Othodontic Diagnosis and Treatment Plan

For

[Name Redacted]
Initial Appearance
characteristics of the malocclusion

upon the initial clinical evaluation the following characteristics were noted.

**dental evaluation**

male age 12 with a permanent dentition and a class ii division 1 malocclusion. the right side has a class ii molar of 5 mm, and a class ii cuspid of 5 mm. the left side has a class ii molar of 5 mm, and a class ii cuspid of 5 mm. dental crowding was estimated at 6 mm. in the lower arch and 9 mm. of crowding in the upper arch.

the vertical dimension is dental deep 60 percent deep. the transverse dimension of the dental arches showed a normal relationship upper to lower. the supporting structures of the teeth has no obvious problems.

additional features included a deep curve of spee, ovoid archform, and tapered upper incisors. the mandible seated in the fossa with a functional shift to the left.

**facial survey**

the patient has a mesofacial facial pattern, with a convex profile. the upper midline is right relative to the facial midline. the lips are average, the sublabial fold small, and the naso-labial angle is greater than 110°. the upper incisor shows 7 mm. of tooth below the resting upper lip, with 5 mm. of gingival display upon the highest smile given at the evaluation.

**myofunctional evaluation**

the lip competency was adequate, with lip tonicity being normal. breathing was observed to be nasal. the dental bite showed an overjet of 5 mm.

**temporo-mandibular joint evaluation**

normal function was observed. on the right side late clicking was noted. on the left side late clicking was noted. upon opening the jaw deviated to the left with a maximum opening of 30 mm.

**conclusions following the initial evaluation**

a verbal discussion was held, at which time several treatments were considered possible, including extraction and surgery for mandibular advancement. the estimated time of treatment was 24-30 months with an estimated fee of $6000 (+ $240 for two dental extractions).

the findings at the clinical examination were consistent with the patients’ chief complaint of crowded teeth, excessive protrusion, excessive overjet, facial appearance unaesthetic. when asked about the perception of protrusion, the patient’s opinion was: no opinion

it is estimated that the front teeth will advance 7.5 mm if a non-extraction treatment is chosen.
Notes to Patient

“Problems” list

1. **Skeletally class II** (upper jaw further forward of lowers)
2. Dentally class II (upper teeth forward of lowers) = 5mm
3. Crooked teeth
4. Crowded teeth
5. Wisdom teeth – are present with inadequate room
6. Tapered (smaller than ideal) upper lateral (upper 2\textsuperscript{nd} from midline) incisor teeth.

“Solutions” list

1. Skeletally class II (upper jaw further forward of lowers) – can perform surgery but unnecessary option because we can perform growth modification. This is done by promote lower jaw growth (relative to upper) by “unlocking” the lower jaw so front teeth do not touch – may require “opening bite” with temporary fillings on back teeth. This is likely to work well because there is plenty of growth left (see Cervical Vertebra Growth Assessment)
2. Corrected with braces, but requires tooth extraction (upper first molars 16 & 26) to create room to pull upper teeth back into mouth
3. Corrected with braces.
4. Corrected with braces, but requires tooth extraction (upper first molars 16 & 26) to create room.
5. Upper corrected by, tooth extraction (upper first molars 16 & 26) to create room for wisdom teeth. Lower wisdom teeth most likely will require extraction.
6. May require filling to enlarge teeth. To be assessed and placed at end of treatment – no charge if required.

Treatment plan

1. Extract upper 16, 26 molars – these teeth are hypoplastic (congenitally weaker than usual). This will
   - Mean that we no longer need to maintain these weakended teeth
   - Create room for upper wisdom teeth,
   - Room to correct class II
   - Room to correct crowded/crooked teeth
2. Braces and possibly elastics (worn by patient) to retract upper front teeth.
3. Braces to promote growth modification and allow lower jaw to grow forward

Other Technical Notes

- Minor growth modification indicated
- Tapered lateral incisors (smaller than usual) may require filling at end of treatment if there is a small gap
- Non extraction lower - use expansion wire.
- Note upper midline to right 2 mm. accounts for midline asymetry
- Need to lace posterior teeth for maximum anchorage from start.
- Skeletally open so exo upper 6’s
Cephalometric Numbers and Conclusions

Skeletal Summary

The Skeletal vertical dimension is Open with a dental Deep bite. At the time of initial evaluation growth was in a Vertical direction. The maxilla is positioned in Retruded position, and the mandible is Retruded. The relationship of the upper and lower jaws is Class I based on evaluation of the ANB and Wits measurements.

Dental Summary

The lower incisors are Retroclined with the antero-posterior position being Average. The upper incisors are Retroclined with the antero-posterior position being Average. Based on the cephalometric evaluation, the initial clinical impressions, and the patients’ feelings about the position of their teeth, a treatment objective has been decided to (not indicated).

<table>
<thead>
<tr>
<th>Description - Relationship</th>
<th>Measurement</th>
<th>Range</th>
<th>Mean</th>
<th>Patient Measurement - Progress</th>
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<tbody>
<tr>
<td>Palatal Plane to Mandibular Plane: Skeletal Open/Closed</td>
<td>ANS - PNS to Mand. Plane</td>
<td>24 (Closed) to 33 (Open)</td>
<td>28</td>
<td>36.3</td>
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<td>Mand Plane Angle Skeletal Open/Closed</td>
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<td>20(Closed) to 30(Open)</td>
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<td>Y-Axis - Vert/Hor Growth</td>
<td>SGN - FH</td>
<td>57 (Horizontal) to 62 (Vertical)</td>
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<td>ANB</td>
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<td>Interincisal Angle</td>
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<td>Lower Incisor Inclination</td>
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A personalized appliance has been designed for the treatment of malocclusion after considering the characteristics of the malocclusion, the final desired aesthetics, the long-term retention, and the unwanted tooth movements from force application. This appliance includes selection of brackets, bands, and archwires with a custom prescription to obtain the most optimal treatment results.

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<th>Bracket/Band</th>
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Archwire selection

The lower archform was selected to slightly expand the dental arches, and was chosen to be ovoid, medium. The upper archform was selected to maintain the dental arches, and was chosen to be ovoid, medium.

Cervical Vertebra Growth Assessment

Patient: [Redacted]

Date: [Redacted]

Growth Stage: 2-2.5

Estimated Mandible growth = 3mm
Cephalometric Analysis - Start

Skeletal
- Palatal Plane-Mandibular plane = 36.32°
- Mandibular Plane Angle (f MA) = 34.73°
- Lower face height (ANS-Me) = 70.42mm
- Y-Axis = 02.55°
- Nasion Perpendicular to A point = -2.45mm
- SNA = 73.00°
- Mandibular Length = 93.63mm
- Nasion Perpendicular to Pogonion = -12.79mm
- SNB = 69.86°
- Mandibular Length = 115.78mm
- ANB = 3.74°
- Wits = -1.87mm

Dental/Facial
- Interincisal Angle = 127.88°
- Lower 1MP = 88.20°
- Lower 1NB = 5.59mm
- Lower 1Apo = 2.58mm
- Upper 1SN = 94.75°
- Upper 1Apo = 9.54mm
- Upper 1 to A vertical = 5.45mm
- Stomion to Incision = 6.56mm
- Nasolabial Angle = 120.22°
- EPlane Upper = -0.45mm
- EPlane Lower = 2.17mm

Cephalometric Analysis - Progress
Skeletal
Palatal Plane Mandibular plane = 36.32°
Mandibular Plane Angle (FMA)= 34.73°
Lower face height (ANS-Me) = 70.42mm
Y-Axis = 62.55°
Nasion Perpendicular to A point = -2.45mm
SNA = 73.50°
Maxillary Length = 93.63mm
Nasion Perpendicular to Pogonion = -12.79mm
SNB = 69.86°
Mandibular Length = 115.78mm
ANB = 3.74°
WITS = 1.67mm

Dental/Facial
Interincisal Angle = 127.88°
Lower 1MP = 88.28°
Lower 1NB = 8.05mm
Lower 1APo = 5.07mm
Upper 1SN = 94.75°
Upper 1APo = 9.54mm
Upper 1 to A vertical = 5.45mm
Sptomion to Incision = 6.96mm
Nasohalial Angle = 120.22°
EPlane Upper = -0.45mm
EPlane Lower = 2.17mm

Model Analysis - Start
**Archwire Selection**

- Shape Of Mandible = Tapered Mandible R2
- Lower Archwire = Lower Medium Ovoid
- Upper Archwire = Upper Medium Ovoid
- Lower Loop Size = 25.67
- Upper Loop Size = 33.45

**Archlength Discrepancy and Incisor Advancement**

- Lower Archlength Discrepancy = 5.28mm
- Lower Incisor Advancement = 2.84mm
- Upper Archlength Discrepancy = 8.90mm
- Upper Incisor Advancement = 4.49mm

**Axisymmetry Right vs. Left**

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<th>Discrepancy</th>
<th>Right</th>
<th>Left</th>
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<td>13-23</td>
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**Maxillary and Mandibular Molar widths**

- Lower 36B-46B = 47.19mm
- Upper 16C-26C = 50.30mm

**Mixed Dentition Analysis**

- 42.D = 6.44mm
- 41.D = 6.49mm
- 31.M.D = 5.92mm
- 32.M.D = 6.83mm
- Sum 32-42 = 25.67mm

- Predicted size lower 34.5 = 23.801mm
- Space available for 45/44.43 - 8.41mm
- Total lower crowding (+) or space (-) = 11.44mm

**Lower Tooth Rotations**

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<td>9.91°</td>
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**Upper Tooth Rotations**

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Model Analysis – Extraction Model

**Lower Incisor Movement**
- Original Lower APO = 5.67mm
- Original Lower Lip to EPlane = -2.17mm
- Lower Incisor Advancement = 2.81mm
- Lower Closing Vertical Change = -1.588mm

**Upper Incisor Movement**
- Original Upper APO = 9.54mm
- Original Upper Lip to EPlane = 0.45mm
- Upper Incisor Advancement = 4.37mm
- Upper Closing Vertical Change = -1.714mm

**Upper Incisor Movement**
- Original Lower MP = 93.20°
- Lower Lip to EPlane Change = -1.16mm
- Lower Procline Inclination Change = -6.61°
- Lower Convex Lip Change = 3.12°

**Upper Incisor Movement**
- Original Upper SN = 84.75°
- Upper Lip to EPlane Change = -0.49mm
- Upper Procline Inclination Change = 9.81°
- Upper Convex Lip Change = 7.82°
Virtual Treatment Outcome – Extraction VTO

**Archwire Selection**
- Shape Of Mandible = Tapered Mandible #2
- Lower Archwire = Lower Medium Ovoid
- Lower Loop Size = 25.67
- Upper Archwire = Upper Medium Ovoid
- Upper Loop Size = 33.45

**Archlength Discrepancy and Incisor Advancement**
- Lower ArchLength Discrepancy = 5.28mm
- Upper ArchLength Discrepancy = 0.28mm
- Lower Incisor Advancement = 2.04mm
- Upper Incisor Advancement = 0.14mm

**Asymmetry Right vs. Left**
- 30-40 Discrepancy = 1.44mm
- 35-45 Discrepancy = 2.04mm
- 41-44 Discrepancy = 2.03mm
- 33-43 Discrepancy = 0.84mm
- 10-20 Discrepancy = 0.83mm
- 15-25 Discrepancy = 0.09mm
- 14-24 Discrepancy = 0.16mm
- 13-23 Discrepancy = 0.38mm

**Maxillary and Mandibular Molar widths**
- Lower 36B-46B = 47.19mm
- Upper 16C-26C = 58.30mm

**Mixed Dentition Analysis**
- 42D-M = 6.44mm
- 41D-M = 6.49mm
- 31M-D = 5.92mm
- 32M-D = 6.83mm
- Sum 32-42 = 25.67mm
- Predicted size lower 3,4,5 = 23.80mm
- Space available for 35,44,43 = 0.44mm
- Total lower crowding (+) or space (-) = 11.44mm

**Lower Tooth Rotations**
- 35 Rotation = D 11.90°
- 34 Rotation = D 12.05°
- 33 Rotation = D 31.34°
- 32 Rotation = D 8.97°
- 31 Rotation = D 6.91°

**Upper Tooth Rotations**
- 15 Rotation = M 3.20°
- 14 Rotation = M 1.71°
- 13 Rotation = D 6.04°
- 12 Rotation = D 9.39°
- 11 Rotation = D 3.37°
- 25 Rotation = D 16.29°
- 24 Rotation = D 19.05°
- 23 Rotation = D 3.76°
- 22 Rotation = D 3.59°
- 21 Rotation = D 9.95°
**Lower Incisor Movement**

- Original Lower APO = 5.67mm
- Original Lower Lip to EPlane = 2.17mm
- Lower Incisor Advancement = 2.81mm
- Lower Closing Vertical Change = -1.580mm

**Upper Incisor Movement**

- Original Upper APO = 9.54mm
- Original Upper Lip to EPlane = -0.45mm
- Upper Incisor Advancement = 0.06mm
- Upper Closing Vertical Change = 0.026mm

- Original Lower MP = 88.28°
- Lower Lip to EPlane Change = 1.19mm
- Lower Procline Inclination Change = 6.61°
- Lower Convex Lip Change = 3.12°

- Original Upper SN = 84.75°
- Upper Lip to EPlane Change = -1.87mm
- Upper Procline Inclination Change = 0.19°
- Upper Convex Lip Change = 0.61°
Things you need to know about Orthodontic treatment.

As with all dental treatment, orthodontic treatment has possible risk complications. The possible risks are not limited to this list, but these are the most common.

**Tooth decay and gum disease.** Orthodontic appliances make it harder to clean teeth and gums. Additional effort is required of the patient to maintain their teeth, gums, and bone. Failure to do this can result in decay, and gum disease. In extreme cases, tooth loss is possible.

**Root resorption.** Shortening of the tooth during orthodontic treatment. Since there is no accurate method of predicting which cases will have root resorption, progress x-rays will be requested during treatment to evaluate the condition of the tooth roots.

**Incomplete bite correction.** Patient compliance with the treatment instructions is required for the success of treatment. A lack of patient compliance and/or the inherent skeletal resistance of the malocclusion may result in incomplete bite correction.

**Jaw Joint symptoms.** There may already be jaw joint problems before treatment has started, even if symptoms were not initially present. Changing the bite can sometimes aggravate these joints, resulting in pains to the head, jaws, and face.

**Open contacts after orthodontics.** Small spaces are always left between the back teeth at the end of treatment. Almost always they close spontaneously or with help from the orthodontic retainer. In some cases, spaces fail to close. The usual treatment is to place a filling or a crown to close gaps between the teeth.

**Surgery.** Surgery may be part of your treatment, including, but not limited to tooth extraction, gingival grafting, corticotomy, and orthognathic (jaw) surgery. The usual risks associated with dental surgery include excessive bleeding, loss of flaps with exposed bone and delayed healing, damage to the teeth, nerve damage, and loss of tooth vitality.

**More orthodontics due to maturation.** Growth may continue after the completion of active orthodontic treatment. In severe cases, retreatment may be necessary to re-establish the correct bite after growth is completed. In cases III malocclusions, the severity can be such that surgery to the jaws may be required to correct the bite.

**Change in treatment plan.** Although the best effort has been made to make the most complete diagnosis and the most accurate treatment decision, it is possible that changes in the treatment plan may be required during treatment to reach the best outcome.

The goals, limitations, and treatment alternatives, and risks have been presented to me, and I request treatment as suggested.

Signed

Date
Dr Alan Lam agrees to provide orthodontic care to [ Blank ] for the total fee of $6000 + $240 for extraction of upper 6’s. Treatment is expected to take 18-24 months, with appointment intervals ranging from 4-12 weeks. The initial banding fee is $3000 + 240 (extractions) is due at the initial banding/bonding appointment. The remaining treatment fee to be divided into 10 payments of $300.

It is understood that the full amount (total fee) is due before removal of the orthodontic appliances, no matter what the reason to discontinue treatment.

The above orthodontic fee does NOT include fees for the following:

- Retention - clear upper and lower retainers – estimate $240. If other retainers are necessary, this will be discussed and quoted closer to debanding.
- Ongoing hygiene costs + x rays. This may be done every 6 months, at deband (end of orthodontic treatment), and when required.
- bridges/crowns – not applicable in this case
- dental fillings – not applicable in this case
- possible bonding or veneers after orthodontics – not applicable in this case
- fiberotomy – not applicable in this case
- corticotomy – not applicable in this case
- gingival grafts – not applicable in this case
- cosmetic gingivectomy – not applicable in this case
- ceramic/plastic brackets – not applicable in this case
- Occlusal splint – not applicable in this case

It is expected that the patient will maintain their orthodontic appliances during the treatment time. In the event of breakage or loss of an appliance, an extra fee will be charged for its repair or replacement. These may include:

- functional appliance
- headgear and/or facebow
- orthodontic brackets
- archwires
- retainers
- other

The person(s) responsible for the payment of this account agree to the above terms and conditions.

Responsible person(s) __________________________ Date __________