



# **Three Dimensional Evaluation of Palatal Expansion in Growing and Adult Patients**

**A**

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## *Dedication*

*To my beloved family for their endless  
help and support.*

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**Dedication**

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## *List of Abbreviations*

<b>Abbreviation</b>	<b>Full term</b>
<b>RME</b>	Rapid maxillary expansion
<b>SME</b>	Slow maxillary expansion
<b>SARME</b>	Surgically assisted RME
<b>NSRME</b>	Nonsurgical rapid maxillary expansion
<b>PA</b>	Posteroanterior cephalometric
<b>CBCT</b>	Cone-beam computed tomography
<b>RPE</b>	Rapid palatal expander
<b>SRME</b>	Semi-rapid maxillary expansion
<b>2D</b>	2 dimensional
<b>CEJ</b>	Cemento enamel junction
<b>3D</b>	3 dimensional
<b>CT</b>	Computed tomography
<b>DICOM</b>	Digital Imaging and Communications in Medicine
<b>mSv</b>	Micro-sieverts
<b>mA</b>	Milli-ampere
<b>ANS</b>	Anterior nasal spine
<b>PNS</b>	Posterior nasal spine
<b>Kvp</b>	Kilovolt peak
<b>r</b>	Right
<b>l</b>	Left
<b>ZT<sub>s</sub></b>	Zygomatico temporal suture
<b>J</b>	Jugale
<b>FS</b>	Foramen spinosum
<b>A</b>	Point A
<b>Al crest</b>	Buccal alveolar crest
<b>Bp</b>	Maxillary buccal plate

<b>Abbreviation</b>	<b>Full term</b>
<b>Pp</b>	Maxillary palatal plate
<b>3</b>	Upper canine
<b>4</b>	Upper first premolar
<b>5</b>	Upper second premolar
<b>6</b>	Upper first molar
<b>1</b>	Upper incisor
<b>1<sub>A</sub></b>	Upper incisor apex
<b>1<sub>E</sub></b>	Upper incisor incisal edge
<b>3<sub>C</sub></b>	Upper canine cusp
<b>3<sub>A</sub></b>	Upper canine apex
<b>4<sub>BC</sub></b>	Upper first premolar buccal cusp
<b>4<sub>PC</sub></b>	Upper first premolar palatal cusp
<b>4<sub>BA</sub></b>	Upper first premolar buccal apex
<b>4<sub>BA</sub></b>	Upper first premolar buccal apex
<b>5<sub>BC</sub></b>	Upper second premolar buccal cusp
<b>5<sub>PC</sub></b>	Upper second first premolar palatal cusp
<b>5<sub>BA</sub></b>	Upper second premolar buccal apex
<b>5<sub>BA</sub></b>	Upper second first premolar buccal apex
<b>6<sub>MBC</sub></b>	Upper first molar mesiobuccal cusp
<b>6<sub>DBC</sub></b>	Upper first molar distobuccal cusp
<b>6<sub>MPC</sub></b>	Upper first molar mesiopalatal cusp
<b>6<sub>MBA</sub></b>	Upper first molar mesiobuccal apex
<b>6<sub>DBA</sub></b>	Upper first molar distobuccal apex
<b>6<sub>MPA</sub></b>	Upper first molar mesiopalatal apex
<b>Mnd 4<sub>BC</sub></b>	Lower first premolar buccal cusp
<b>Mnd 5<sub>BC</sub></b>	Lower second premolar buccal cusp
<b>Mnd 6<sub>MBC</sub></b>	Lower first molar mesiobuccal cusp
<b>ZT line</b>	Zygomatico temporal line
<b>ELSA</b>	Foramen spinosum plane
<b>PP</b>	Palatal plane
<b>4 PA</b>	First premolar long axis (palatal)



<b>Abbreviation</b>	<b>Full term</b>
<b>4 PA</b>	Second premolar long axis (palatal)
<b>6 PA</b>	First molar long axis (palatal)
<b>Alv.PI</b>	Palatal alveolar plate
<b>SE</b>	Suture expansion (skeletal)
<b>IJ</b>	Inter jugale width (skeletal)
<b>ELSA-A</b>	Foramen spinosum plane to point A
<b>PMW</b>	Palatal maxillary width (alveolar)
<b>BMW</b>	Buccal maxillary width (alveolar)
<b>BBL</b>	Buccal bone level from cusp tip
<b>AT</b>	Alveolar tipping angle
<b>IC</b>	Inter cuspal
<b>Mnd IC</b>	Mandibular Inter cuspal
<b>IA</b>	Inter apical
<b>DT</b>	Dental tipping angle
<b>Rt Lgth</b>	Root length
<b>ELSA-Apx</b>	Foramen spinosum plane to apex of right central incisor
<b>MB</b>	Mesiobuccal
<b>DB</b>	Distobuccal
<b>B</b>	Buccal
<b>P</b>	Palatal



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