



First Nations Health Authority  
Health through wellness



# ORTHODONTIC TREATMENT PLAN CRITERIA AND GUIDELINES

January 2020



# PACIFIC BLUE CROSS - FIRST NATIONS HEALTH AUTHORITY (FNHA): ORTHODONTIC TREATMENT PLAN CRITERIA AND GUIDELINES

## Orthodontic Submissions Review Process and Documentation Requirements

Pacific Blue Cross (PBC) must receive the complete set of predetermination documents prior to the client's 18th birthday for the request to be considered for review (not applicable to craniofacial anomaly cases).

- Submissions will be reviewed against the modified [Handicapping Labio-Lingual Deviation HLD](#) criteria.
- Predetermination must be requested on one of the following completed forms:
  - Canadian Association of Orthodontist (CAO) Standard Orthodontic Information Form, or
  - Standard Dental Claim Form, or
  - Dental Claim and Treatment Plan Form, or
  - Pacific Blue Cross Dental Claim Form.
- Pre-treatment diagnostic records must include the following:
  - Diagnostic orthodontic models (in any of the formats below):
    - Physical models: either trimmed stone models or 3D-printed models with the centric occlusion position marked.
    - Photo models where overjet, overbite and labio-lingual spread are documented in millimeters (mm).
  - Cephalometric radiograph with associated scale for calibration.
  - Photographs: frontal and profile views; intra-oral depicting right and left occlusal relationship as well as anterior views.
  - Panoramic radiograph.

**Please note:** Written confirmation of client's oral health status from the general practitioner maybe requested upon the review of the case.

Pre-determination submissions which require additional documentation will be returned to the Provider with all supporting documentation. The only exception is scanned radiographs and/or photographs. Please ensure to re-submit the complete documentation package in the subsequent submission for our review. Documentation submitted with prior pre-determinations will not be considered and must be included with every submission.

## Automatic Qualifying Conditions (Items 1- 10)

The following 10 conditions are automatically considered as eligible malocclusion for orthodontic treatment. Please indicate on your submission if any of the following 10 Automatic Qualifying Conditions are present and ensure that appropriate supporting documentation is included for consultant review.

## Conditions, Interpretation and Completion Instructions

### 1. Cleft Lip/Palate or Craniofacial Anomaly

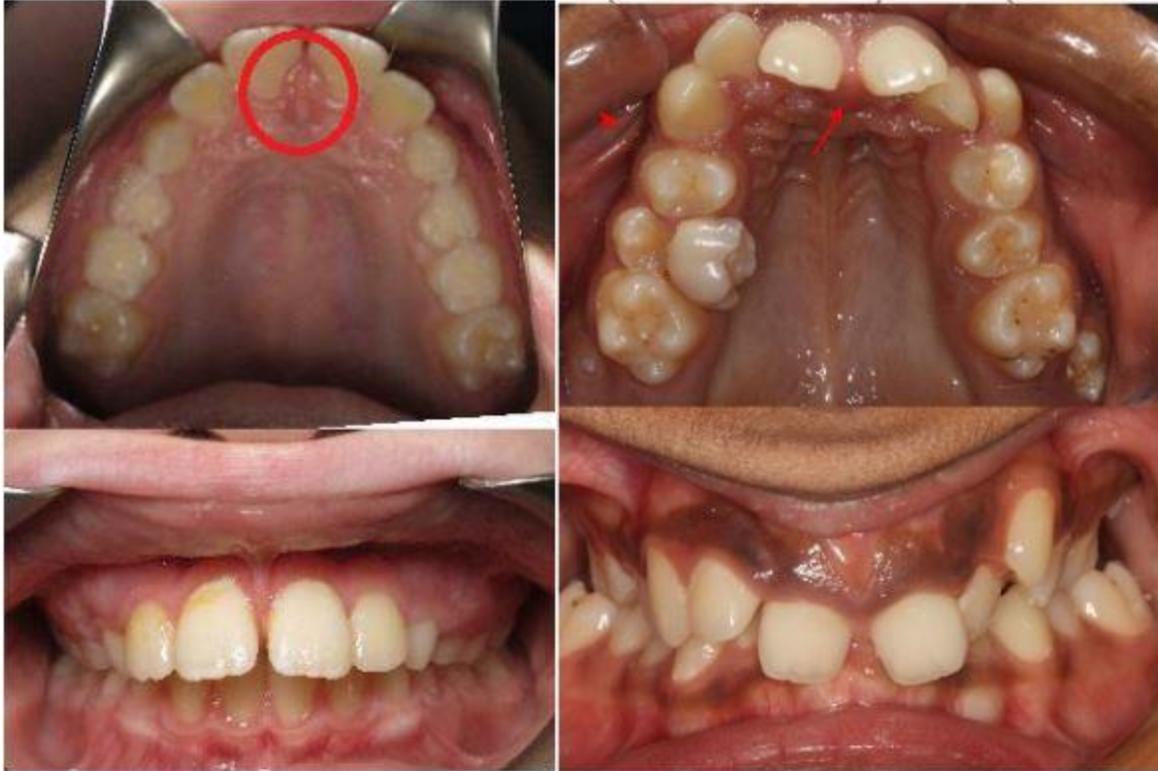
Documentation must include a written consultation report from a qualified specialist(s) treating the condition. The following is a list of conditions which may qualify (this list is reviewed annually and may be subject to change):

- Cleft lip and palate (bilateral, unilateral, cleft lip, cleft palate, cleft lip/palate)
- Severe amelogenesis imperfecta
- Severe dentinogenesis imperfecta
- Achondroplasia
- Acromegaly
- Apert's syndrome
- Beckwith-Wiederman Syndrome
- Binder's Syndrome
- Cleidocranial dysplasia
- Condylar hypoplasia
- Crouzon's syndrome
- Down syndrome
- Ectodermal dysplasia
- Epidermyolysis dystrophica bullosa
- Facial microsomia
- Goldenhar syndrome
- Gorlin syndrome
- Hemifacial microsomia
- Jacobson syndrome
- Kabuki syndrome
- Larsen syndrome
- Lateral facial dysplasia
- Lesch Nyhan syndrome
- Lennox Gestalt syndrome
- Mannosidosis
- Marfan syndrome
- Microcephaly
- Moebius syndrome
- Noonan syndrome
- Pierre Robin sequence
- Prader-Willi syndrome
- Rhombert syndrome
- Reiger syndrome
- Russell Silver syndrome
- Sturge-Weber syndrome
- Treacher Collins syndrome
- Turner syndrome
- William syndrome
- Velocardiofacial syndrome

### 2. Deep Impinging Overbite

This condition occurs when the lower incisors are causing destruction of the soft tissue on the palate. When the lower teeth are contacting the palatal tissues causing only slight indentations, this does not qualify. Tissue injury and/or clinical attachment loss must be present. This condition is often associated with excessive overjet. Intra-oral photographs are necessary to confirm the presence of this condition.

*Rationale: If left untreated, a deep impinging overbite can result in damage to the periodontium on the lingual surface of the maxillary incisors.*



**Figure 1.** Examples of deep impinging overbite causing damage to palatal tissues.

### 3. Severe Anterior Open Bite

This condition exists when there is no vertical overlap of the upper and lower incisors when the posterior teeth are in centric occlusion. The severity of the open bite is measured from the incisal edge of a fully erupted permanent maxillary central incisor to the incisal edge of an opposing mandibular incisor and must be greater than or equal to + 3 mm. In cases of pronounced protrusion associated with open bite, measurement of the open bite is not always possible. In those cases, a close approximation can usually be estimated.



**Figure 2.** Diagram showing measurement of anterior open bite.

When an anterior open bite is present measuring < 3 mm with no occlusal contact mesial to the first permanent molars in centric occlusion (must occur bilaterally) this also will automatically qualify. This condition is often associated with facial vertical disproportion. This condition will capture those cases that were previously approved with no anterior/posterior guidance with an anterior open bite measuring < 3 mm.

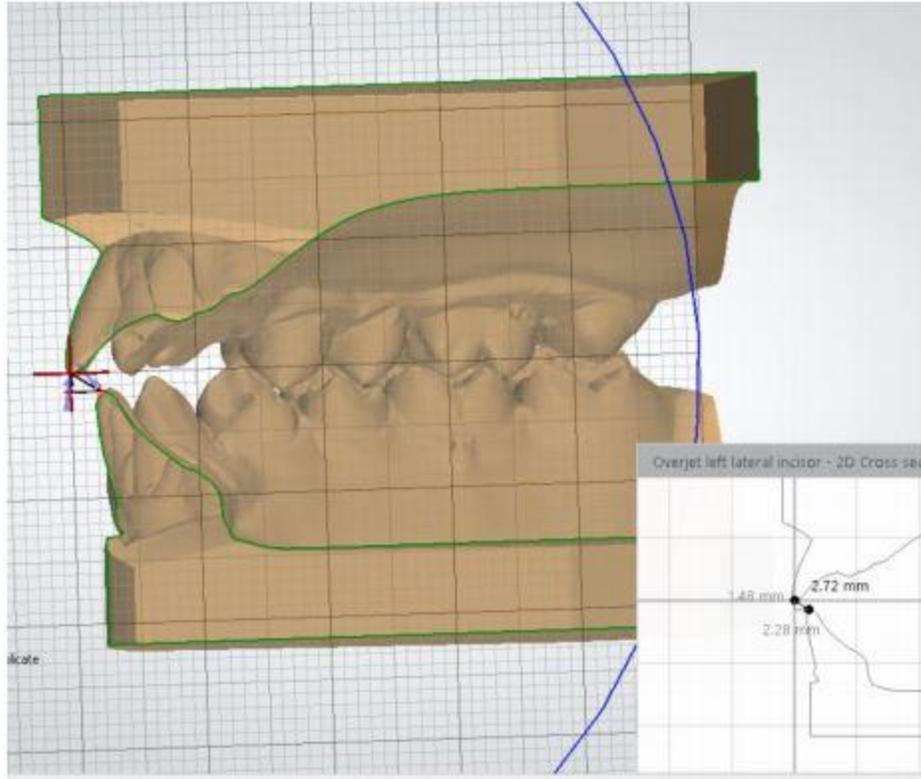


**Figure 3.** An example of a severe anterior open bite with occlusal contact only on the permanent molars.

In some cases, incomplete eruption of incisors can result in a marked localized open bite measuring greater than or equal to +3 mm. The following conditions which can contribute to incomplete incisor eruption are not considered automatic qualifying conditions:

- Permanent incisors which have not fully erupted (transitional/developmental open bite)
- Presence of a supernumerary tooth or retained primary tooth interfering with eruption of the permanent incisors
- Presence of an over-retained primary molar or stainless-steel crown impacting the vertical dimension of occlusion

*Rationale: If not corrected, an anterior open bite could lead to compromised mastication and contribute to speech difficulties, undesirable adaptation of the temporomandibular joint(s), dental compensations and dental attrition of posterior teeth.*



**Figure 4.** On digital models, the overbite measurement tool is used to measure the severity of the open bite from the incisal edge of a permanent maxillary central incisor to the incisal edge of an opposing mandibular incisor.

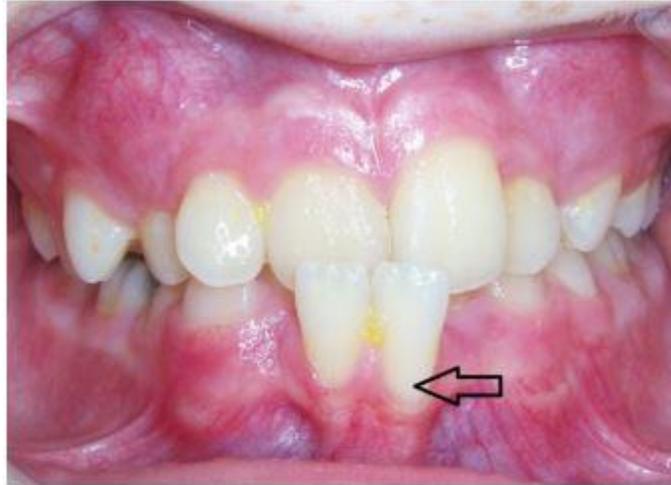


**Figure 5.** On physical models, the anterior open bite is scored by taking the greatest distance measured between the incisal edge of an upper central incisor to the incisal edge of an opposing lower incisor.

#### 4. Traumatic Anterior Crossbite

This condition occurs when an anterior cross-bite is present and causing attachment loss and gingival recession. A minimum of 1.5mm of tissue recession must be evident to qualify as soft tissue destruction in anterior crossbite cases.

*Rationale: If not corrected, a traumatic anterior crossbite could lead to periodontal deterioration of the affected teeth and eventual tooth loss.*



**Figure 6.** Evidence of gingival recession related to traumatic occlusion from an anterior cross-bite.

#### 5. Crossbites with Associated Functional Shift

This condition occurs when there are anterior or posterior cross-bites involving two or more adjacent maxillary teeth, associated with a significant functional shift (>2 mm) of the mandible either anteriorly and/or laterally in order to achieve maximum intercuspation. The provider must indicate the presence of a functional shift with estimated magnitude in mm.

*Rationale: If not corrected, a functional shift may lead to undesirable adaptation of the temporomandibular joint(s), asymmetric mandibular growth, dental compensations and dental attrition.*

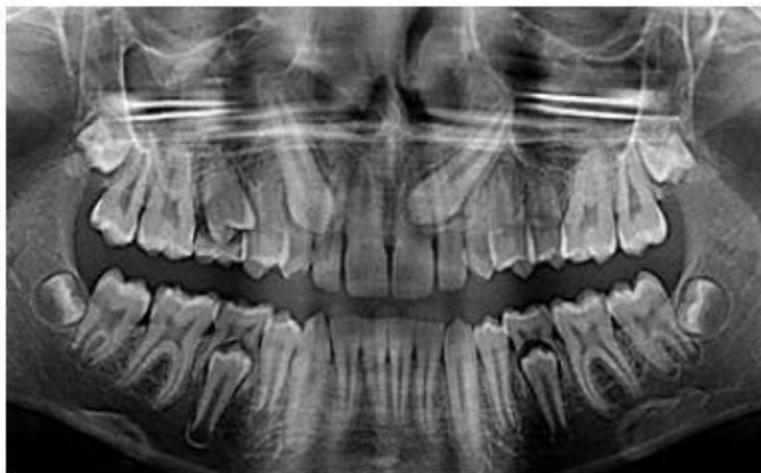


**Figure 7.** Example of posterior cross-bite involving two or more adjacent maxillary teeth with a significant lateral functional shift to the right (> 2 mm)

#### 6. Impacted Permanent Anterior Teeth

This condition exists when upper or lower permanent incisors/canines have: become displaced; fail to erupt into the oral cavity at the expected time; and are not indicated for extraction (i.e. in a recoverable position).

*Rationale: Impacted permanent anterior teeth can lead to root resorption on adjacent teeth and in rare cases a cyst could develop.*



**Figure 8 – Case which would qualify.** Example of impacted tooth 1.3/2.3 (displaced but recoverable) with retained tooth 5.3/6.3. With extraction of the retained primary teeth there will be sufficient space available to reposition the teeth.



**Figure 9 – Case which would not qualify.** Example radiograph/image of ectopically erupting tooth 1.3/2.3. Canine teeth are erupting parallel to long-axis of central incisors and clinically found to be displaced labially due to lack of space available. These teeth are considered “ectopically erupting” and not necessarily impacted as they are likely to eventually erupt into the oral cavity (often seen as high labial cuspids).



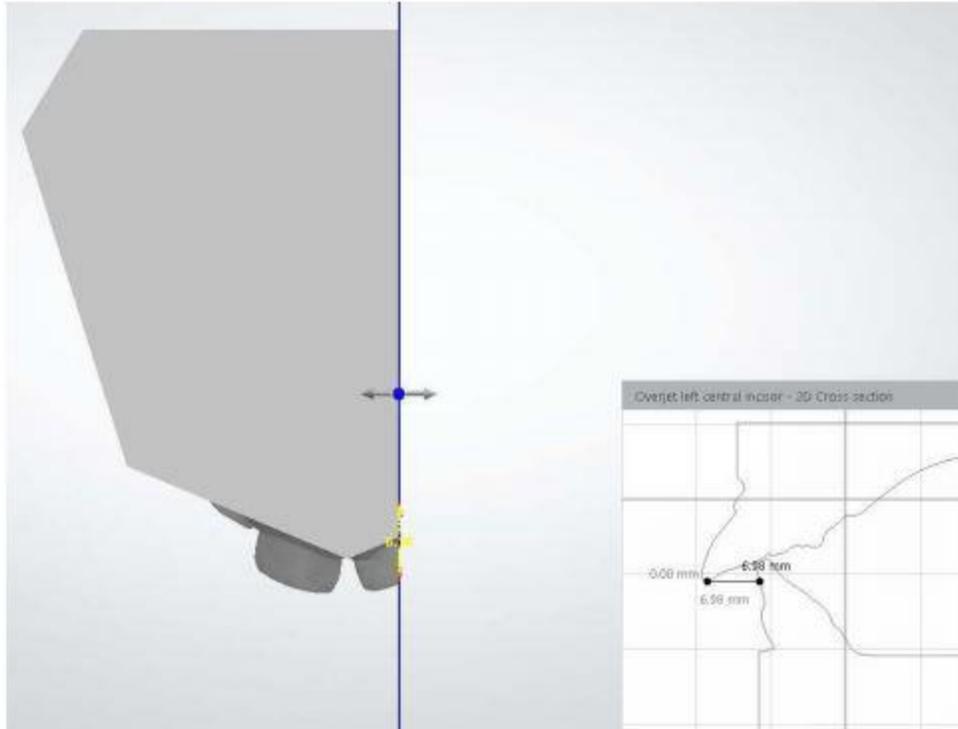
**Figure 10 – Case which would not qualify.** Example of non-recoverable impacted tooth 4.3 (displaced inferiorly across the midline).

### 7. Severe Traumatic Deviation

This condition exists when there has been damage to skeletal and soft tissue. For example, loss of a premaxilla segment by burns or by accident; the result of osteomyelitis; or other gross pathology.

### 8. Overjet Greater Than or Equal to +7 mm

Overjet is recorded with the patient’s teeth in centric occlusion and is measured from the labial of the lower incisors to the centre of the incisal edge of the most prominent maxillary central incisor and rounded to the nearest mm.



**Figure 11.** Overjet on digital models can be measured by bisecting the most prominent upper central incisor using the overjet measurement tool. The measurement is read and rounded off to the nearest mm and entered on the scoresheet.



**Figure 12.** Overjet on physical models is recorded with the patient's teeth in centric occlusion and measured from the labial of the lower incisors to the incisal edge of the most prominent central incisor, rounded off to the nearest mm and entered on the scoresheet.

### 9. Negative (Reverse) Overjet Greater Than or Equal to -3 mm

Reverse overjet is recorded with the patient's teeth in centric occlusion and is measured from the labial of the upper central incisors to the centre of the incisal edge of the most prominent mandibular central incisor and rounded to the nearest mm.



**Figure 13.** Negative or reverse overjet is measured from the labial of the upper central incisors to the incisal edge of the most prominent lower central incisor and rounded to the nearest mm.

### 10. Hypodontia

Condition exists where there is agenesis of six or more permanent teeth (excluding third molars) are missing.

### Internal Scoring Procedure (Items 11-18)

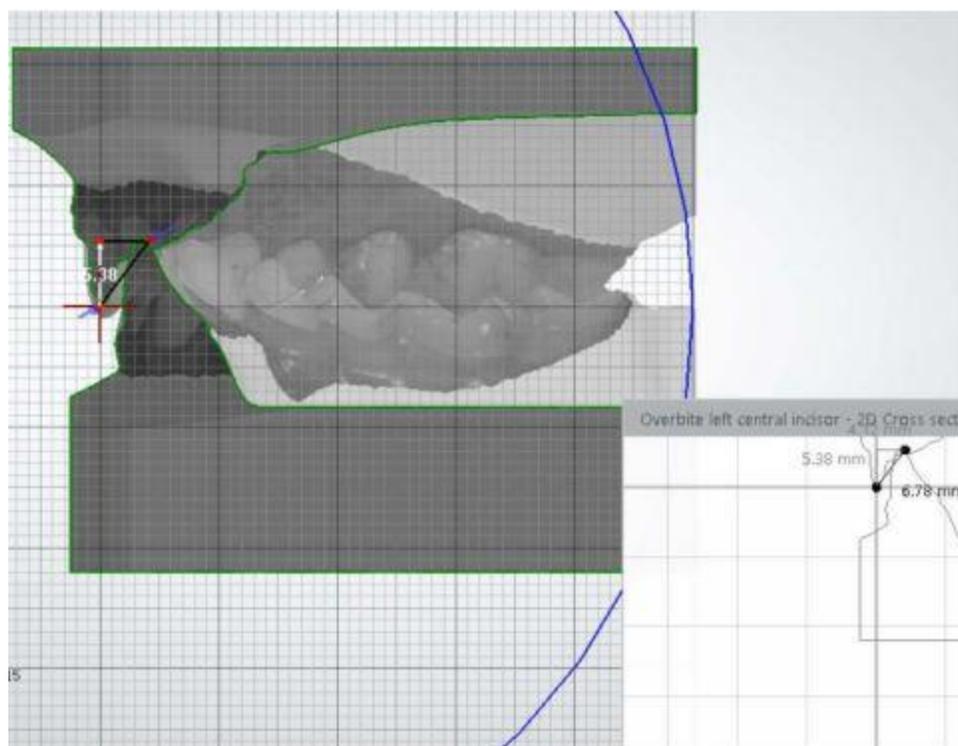
If there are no automatic qualifying conditions, the adjudicating consultant will proceed to score the case using the criteria and measurements indicated below. A score of 26 or higher will be approved for orthodontic treatment.

### 11. Overjet Less Than 7mm

Measure the overjet as outlined in item 8. The measurement, which is to be rounded to the nearest mm is to be recorded here.

### 12. Overbite

Measure the maximum vertical overlap of the central incisors over the lower incisors. Reverse (negative) overbite may exist in certain conditions (i.e. Class III malocclusions) and should be measured in the same manner. The measurement, in mm is to be recorded here.



**Figure 14.** When measuring overbite on digital models, an overbite measurement tool is used to determine the maximum overlap of the central upper incisors over the lower incisors, rounded to the nearest mm and entered on the scoresheet.



**Figure 15.** When measuring overbite on physical models, a mechanical pencil is used parallel to the occlusal plane to make a mark on the labial of the lower incisors where the edge of the upper central incisors overlaps them. Then the overbite is measured from the pencil mark to the lower incisor incisal edge, rounded to the nearest mm and entered on the scoresheet.

### 13. Negative (Reverse) Overjet Less Than 3mm

Measure the overjet as indicated in item 9, this value is entered on the score sheet and multiplied by 5. In cases where the central incisors are in an edge-to-edge relationship with the lower incisors, a value of 1 mm negative overjet is recorded and likewise multiplied by 5.

#### 14. Open Bite Less Than 3mm

An anterior open bite exists where there is no vertical overlap of the upper and lower incisors when the posterior teeth are in centric occlusion. The severity of the open bite is measured from the incisal edge of a fully erupted permanent maxillary central incisor to the incisal edge of an opposing mandibular incisor. In cases where the central incisors are in an edge-to-edge relationship with the lower incisors, a value of 1 mm open bite is recorded. The open bite measurement is a weighted condition and multiplied by 4.

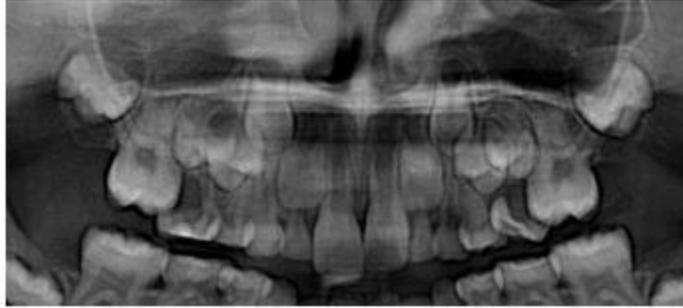
#### 15. Ectopic Eruption

Count each tooth, excluding third molars. Each qualifying tooth must be more than 50% blocked out of the arch. This is most often observed as ectopically positioned permanent canines or second premolars secondary to space deficiency. Enter the number of teeth on the score sheet and multiply by three (3). If anterior crowding is present with an ectopic eruption in the anterior portion of the mouth, score only the most severe condition. **DO NOT SCORE BOTH CONDITIONS.** However, posterior ectopic teeth can still be counted separately from anterior crowding when they occur in the same arch.

Specific clinical examples for consideration of ectopic eruption: (1) when a portion of the distal root of the primary second molar are resorbed during the eruption of the first molar. (2) transposed teeth; (3) regarding mutually blocked out teeth, only one will be counted; (4) in the mixed dentition, when a permanent tooth is erupting ectopically due to an over-retained primary tooth and extraction of the primary tooth would be expected to improve its position, this condition is NOT counted.



**Figure 16.** An example where anterior crowding is present together with ectopic eruption in the anterior portion of the mouth. In this case, the two ectopically erupting maxillary canine teeth would contribute a score of  $2 \times 3 = 6$  which would exceed the score of 5 for anterior crowding, so only ectopic eruption of the anterior teeth would be counted.



**Figure 17.** Example of ectopic eruption of the first maxillary molars causing resorption of the roots of the adjacent primary second molars.



**Figure 18.** Early loss of tooth 8.5 has resulted in space loss and ectopic eruption of tooth 4.5 to the lingual aspect of the alveolar process.



**Figure 19.** Example of ectopic eruption of tooth 3.7 (mandibular left second molar) causing displacement of tooth 3.6.



**Figure 20.** Extraction of tooth 6.3 would be expected to improve the position of tooth 2.3 and therefore tooth 2.3 is not counted as ectopic eruption.

### 16. Anterior Crowding

Arch length insufficiency must exceed 3.5 mm. Mild rotations that may react favourably to interproximal reduction or mild expansion procedures are not to be scored as crowded. Enter 1 point each for maxillary and mandibular anterior crowding. In general, no formal measurements are taken and only a visual assessment of the extent of crowding is required. If ectopic eruption exists for any of the anterior teeth, score the most severe condition. Do not score both conditions.



**Figure 21.** Example of mild crowding or arch length insufficiency less than 3.5 mm

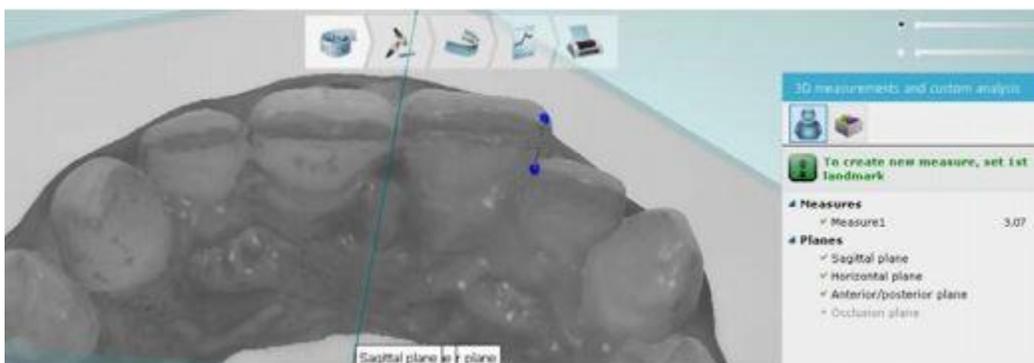
## 17. Labio-lingual Spread

Use a Boley gauge, mm ruler or digital caliper to determine the extent of deviation from a normal arch in the upper and lower anterior (canine-to-canine). Where there is only a protruded or lingually displaced anterior tooth, the measurement should be made from the incisal edge of that tooth to the normal arch line. Otherwise, the total distance between the incisal edge of the most protruded anterior tooth and the incisal edge of most lingually displaced adjacent anterior tooth is measured.

The labio-lingual spread probably comes close to a measurement of overall deviation from what would have been a normal arch. In the event that multiple anterior crowding of teeth is observed, all deviations from the normal arch should be measured for labiolingual spread, but **ONLY THE MOST SEVERE INDIVIDUAL MEASUREMENT SHOULD BE ENTERED ON THE INDEX.**



**Figure 22.** On a physical model, the incisal edges are marked with a pencil line and the distance between the most severe labio-lingual deviation of adjacent anterior teeth is measured and rounded to the nearest mm. The measurement is made parallel to the occlusal plane of the arch. This measurement is only recorded for one arch with the highest measurement.



**Figure 23.** On a digital model, a point-to-point linear measurement can similarly be made to measure the labio-lingual deviation of the incisal edges of adjacent anterior teeth parallel to the occlusal plane.

### 18. Posterior Unilateral Cross-bite

The cross-bite must involve two or more adjacent teeth, one of which must be a permanent molar. The crossbite must be one in which the maxillary posterior teeth involved may either be both palatal or both completely buccal in relation to the mandibular posterior teeth. The presence of posterior unilateral cross-bite is indicated by a score of four (4) on the scoresheet. NO SCORE for bilateral posterior cross-bite.



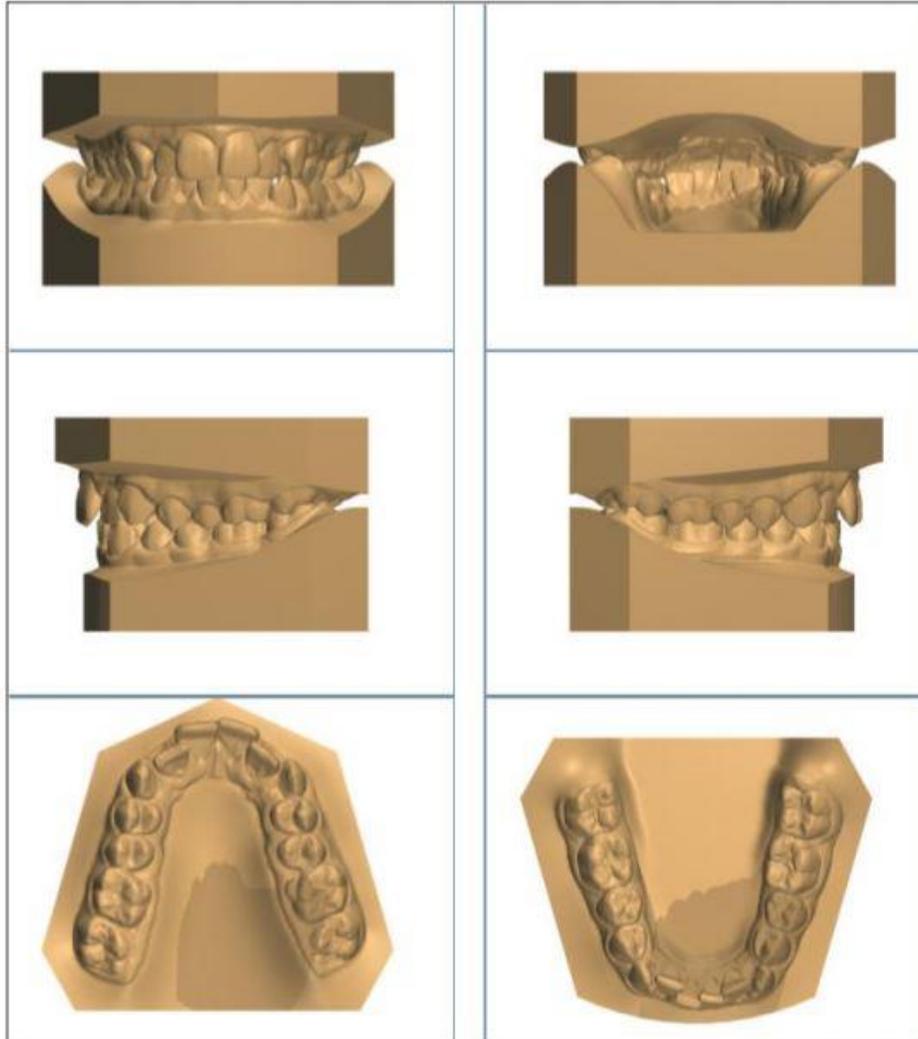
**Figure 24.** Example of posterior unilateral cross-bite involving two adjacent teeth (tooth 1.5/1.6), one of which is a molar. A score of 4 is counted.

### Example of Modified HLD Criteria Scoring

Based on the images below there are no automatic qualifiers. Overjet = + 4 mm,

Overbite = + 3 mm, no negative overjet, no anterior open bite, no ectopic teeth, anterior crowding present in MX/MD so  $2 \times 5 = 10$ , labiolingual spread (worst between 1.2/1.1) = 3 mm, there are unilateral cross-bites present on tooth 2.4/2.5 however not including a molar so no score.

Total score =  $4 + 3 + 10 + 3 = 20$  NOT APPROVED  $<26$





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