Order of Operations for Case Approvals

Version: January 10, 2024

Overview / Workflow

1. Focus on Pretreatment Model – Simplest case approval approach
   a. Marginal Ridges
   b. Rotations
   c. Tip (Angulation
   d. Bracket Heights
2. Focus on Predicted Outcome Model – Most accurate case approval approach
   a. Marginal Ridges
   b. Rotations
   c. Tip (Angulation
   d. Bracket Heights
3. Advanced Training Topics
   a. Occlusal Bite: Fine tuning of tip,torque, rotation
   b. Bracket movement chart
   c. Bolton analysis,
   d. Bracket collisions & bite turbos

Pre-Training Configuration (if Training)

- BEFORE the call: review the Case. Correct marginal ridges if needed. Purposely adjust the tip of a posterior bracket to be incorrect in relation to the marginal ridge.
- This is a general setup. The expectation is the doctor does the fine tuning adjustments.

4. Have them click the checkmark for "Always allow sycndibsai to open this type of file."
5. Confirm the correct brackets have been applied to the right teeth.

6. Show home base,spacebar and double spacebar.
7. Demo the 3 viewing options: Existing, Predicted, Side by Side. Demo movement in real time.
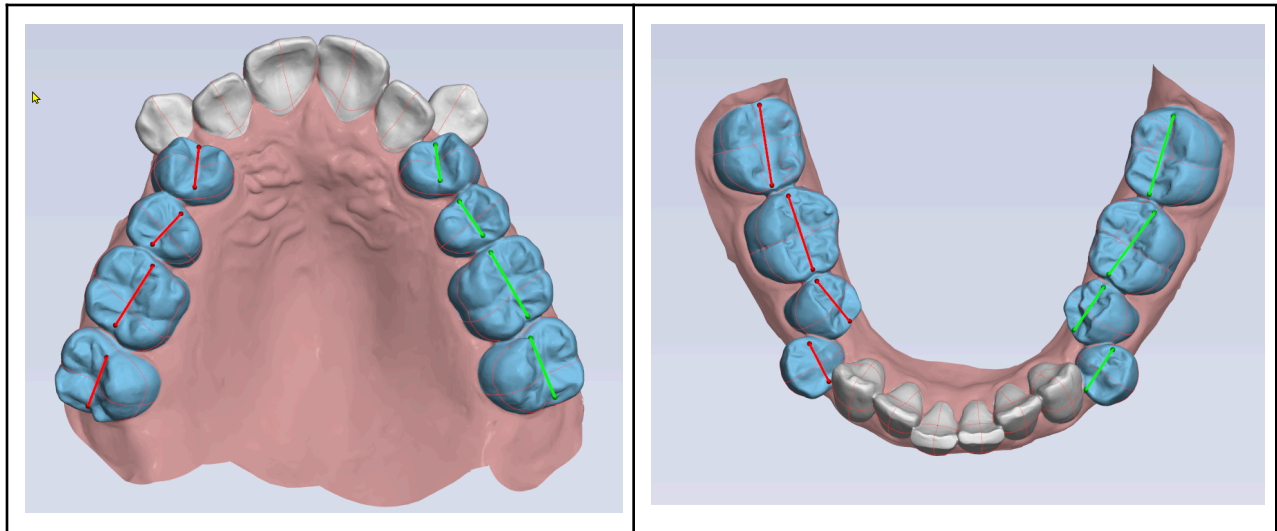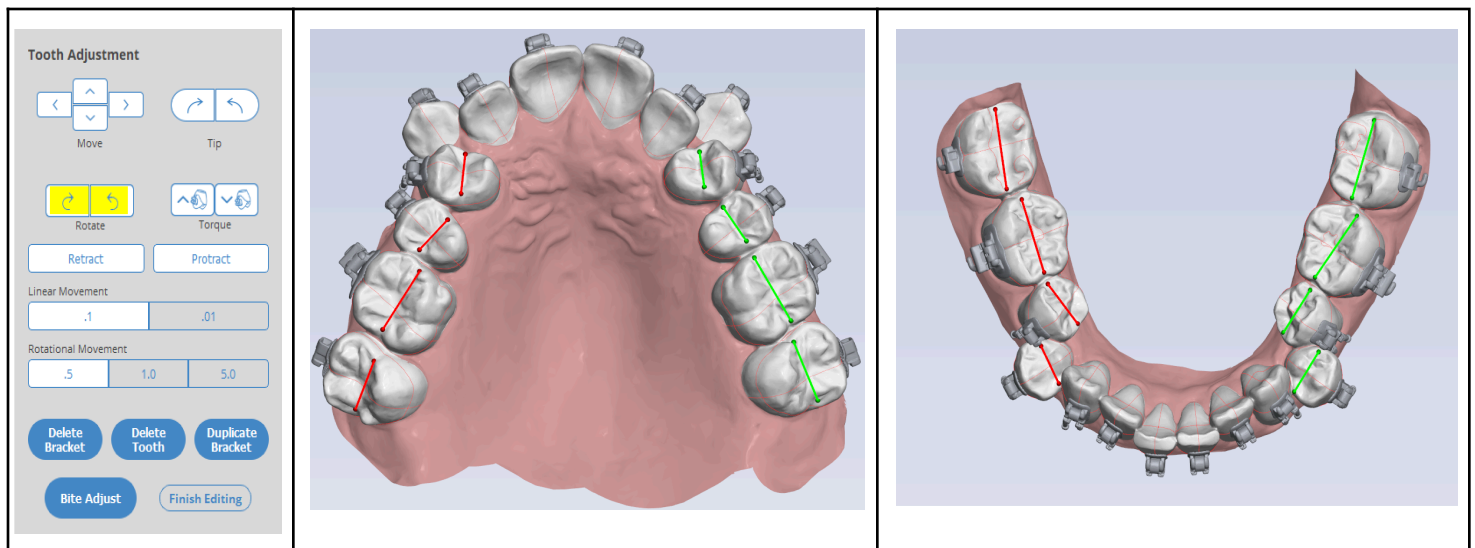
1. Pretreatment Approval – Simplest Approach

1. **Marginal Ridge Markers**

   View the placement of the marginal ridge markers. Adjust if necessary. Turn on the marginal ridges with keyboard shortcut "M." This is an important step. Changes here may alter other adjustments later.
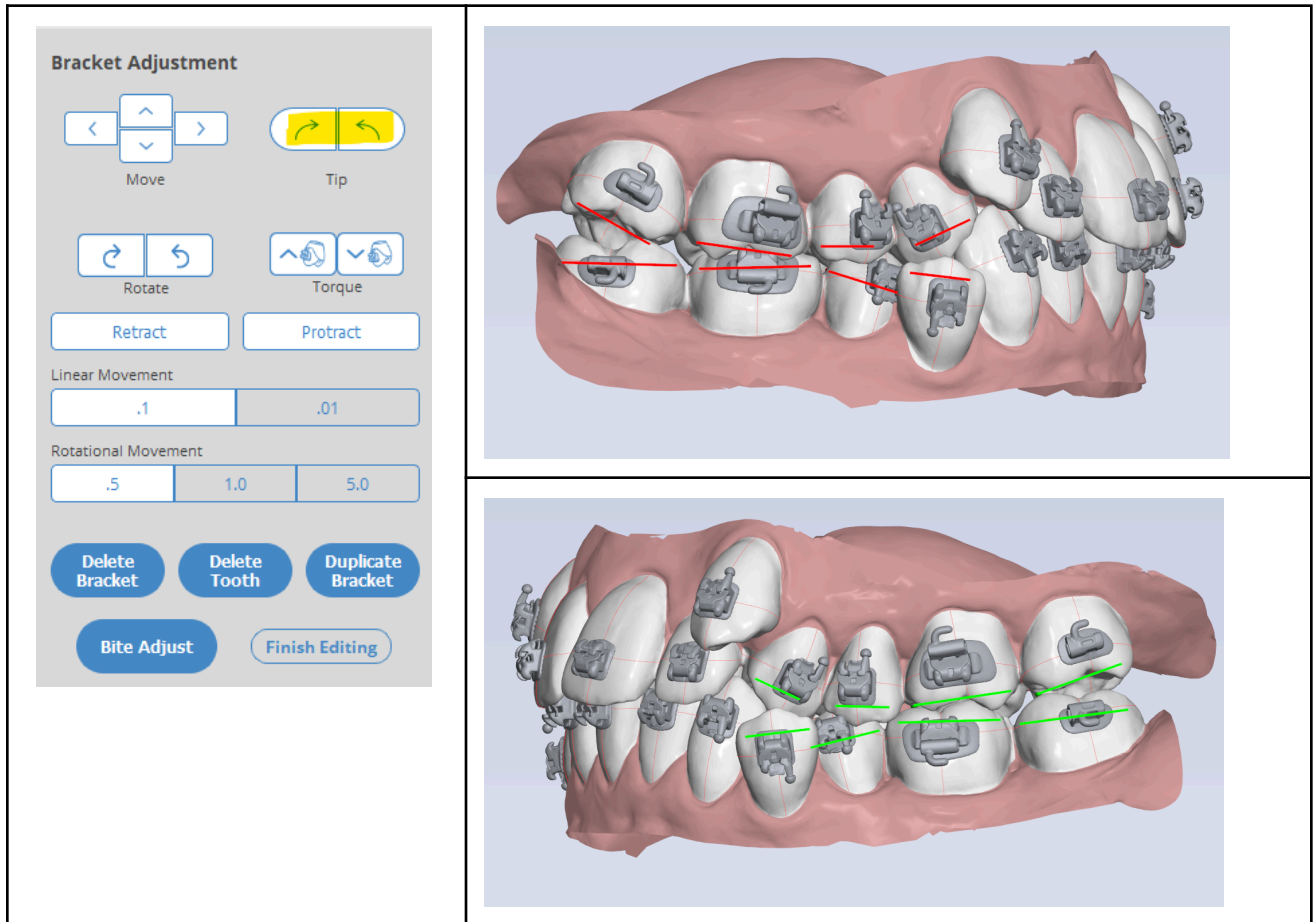

2. **Rotation**

   If needed, adjust the brackets to improve rotational alignment.

3. Angulation (Tip)

Check the tip of each tooth and make any adjustments (keyboard shortcut "Alt + left/right arrows") if necessary. Ideally brackets are parallel to the marginal ridges in most situations.

4. Anterior Heights & Leveling

Turn on the grid (keyboard shortcut "G"). Adjust heights by using your keyboard up/down arrows, the bracket adjustment menu, or typing in specific heights (double click on the number under "Height")
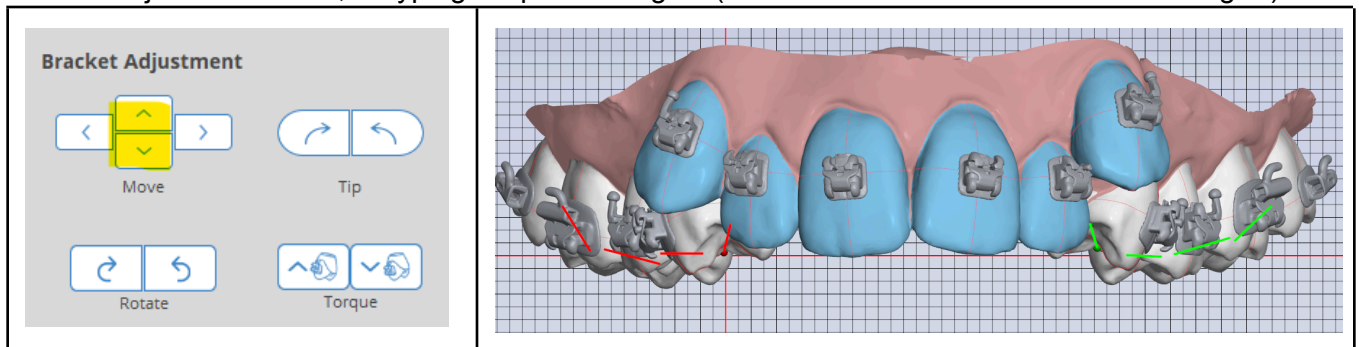
2.50	3.07	3.65	4.00	4.50	4.00	4.50	4.50	4.00	4.51	4.00	2.92	3.13	2.77
7	6	5	4	3	2	1	1	2	3	4	5	6	7
7	6	5	4	3	2	1	1	2	3	4	5	6	7
2.48	3.45	4.14	4.00	4.57	4.00	4.00	4.00	4.00	4.50	4.10	3.50	3.01	2.70

Height
4.50

Height
4.50

2. Predicted Outcome – (Most accurate approach)

5. **Check Torque & Wires**
Click to open the "Torque & Wires" option. Confirm the correct archform & wire size has been applied. This is an important step. Changes here may alter other changes later on.

Analysis

Torque & Wires

Torque & Wires

Anteriors
- ◉ Torque Expression
- ○ Wire Bends

Posteriors
- ◉ Torque Expression
- ○ Hybrid
- ○ Wire Bends

Archwire Form
Ortho Classic Pitts Broad

Archwire Size
.019x.025 (.48x.64 mm)

Archwire Corner Radius
.0000 (.000 mm)

Apply Size/Corner Radius to

| Upper	Lower	Both

Close

6. **Marginal Ridge Markers**
View the placement of the marginal ridge markers. Adjust if necessary. Turn on the marginal ridges with keyboard shortcut "M." This is an important step. Changes here may alter other changes later on.
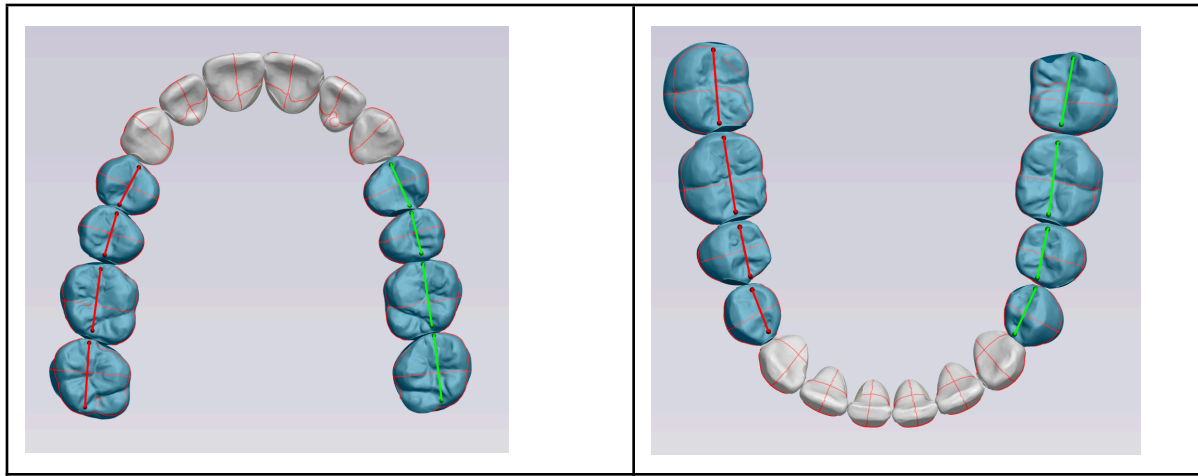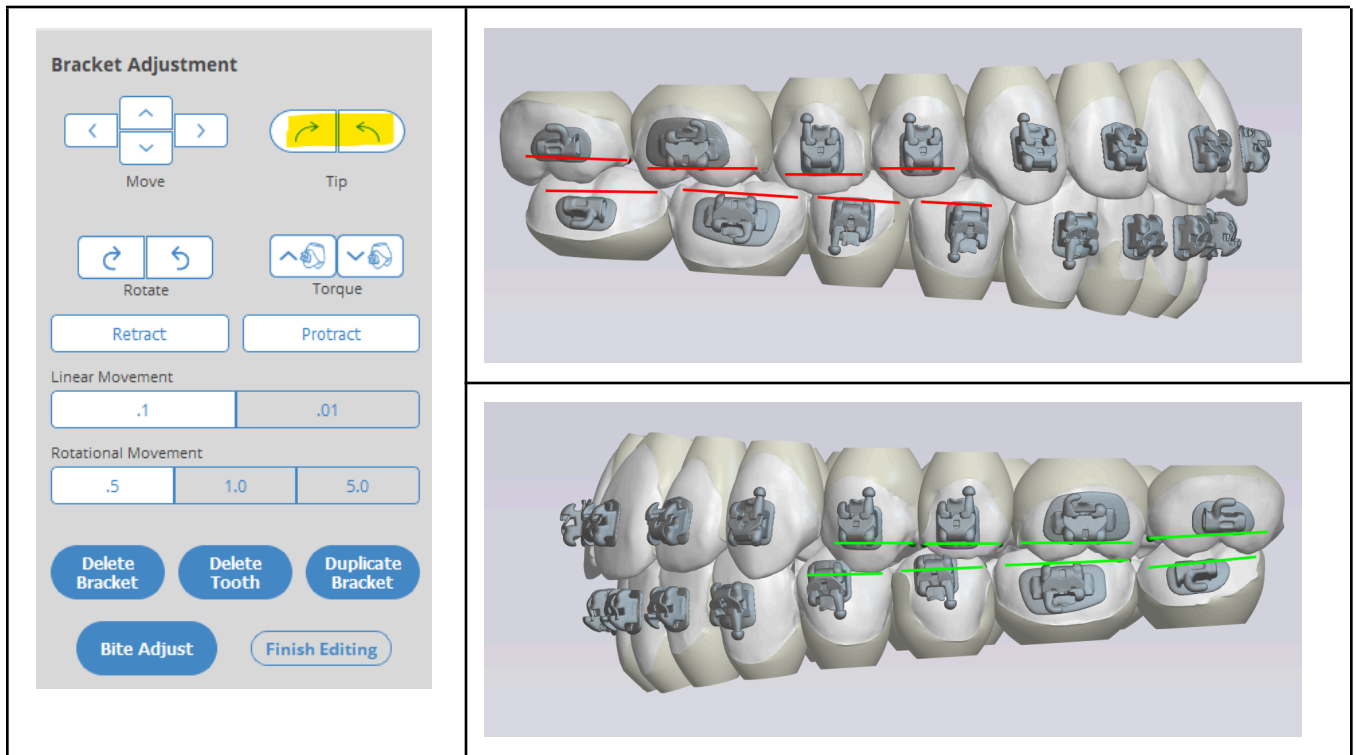
7. Tooth Rotation

Above you may have adjusted the placement of some marginal ridge markers. Now you may now need to adjust the teeth to align them better rotationally.
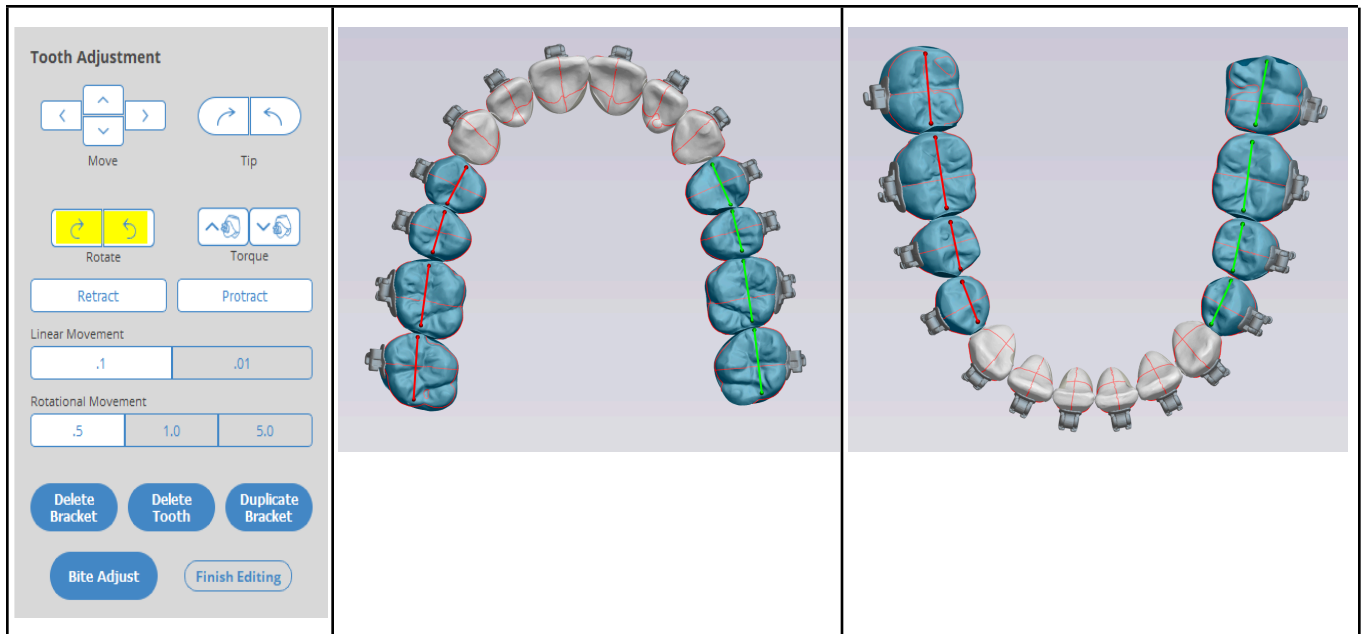

8. Angulation (Tip)

Check the tip of each tooth and make any adjustments (keyboard shortcut "Alt + left/right arrows") if necessary. Ideally they are parallel to the brackets.

9. Anterior Heights & Leveling

Turn on the grid (keyboard shortcut "G"). Adjust heights by using your keyboard up/down arrows, the bracket adjustment menu, or typing in specific heights (double click on the number under "Height")
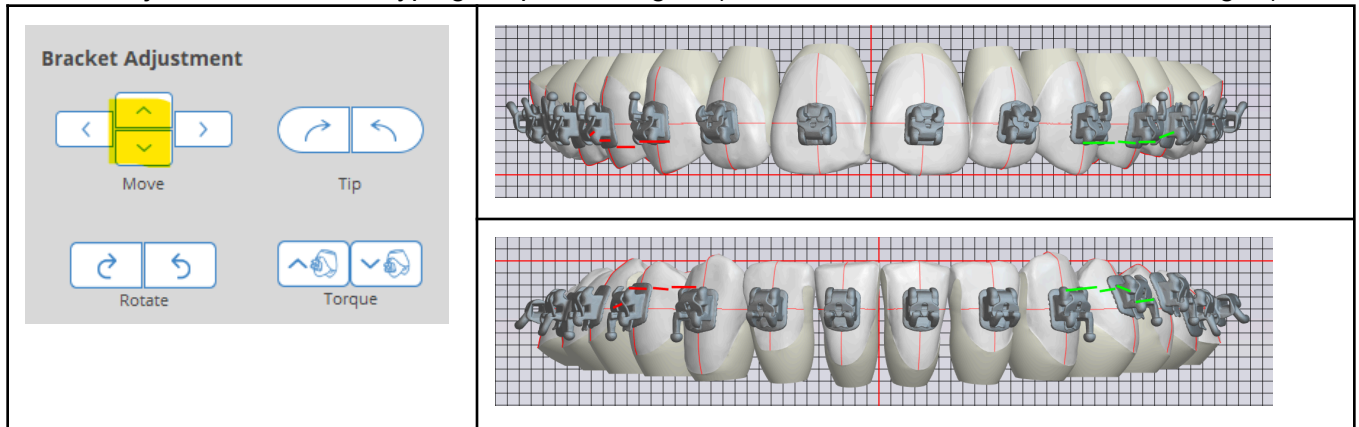
10. Height Presets, Bite Turbos, Mirroring, tooth centering, etc.

*Helpful Tools: a)* Adjustments to heights on the left will be mirrored on the right and vice versa.
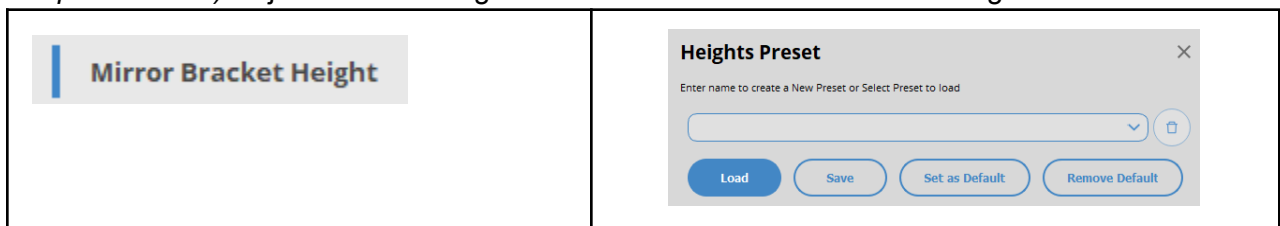
b) Once heights are set, save and name them as preferences in "Heights Preset."
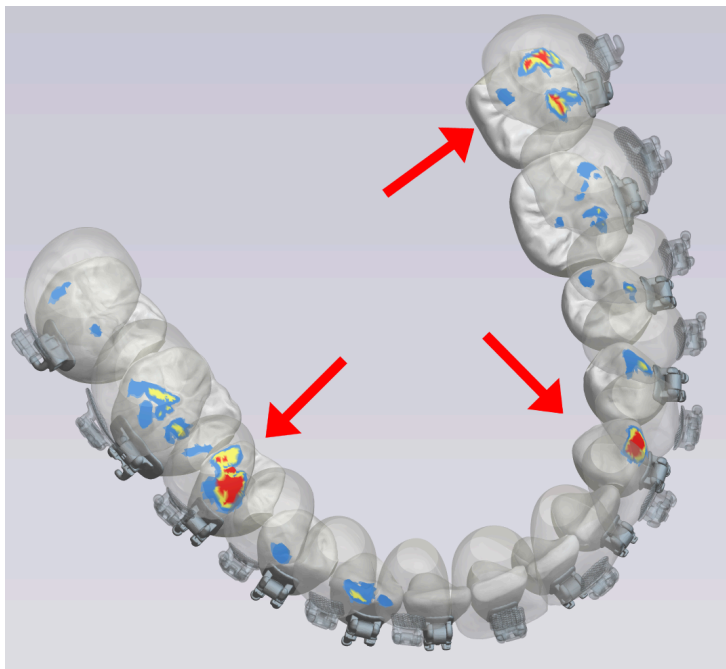
3. Advanced Training

1. **Occlusal Bite Adjustments**
   Turn on occlusal collisions under "Bite Adjustment." A heat map is display, illustration the the depth of collisions. Light, **medium**, or **heavy** indicate the severity. Ideally you want blue with a little yellow.
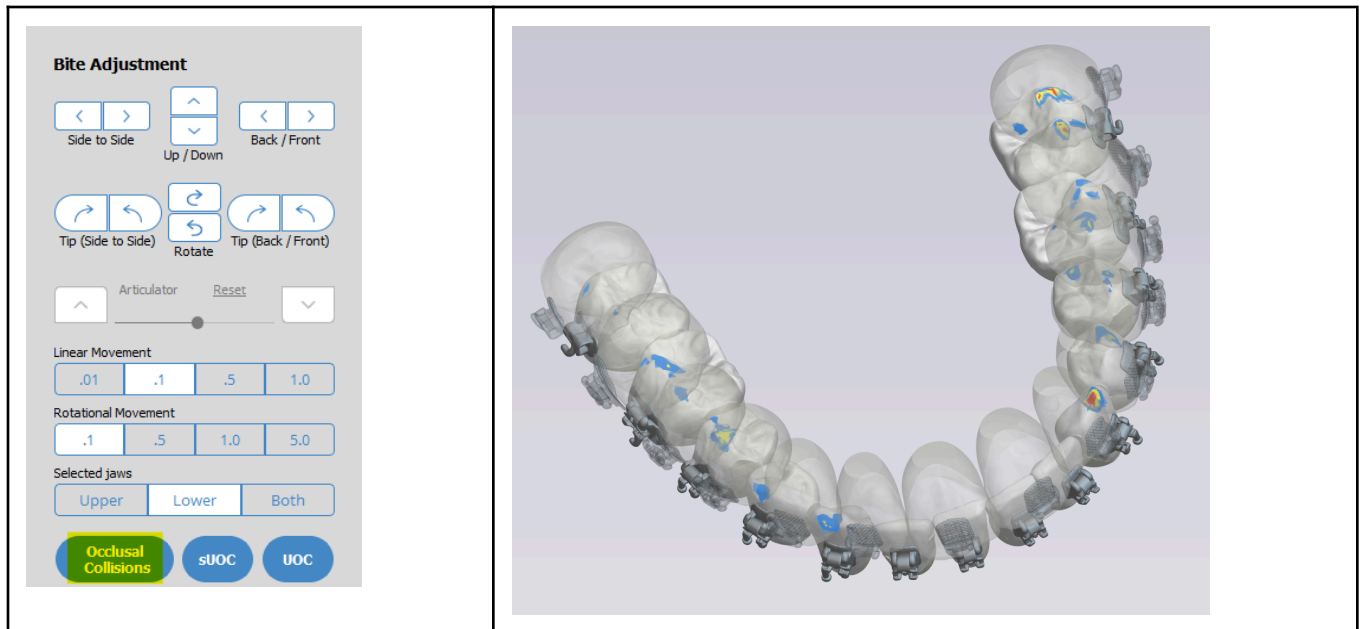
IMPORTANT: **Fine Tuning: Up/Down, Torque, Tip, and Rotation**
Utilizing the heat map to adjust certain tooth positions is a powerful tool that provides significant advantages down the road. Specifically, the ability to visually remove occlusal gaps and collisions is something impossible with direct bonding or when using the "Existing Mode." You
greatly decrease the need for bracket repos & wire bends later in treatment because of the
precise placement of the brackets based utilizing the heat map visuals.

2. Advanced Training

    a. Turn on the "3 Tooth View." Ask if they want it on or off.

    b. Bracket movement chart:

        i. Use to know the exact degrees needed for 3rd order wire bends. Also useful to see the total amount of tooth movement.

Tooth Movement Chart

Tooth	Angulation [deg]	Rotation [deg]	Inclination [deg]	X [mm]	Y [mm]	Z [mm]	Bending [deg]
UL1	1.60	-8.39	-8.37	0.48	-0.87	0.61	-0.55
UL2	-1.57	-6.93	-10.94	0.28	-0.09	1.18	-0.50
UL3	0.50	4.13	-3.93	0.03	-0.41	0.65	0.00
UL4	5.13	-5.53	0.68	-0.00	0.36	0.71	0.00
UL5	3.98	11.77	-16.66	1.16	2.60	3.70	0.00
UL6	0.93	19.74	1.86	1.82	1.82	4.21	0.00
UL7	-7.67	2.92	9.79	2.19	1.68	-0.82	0.00
LR1	-6.24	-11.53	-10.41	1.52	-1.88	0.93	0.00
LR2	4.76	15.18	2.13	1.02	-2.59	1.71	0.00
LR3	3.30	8.95	0.44	-0.12	-0.68	0.18	1.60
LR4	-1.57	7.20	5.95	0.05	0.03	1.03	0.00
LR5	1.68	-10.91	-0.38	-1.51	1.08	4.43	0.00
LR6	0.79	-5.64	-1.68	-0.91	1.56	2.48	0.00
LR7	2.32	-9.30	-13.91	-1.84	2.04	0.49	0.00
LL1	0.98	13.00	-4.46	1.18	-2.58	1.01	0.00
LL2	3.03	-3.33	2.99	1.15	-3.13	3.31	0.00
LL3	15.56	12.53	3.92	1.21	-2.26	3.44	4.45
LL4	12.24	14.23	-11.25	0.25	-0.86	3.06	13.44
LL5	0.94	18.50	13.28	2.45	-1.50	6.75	-9.28
LL6	0.70	14.68	-0.86	1.98	0.90	3.33	0.00
LL7	13.75	12.97	-15.73	0.59	0.86	1.20	-4.59

    c. Bolton Analysis:

        i. Click and check the "Bolton Analysis" tool to see if you need any IPR

Bolton Analysis

Ratio	Value
Anterior	0.781
Overall	0.915

Excess	Value
Mandibular Excess 3-3	0.46 mm
Mandibular Excess 6-6	0.20 mm

d. Bite Turbos:
   i. Go into the existing view, and open up the bite adjustment window
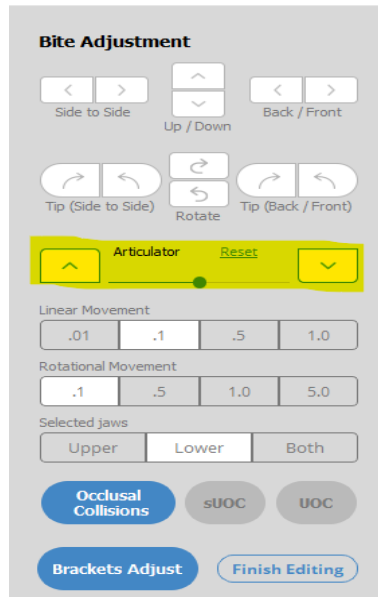
    ii. Turn on "Bracket Collisions" under "Analysis." Brackets colliding with another tooth or bracket will be indicated in red.

iii.   Articulate the bite to open the mouth until there are no more collisions. Articulate the bite 10 more "clicks" (1mm) to account for clenching.This will show how open the bite needs to be to avoid collisions.
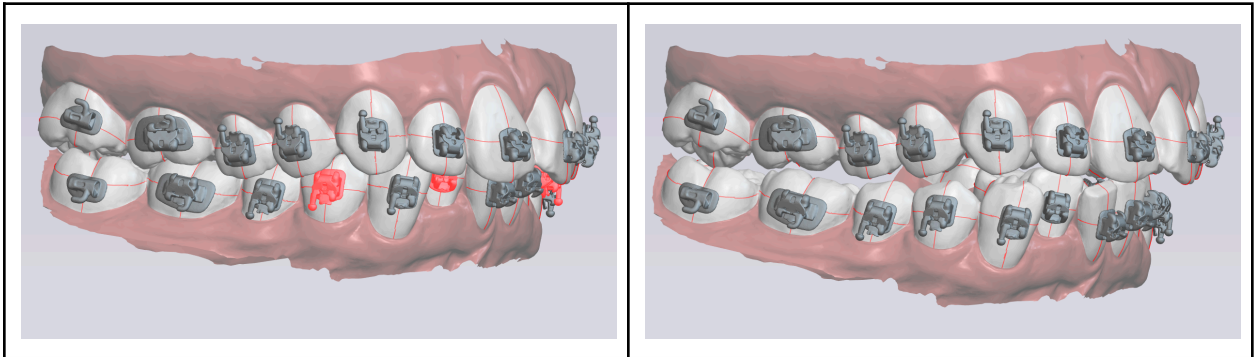

iv.   Add "Bite Turbos" under analysis. Assign to the maxillary or mandibular jaw by right clicking and dragging to the tooth you want them to be placed. Increase or decrease the size by hovering over the turbo and scrolling with your mouse.
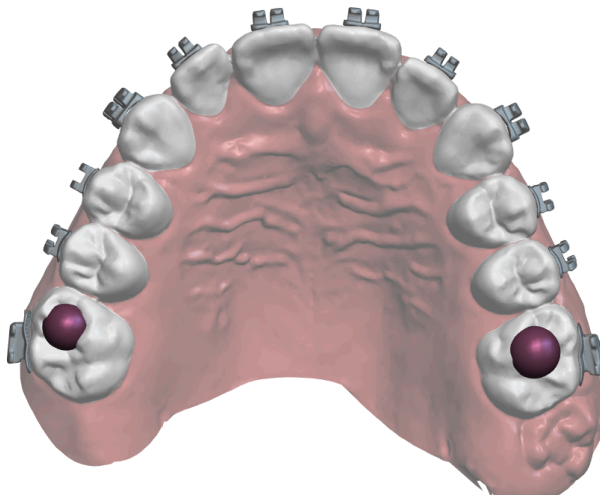
v.   Turn on both arches and look underneath the opposing arch. You should see a little bit of the bite turbo poking through to indicate that there is contact and that it is opening up the bite.
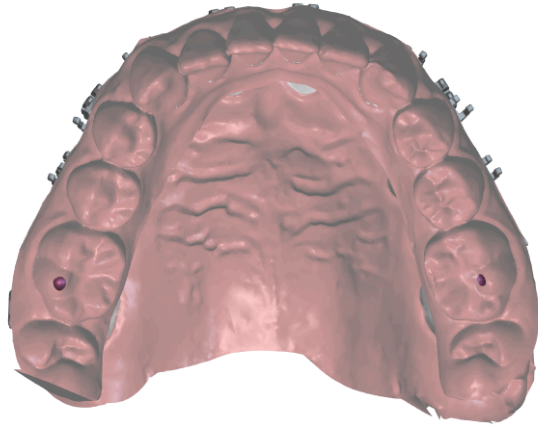
vi.   There are also rectangular turbos included in the software