable option to direct software to appropriate location in SureSmile®
- Checklist shows progress through steps by displaying a check mark next to the steps you have clicked on

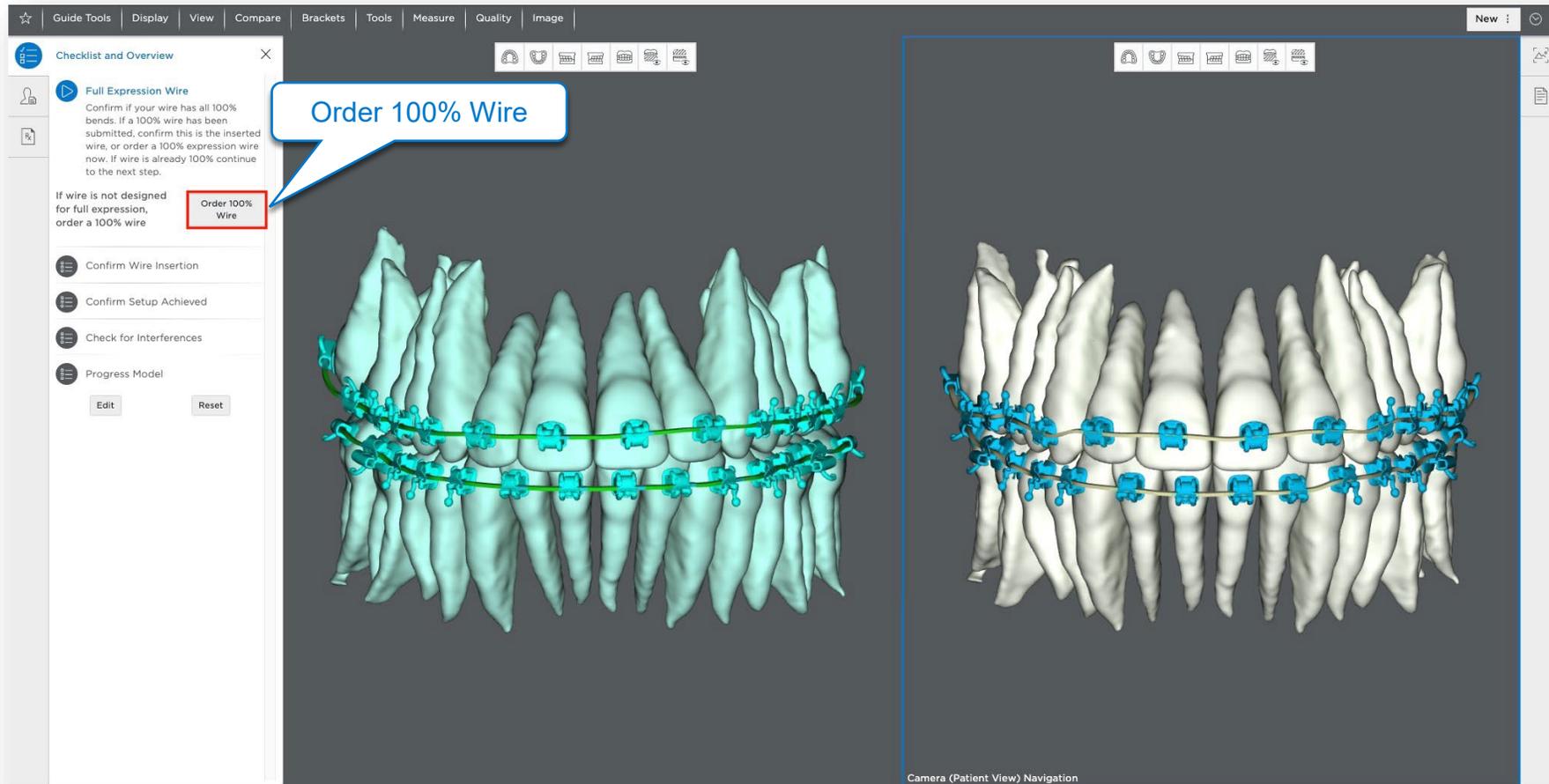


4 or 5 step process:

- Full Expression Wire (only shown if 100% wire has not been ordered)
- Confirm Wire Insertion
- Confirm Setup Achieved
- Check for Interferences
- Progress Model

# Full Expression Wire

- Confirm that inserted wire has all 100% bends. If a 100% wire has been ordered, confirm this is the inserted wire or insert it now. If a 100% wire was ordered, this step will not appear. If you have not ordered a 100% wire, order it now.

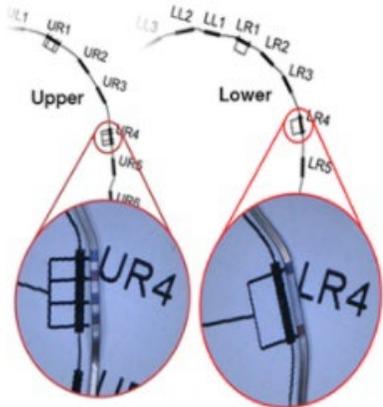


# Confirm Wire Insertion

- Confirm that the wire is seated correctly

**Confirm Wire Insertion**

Confirm that your wire is sitting properly in the brackets. Ensure incisors are lined up with no irregularities. Compare significant bends between wire and 3D model. Confirm each bend's relation to the adjacent bracket. If it is seated properly, continue to the next step.



Confirm Setup Achieved

Check for Interferences

Progress Model

## Upper Wire Marks

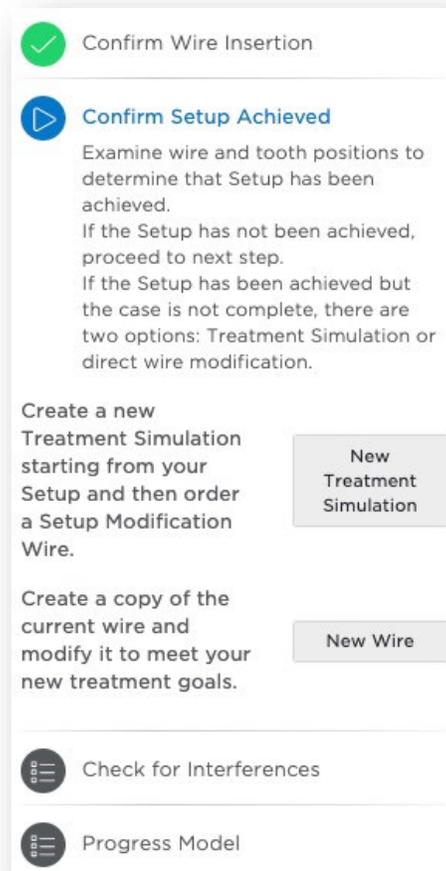
- Patient right
- Labial wires: gingival side of wire
- Lingual wires: occlusal side of wire
- UR1 and UR4
- Double marks

## Lower Wire Marks

- Patient right
- Occlusal side of wire
- LR1 and LR4
- Single marks
- Position the bracket slot between the marks unless a shift or space closure is planned.

# Confirm Setup Achieved

- Examine wire and tooth positions to determine if setup has been achieved. If the setup has not been achieved, proceed to next step. If the setup has been achieved but the case is not complete, there are two options: **Treatment Simulation** or **New Wire**.



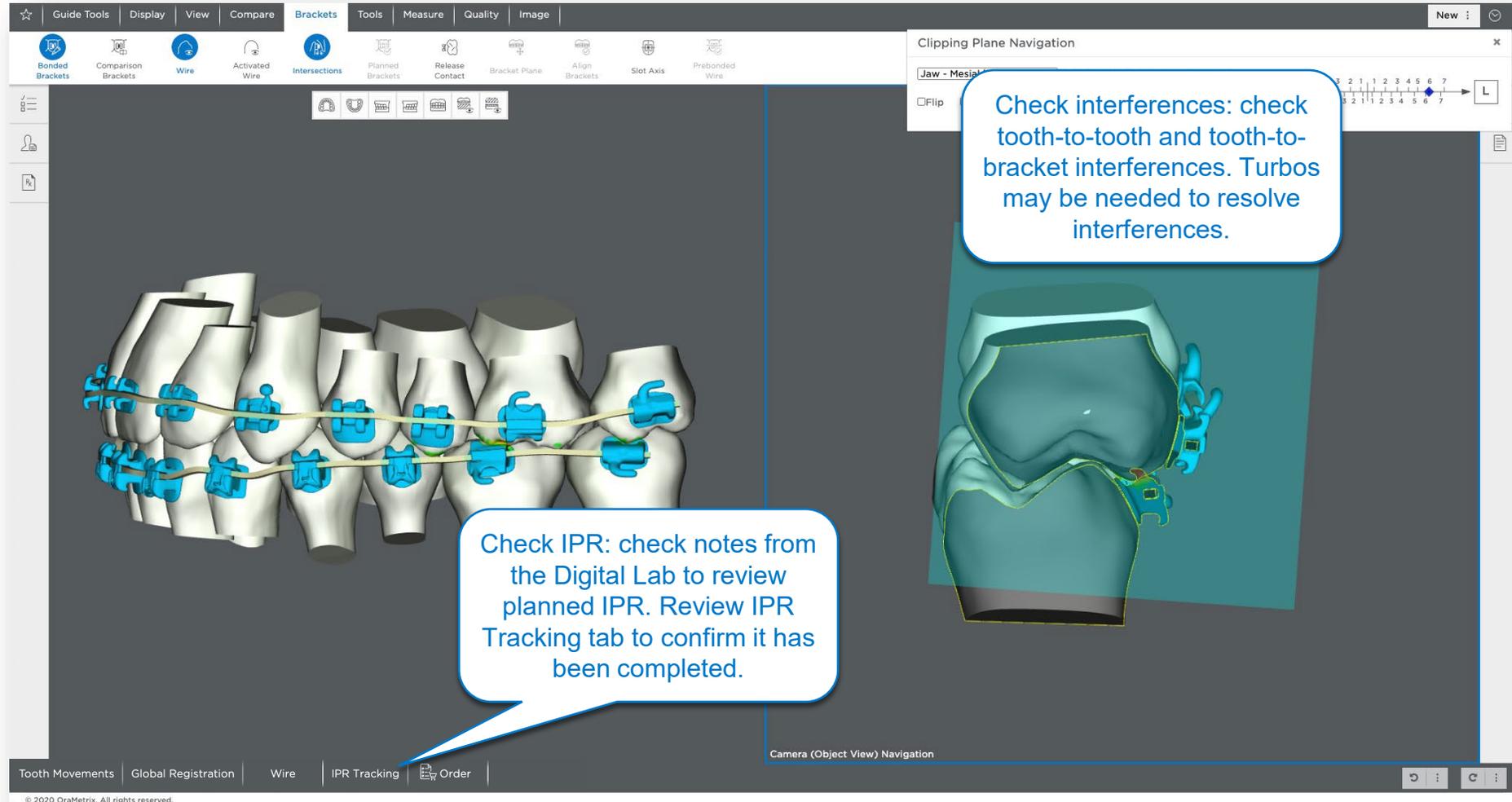
- Create a new treatment simulation starting from your setup and then order a new wire based on the simulation.

OR

- Create a new wire based on the one in use, and modify it to meet your new treatment goals.

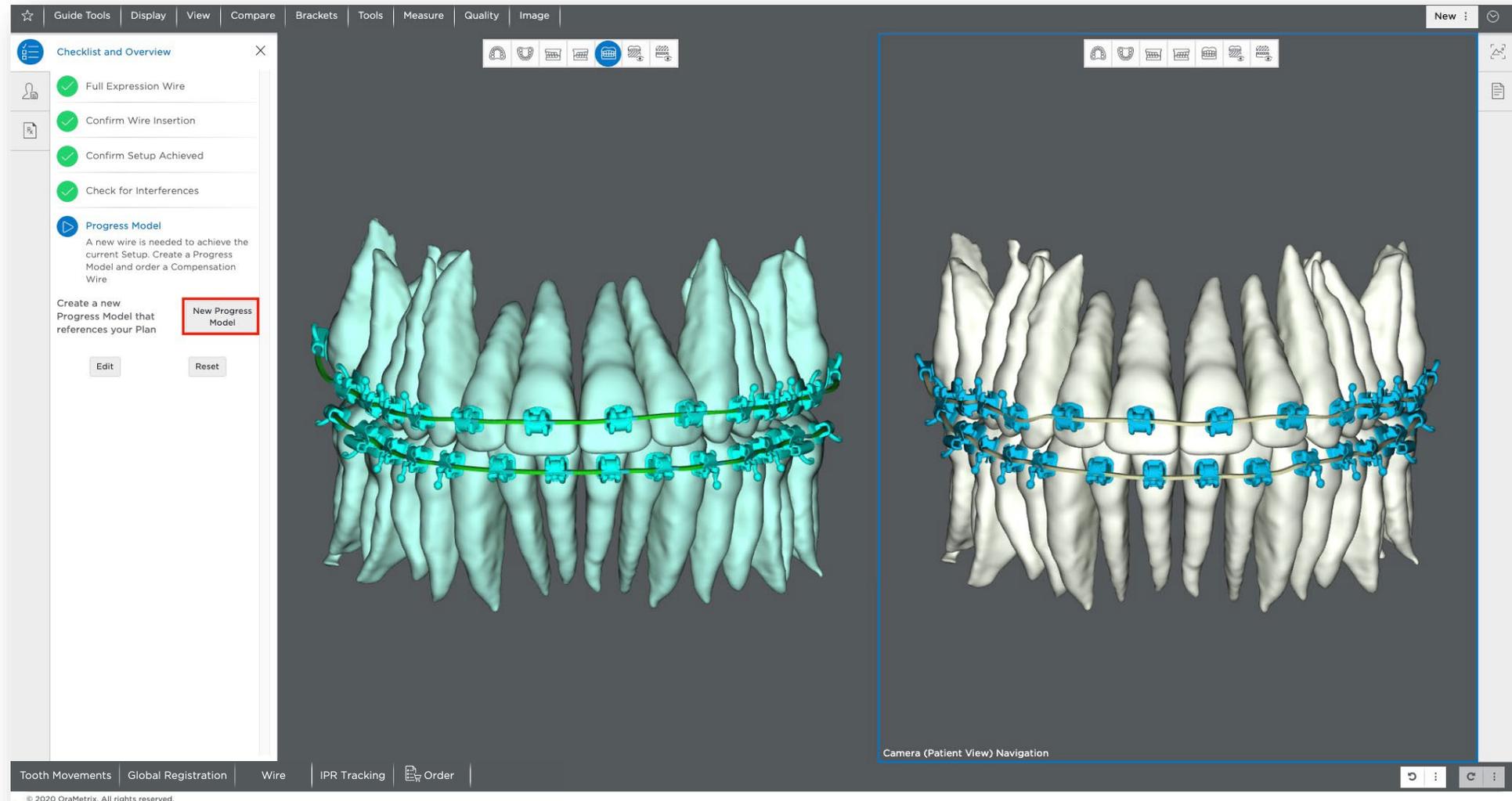
# Check for Interferences

- Check to see if tooth or bracket interferences are preventing full wire expression. Check the wire's most acute bend, and resolve collisions clinically with methods such as IPR and bite turbos. If issues have been resolved or are not applicable, proceed to the next step.



# Progress Model

- A new wire is needed to achieve current setup. Create a new Progress Model that references your plan and order a Compensation Wire.



# Treatment Simulation and Setup Modification Wire

## Treatment simulation:

- Review the progress photos and setup closely.
- If the misalignment found during the clinical evaluation is also present in the setup, then a new treatment simulation is recommended. (*Full set of current photos is also recommended*)
- Use the treatment simulation features and the *New Setup Modification Wire* button to submit modified wire.
- Manipulate teeth to design a new wire.
- Quicker solution than a new setup since no review cycle.
- Easier than just creating a modified wire, as the teeth can be moved interactively.
- It gives a visual movement representation that helps users determine the amount of correction.
- Recommended option for all new SureSmile® Advanced users.

## Setup Modification Wire:

- Modified custom archwire that includes overrides from the selected wire plus the simulated modification values.
- Be sure to select the last inserted wire from the copy overrides drop-down menu to include its values.

# New Wire

- The modification wire is designed based on overrides from the selected wire plus the values entered in the Wire tab
- Be sure to select the last inserted wire from the copy override drop-down box to include its values (if applicable)
- Allows direct manipulation of the wire
- Allows you to rapidly create a solution
- Requires good 3D visualization skills to determine the required correction

Confirm Wire Insertion

**Confirm Setup Achieved**

Examine wire and tooth positions to determine that Setup has been achieved.

If the Setup has not been achieved, proceed to next step.

If the Setup has been achieved but the case is not complete, there are two options: Treatment Simulation or direct wire modification.

Create a new Treatment Simulation starting from your Setup and then order a Setup Modification Wire.

**New Treatment Simulation**

Create a copy of the current wire and modify it to meet your new treatment goals.

**New Wire**

Check for Interferences

Progress Model

# Progress Model and Compensation Wire

## Progress Model

- A simulation of the estimated current tooth position is based upon your clinical observations.
- Includes the misalignment present in the mouth which you want to correct.
- The reversed values from the simulation will be used to correct the misalignment via a Compensation Wire.

## Compensation Wire

- Compensation Wire design is based upon the last inserted wire and the applied reversed progress model values, i.e., the differences between the setup and the progress model.
- The reversed values are transferred automatically from the progress model.

# Treatment Simulation vs. Progress Model

## Treatment Simulation

- Values are *automatically* transferred to the Setup Modification Wire Tooth Movements tab from the treatment simulation.

The image displays three overlapping screenshots of orthodontic software. The top screenshot shows the 'Tooth Movements' tab with a grid of tooth movements. A red box highlights the values 0.5, 0.5, 0.5, 0.5 in the 'occlusal (+) / gingival (-)' row for teeth UL2, UL3, UL4, and UL5. A blue callout bubble points to this area. The middle screenshot shows the 'Setup Modification Wire Tooth Movements' tab, where the same red box highlights the values 0.5, 0.5, 0.5, 0.5. A red arrow points from the top screenshot to this one. The bottom screenshot shows the 'Setup Modification Wire Wire' tab, where a red box highlights an empty cell in the 'Automatic Slot Filling / Facial Torque' row for tooth UL5. A blue callout bubble points to this area with the text 'Note that the values do NOT appear in the Wire tab'. The software interface includes various tabs like 'Global Registration', 'Occlusal Plane', 'Wire', 'Buildup / IPR', 'IPR Tracking', 'Measurements', and 'Order'. The 'Displacement Type' is set to 'Tooth' in the top two screenshots and 'Wire' in the bottom one. The 'Edit Selection' field shows '0.0' in the top two and is empty in the bottom one.

# Treatment Simulation vs. Progress Model

## Progress Model

- Inverse Bracket Displacement values are *automatically* transferred to the Compensation Wire Tooth Movements tab and Wire tab.

The image displays three overlapping screenshots of an orthodontic software interface, illustrating the automatic transfer of displacement values. Red arrows indicate the flow of data from the Progress Model to the Compensation Wire tabs.

**Progress Model Tooth Movements tab:** Shows a table of displacement values for teeth UL1 through UL5. The values are: UL1: -0.5, UL2: -0.5, UL3: -0.5, UL4: -0.3, UL5: -0.2.

**Compensation Wire Tooth Movements tab:** Shows the same displacement values transferred to the Compensation Wire tab, but with inverted signs: UL1: 0.5, UL2: 0.5, UL3: 0.5, UL4: 0.3, UL5: 0.2.

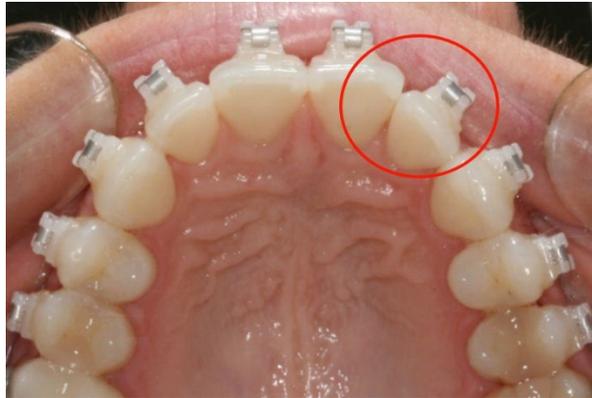
**Compensation Wire Wire tab:** Shows the displacement values transferred to the Wire tab, also with inverted signs: UL1: 0.5, UL2: 0.5, UL3: 0.5, UL4: 0.3, UL5: 0.2.

The software interface includes various controls such as 'Stage', 'Displacement Type', 'Edit Selection', and 'Functions'. The 'Displacement Type' is set to 'Tooth' in the Progress Model and 'Wire' in the Compensation Wire tabs. The 'Wire' tab also shows a 'Limit (%)' column with values of 100 for all teeth.

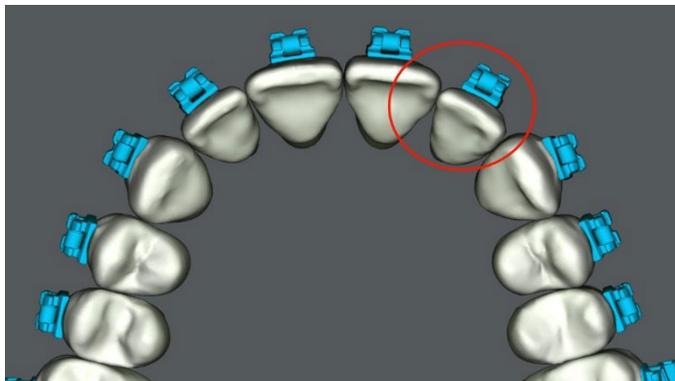
# 3D Model Orientation During Simulations

## Treatment Simulation

- 3D model orientation on the screen needs to match the orientation of the photo.
- Evaluate 3D simulation from different views to ensure proper alignment



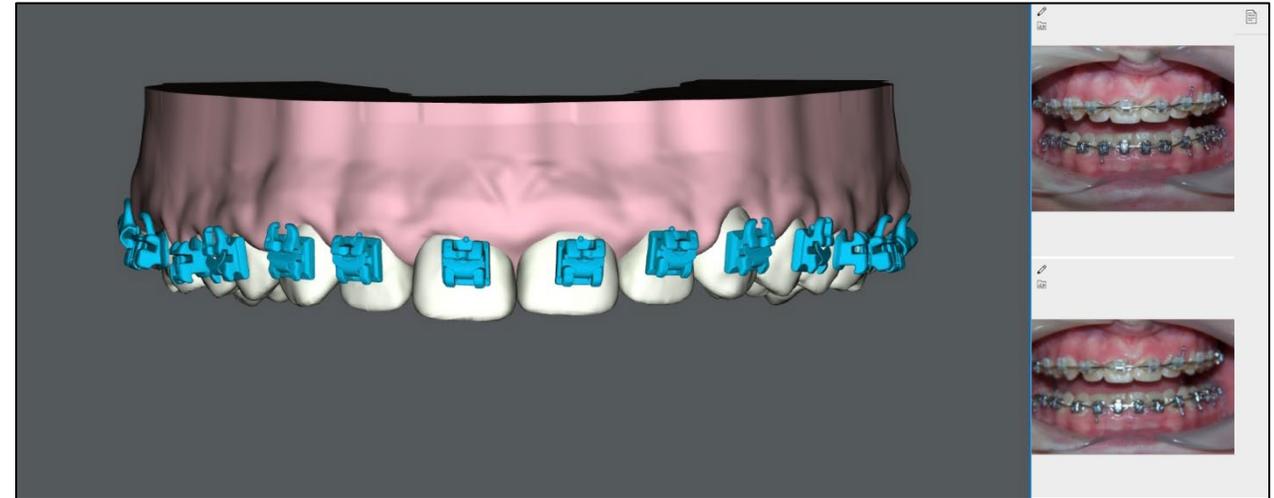
Current progress photo



Setup used to design wire inserted most recently

## Progress Model

- 3D model orientation on the screen needs to match the exact orientation from the photo.
- Do not change the orientation of the 3D model during creation and evaluation of the simulation



Progress model

**Note:** For chairside simulations, orient 3D model to match patient's mouth

# Learning Resources

- Search the Help Center in SureSmile® Advanced for:
  - Online help topics with step-by-step instructions
  - Downloads including forms and reference documents
  - Video demonstrations of software features

To open the Help Center, click the question mark button and select Help Center.

