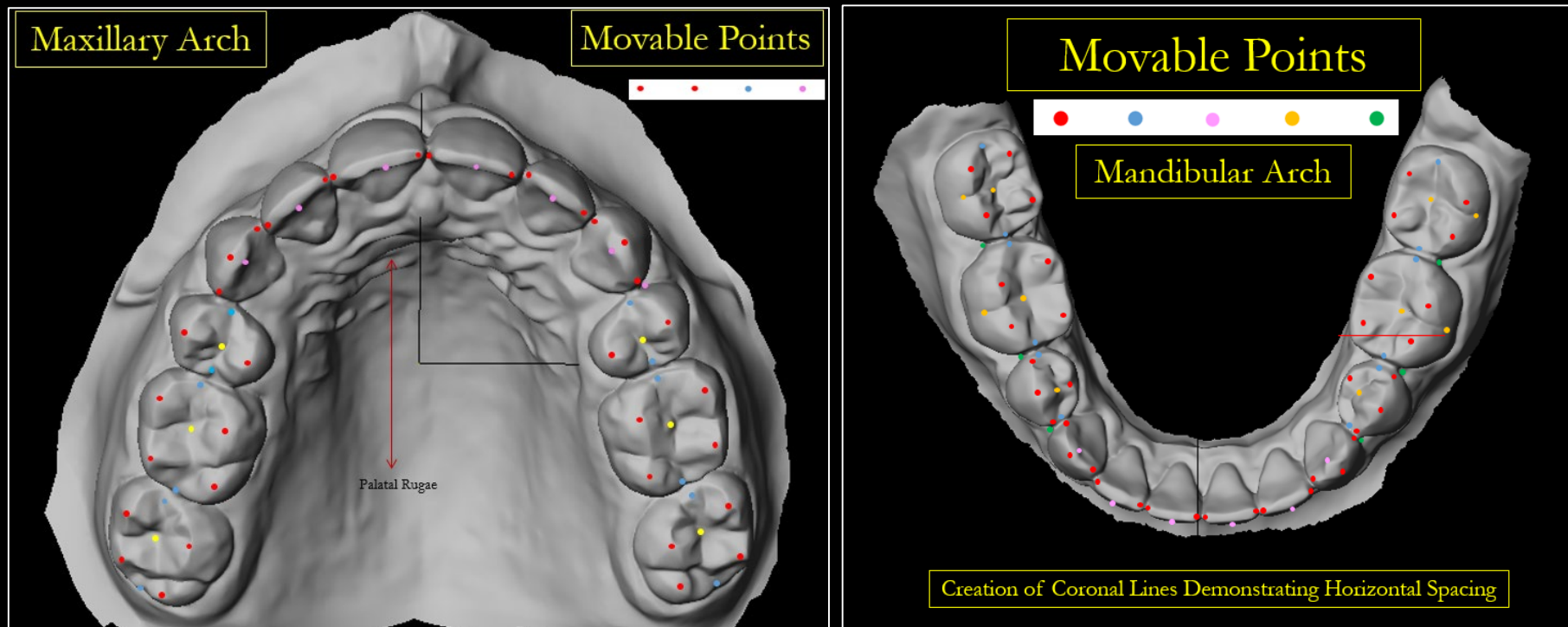


Digital Morphological Landmarks for Cast Radiograph-Evaluation (CR-E)



Digital Morphological Landmarks for Cast Radiograph-Evaluation (CR-E)



Defined Digital Morphological Landmarks for Cast Radiograph-Evaluation (CR-E)

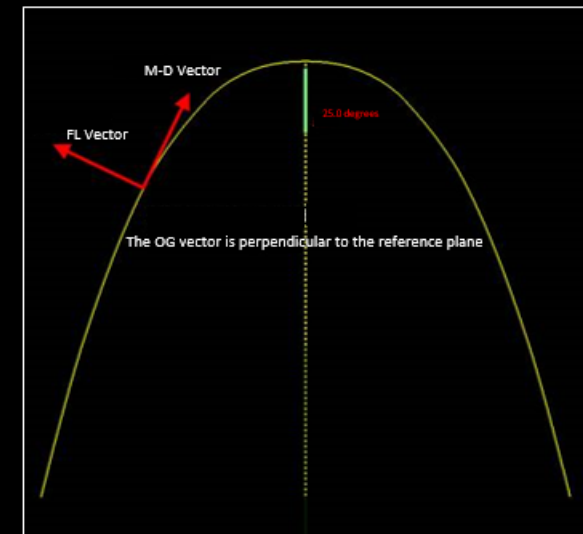
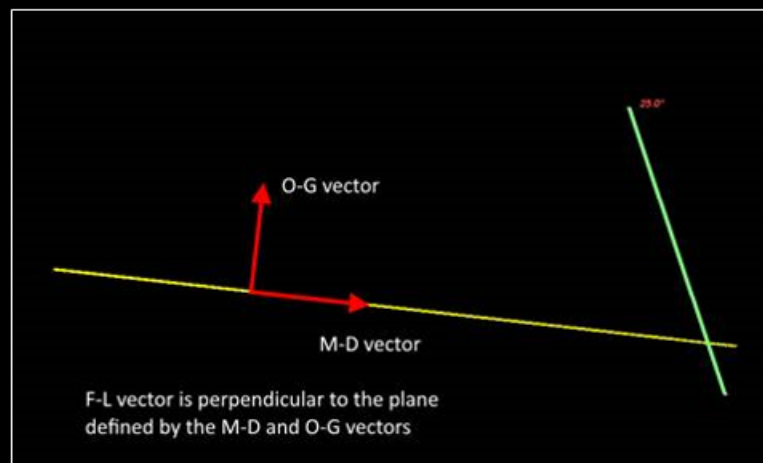
Upper	A	MR	BLI	OC	OB	OJ	IPC	Lower							
Central	Mesio-palatal point on the incisal edge and Disto-palatal point on the incisal edge; a line connecting these two points along the palatal-incisal edge					Palatal incisal tip in cross section midpoint between the mesial and distal incisal line angle	Mesial Contact Point, Distal Contact Point	Central	Mesio-labial point on the incisal edge and Disto-labial point on the incisal edge; a line connecting these two points along the labial-incisal edge					Most anterior point on the curve of the upper third of the facial surface in cross section	Mesial Contact Point, Distal Contact Point
Lateral	Mesio-palatal point on the incisal edge and Disto-palatal point on the incisal edge; a line connecting these two points along the palatal-incisal edge					Palatal incisal tip in cross section midpoint between the mesial and distal incisal line angle	Mesial Contact Point, Distal Contact Point	Lateral	Mesio-labial point on the incisal edge and Disto-labial point on the incisal edge; a line connecting these two points along the labial-incisal edge					Most anterior point on the curve of the upper third of the facial surface in cross section	Mesial Contact Point, Distal Contact Point
Cuspid	a line drawn from the cusp tip to a point located equidistant between the mesio-labial and mesio palatal points; a connected second line drawn from the cusp tip to a point located equidistant between the disto-labial and disto-palatal points				Cusp tip		Mesial Contact Point, Distal Contact Point	Cuspid	a line drawn from the cusp tip to a point located equidistant between the mesio-labial and mesio lingual points; a connected second line drawn from the cusp tip to a point located equidistant between the disto-labial and disto-lingual points				Distal Contact Point		Mesial Contact Point, Distal Contact Point
1 st bicuspids	The central groove, from mesial to distal aspect	Not scored	Not scored	Not scored	Buccal Cusp tip	Center of Occlusal Surface	Mesial Contact Point, Distal Contact Point	1 st bicuspids	Mesio-bucco-occlusal point Disto- bucco-occlusal point The buccal cusp tip a line connecting these three points along the mesial slope and distal slope	Not scored	Not scored	Not scored		Not scored	Mesial Contact Point, Distal Contact Point
2 nd Bicuspids	The central groove, from mesial to distal aspect	Mesial Ridge, Distal Marginal Ridge at the height of contour	Palatal Cusp tip, Buccal Cusp tip	Palatal cusp tip	Buccal Cusp tip	Center of Occlusal Surface	Mesial Contact Point, Distal Contact Point	2 nd bicuspids	Cusp tip	Mesial Marginal Ridge, Distal Marginal Ridge	Lingual Cusp tip, Buccal Cusp tip	Buccal Cusp tip	Mesial Contact Point, Distal Contact Point	Buccal Cusp tip	Mesial Contact Point, Distal Contact Point
Molars	The central groove, from mesial to distal aspect	Mesial Marginal Ridge, Distal Marginal Ridge at the height of contour	MesioPalatal Cusp tip, Disto palatal Cusp tip, MesioBuccal Cusp tip, DistoBuccal Cusp tip	MesioPalatal Cusp tip, Disto Palatal Cusp	Mesio-buccal cusp tip	Center of Occlusal Surface	Mesial Contact Point, Distal Contact Point	Molars	Mesial and distal buccal cusp tips	Mesial Marginal Ridge, Distal Marginal Ridge	MesioLingual Cusp tip, DistoLingual Cusp tip MesioBuccal Cusp tip, DistoBuccal Cusp tip	MesioBuccal Cusp tip, DistoBuccal Cusp tip	Mesial Contact Point, Mesio-buccal Groove	MesioBuccal Cusp tip, DistoBuccal Cusp tip	Mesial Contact Point, Distal Contact Point

Digital Morphological Landmarks for Cast Radiograph-Evaluation (CR-E)

Cast Orientation Reference Plane as Defined and Utilized by Motion View[®] Software

When accurately measuring in a computer environment it is necessary to have a point/s for all measurements to reference. When measuring digital casts in Ortho Share 3D[®] the reference plane is the standard for orientation.

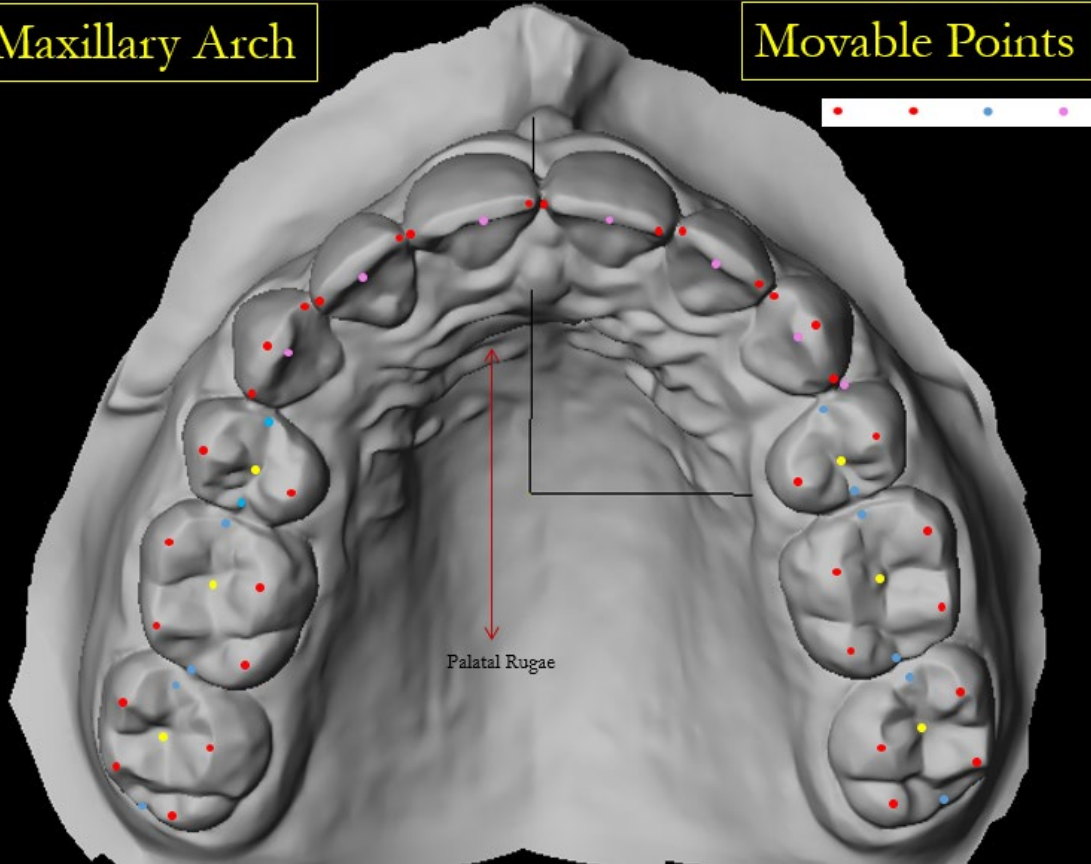
For purposes of measuring point to point relationships on the dental casts, we have defined the reference plane as determined by the following three (3) points: right and left central fossae as found on the maxillary first molars for the posterior and the center point of the incisal edge of the maxillary right central incisor.



Digital Morphological Landmarks for Cast Radiograph-Evaluation (CR-E)

Maxillary Arch

Movable Points



Upper	Landmarks
Central UCR UCL	1. Mesio-palatal incisal point, ● 2. Disto - palatal incisal point, ● 3. Mesio-disto- incisal line angle ———
Lateral ULR ULL	4. Mesio- palatal incisal point, ● 5. Distal - palatal incisal point, ● 6. Mesio-disto- incisal line angle
Cuspid UCCR UCCL	7. Cusp tip, ● 8. Mesial Slope, ——— 9. Distal Slope, ——— 10. Mesio-incisal point, 11. Disto-incisal point
Premolars URP1 ULP1 URP2 ULP2	1. Central Groove, ——— 2. Mesial Contact Point, ● 3. Distal Contact Point, ● 4. Mesial Marginal Ridge, ● 5. Distal Marginal Ridge, ● 6. Lingual Cusp tip, ● 7. Buccal Cusp tip, ● 8. Center of Occlusal Surface ●
Molars URM1 ULM1 URM2 ULM2	1. Central Groove, ——— 2. Mesial Contact Point, ● 3. Distal Contact Point, ● 4. Mesial Marginal Ridge, ● 5. Distal Marginal Ridge, ● 6. Mesio palatal Cusp tip, ● 7. Disto palatal Cusp tip, ● 8. MesioBuccal Cusp tip, ● 9. DistoBuccal Cusp tip, ● 10. Center of Occlusal Surface ●

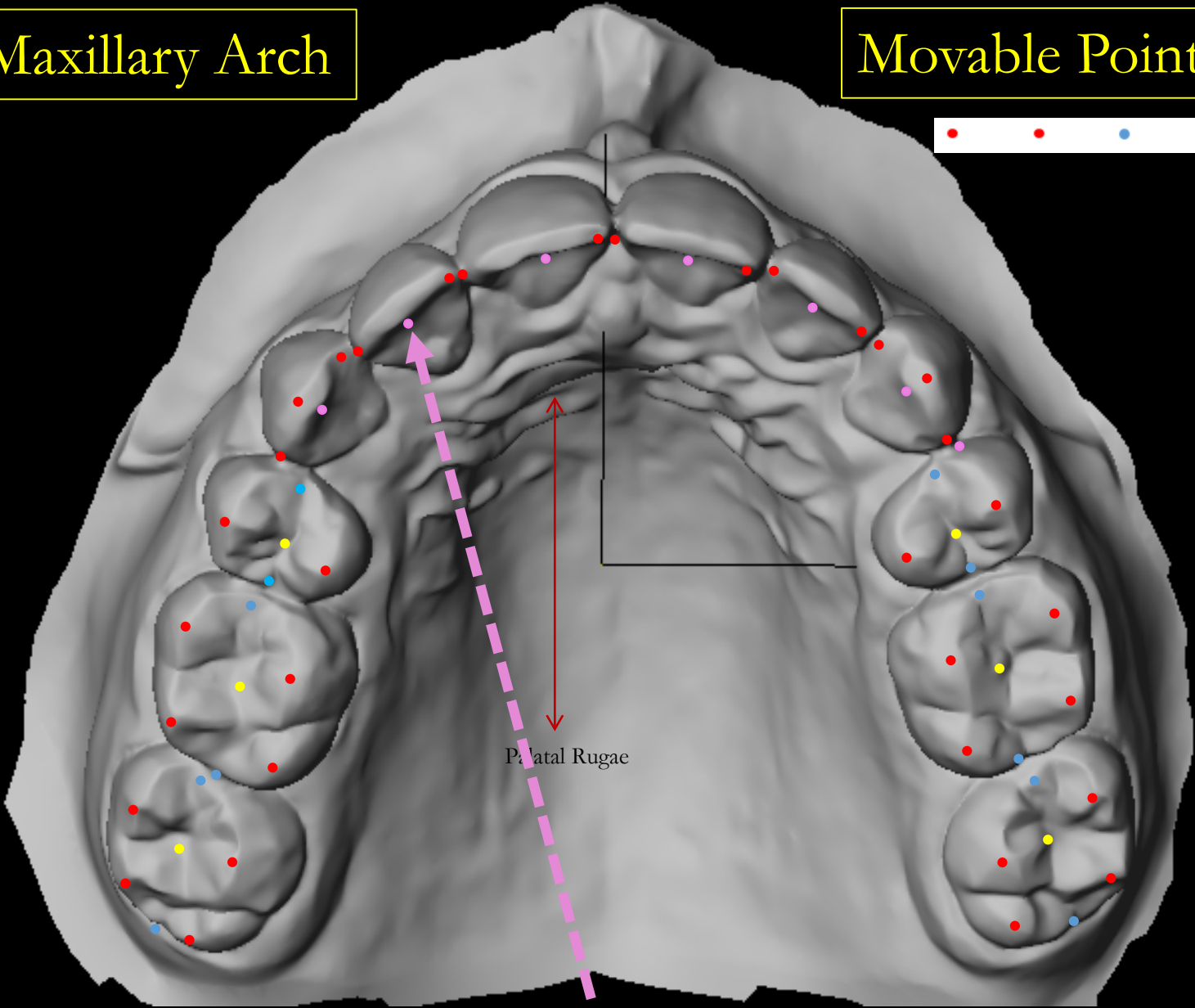
UCR/L- midpoint of the mesio-distal incisal line angle- ●

ULR/L- midpoint of the mesio-distal incisal line angle ●

At the height of each of the cusps ●

Maxillary Arch

Movable Points



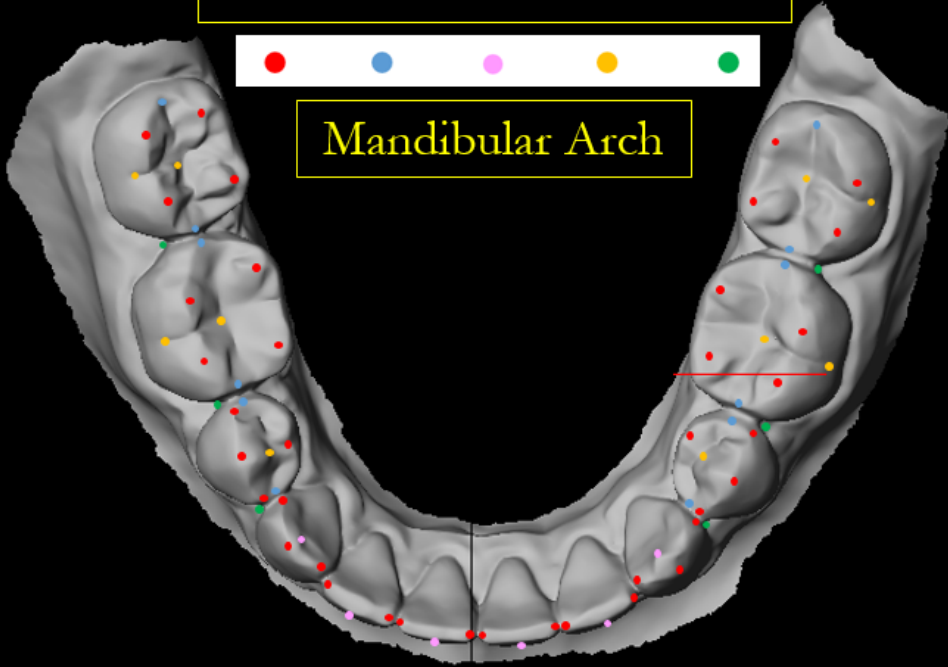
Additional Maxillary Anterior Points

Digital Morphological Landmarks for Cast Radiograph-Evaluation (CR-E)

Movable Points



Mandibular Arch



Creation of Coronal Lines Demonstrating Horizontal Spacing

Lower	Landmarks
Central LCR LCL	1. Mesio-labial incisal point } 2. Disto-labial incisal point } 3. Mesio-labio-incisal line angle } 4. Facial Incisal Center }
Lateral LLR LLL	5. Mesio-labial incisal point } 6. Disto-labial incisal point } 7. Mesio-labio-incisal line angle } 8. Facial Incisal Center }
Cuspid LCCR LCCL	9. Cusp Tip } 10. Mesial Slope } 11. Distal Slope } 12. Mesio-incisal point } 13. Disto-incisal point } 14. Cusp Tip Facial Labial Center } 15. Distal Gingival Interproximal Locator }
Premolars LRP1 LLP1 LRP2 LLP2	1. Central Groove } 2. Medial Contact Point } 3. Distal Contact Point } 4. Mesial Marginal Ridge } 5. Distal Marginal Ridge } 6. Buccal Cusp Tip } 7. Palatal Cusp Tip } 8. Center of the Occlusal Surface } 9. Mesial Gingival Interproximal Locator } 10. Distal Gingival Interproximal Locator }
Molars LRM1 LLM1 LRM2 LLM2	1. Central Groove } 2. Mesial Contact Point } 3. Distal Contact Point } 4. Mesial Marginal Ridge } 5. Distal Marginal Ridge } 6. Mesio-palatal Cusp Tip } 7. Disto-palatal Cusp Tip } 8. Mesio-buccal Cusp Tip } 9. Disto-buccal Cusp Tip } 10. Center of the Occlusal Surface } 11. Buccal Groove } 12. Mesial Gingival Interproximal Locator } 13. Distal Gingival Interproximal Locator }

LRC/L Centered on the facial surface of the lower incisors one third from the incisal edge occlusal/gingivally

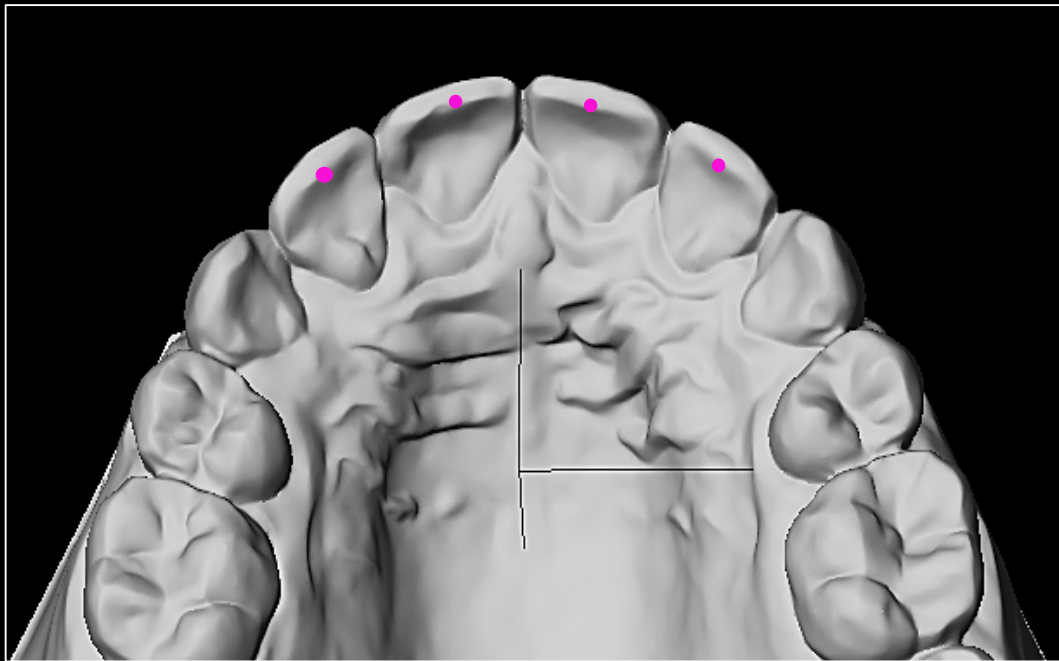
LRL/L Centered on the facial surface of the lower lateral incisors one third from the incisal edge occlusal/gingivally

At the height of each of the cusps

Digital Morphological Landmarks for Cast Radiograph-Evaluation (CR-E)

Locations for Anterior Overjet Points

1. Maxillary Points- centered on the incisal ridge immediately adjacent to the palatal line angle
2. Mandibular Points- centered on the facial surface of the lower incisors one third from the incisal edge occlusal/gingivally

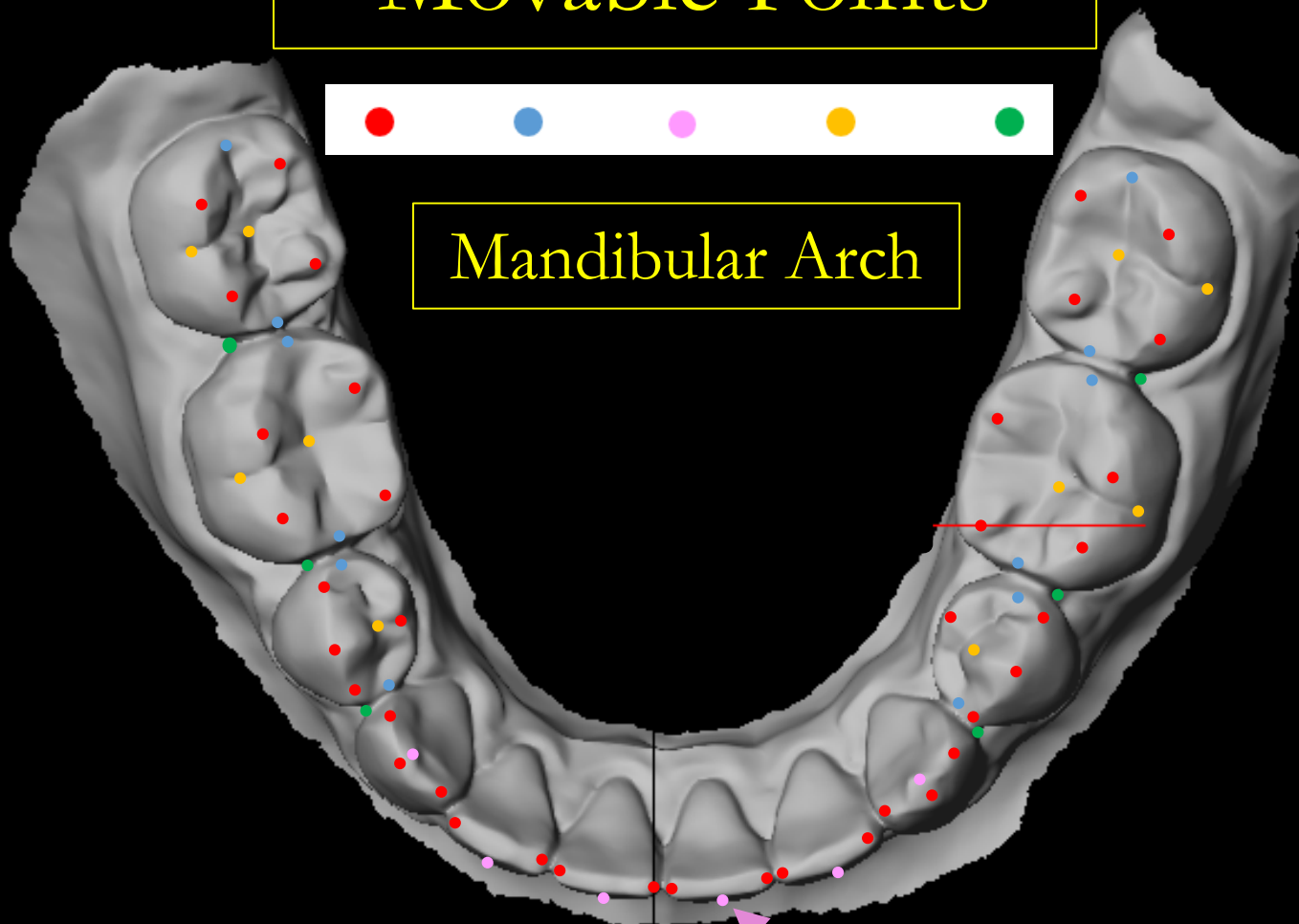


Movable Point ●

Movable Points



Mandibular Arch



Additional Mandibular Anterior Points

Cast Radiograph-Evaluation (CR-E) Scoring For Root Scoring

