Appendix A
Handicapping Labio-Lingual Deviations Form
(The HLD Index No. 4)

The Handicapping Labio-Lingual Deviations Form (HLD) is a quantitative, objective method for measuring malocclusion. The HLD provides a single score, based on a series of measurements that represent the degree to which a case deviates from normal alignment and occlusion. You will need this form and a measurement tool.

Procedure:
1. Occlude patient or models in occlusion position.
2. Record all measurements in the order given, and rounded off to the nearest millimeter.
3. **Enter score "0" if condition is absent.**
4. Start by measuring **overjet** of the most protruding incisor.
5. Measure overbite from the labio-incisal edge of overlapped front tooth (or teeth) to point of maximum coverage.
6. Score all other conditions listed.
7. **Ectopic eruption and anterior crowding: Do not double score.** Record the more serious condition.
8. Deciduous teeth and teeth not fully erupted should not be scored.

Patient's Name (please print)		D.O.B.	Subscriber ID	
Street Address	City		State	Zip Code

Conditions Observed	HLD Score
Cleft Palate	Score "X":
Deep Impinging Overbite	Score "X":
Anterior Impactions	Score "X":
Severe Traumatic Deviations	Score "X":
Overjet greater than 9mm	Score "X":
Reverse overjet greater than 3.5mm	Score "X":
Severe Maxillary Anterior Crowding, greater than 8mm	Score "X":
Overjet in mm	x1:
Overbite in mm	x1:
Mandibular Protrusion in mm – see scoring instructions	x5:
Open Bite in mm	x4:
Ectopic Eruption, (Number of teeth, excluding third molars)	x3:
Anterior Crowding: ☐ Maxilla ☐ Mandible Add 5 points for each arch if applicable.	
Labio-Lingual Spread, in mm (anterior spacing) – see scoring instructions	x1:
Posterior Unilateral Crossbite	Score 4:
Posterior Impactions or congenitally missing posterior teeth (excluding third molars)	x3:
Total	

A score of 28 and over constitutes a severe and handicapping malocclusion.

I certify under the pains and penalties of perjury that I am the treating dentist identified on this form. I certify that the medical necessity information on this form is true, accurate, and complete, to the best of my knowledge. I understand that I may be subject to civil penalties or criminal prosecution for any falsification, omission, or concealment of any material fact contained herein.

Signature of treating dentist: _____ **Date:** _____

Printed name of treating dentist: _____
(Signature and date stamps, or the signature of anyone other than the provider, are not acceptable.)

Handicapping Labio-Lingual Deviation Index Scoring Instructions

All measurements are made with a measurement tool scaled in millimeters. Absence of any conditions must be recorded by entering "0" (See attached form).

The following information should help clarify the categories on the HLD Index.

1. **Cleft Palate Deformities:** Indicate an "X" on the form. *(This condition is considered to be handicapping malocclusion.)*

2. **Deep Impinging Overbite:** Indicate an "X" on the form when lower incisors are destroying the soft tissue of the palate. *(This condition is considered to be handicapping malocclusion.)*

3. **Anterior Impactions:** Indicate an "X" on the form. Anterior impactions include central incisors, lateral incisors, and canines in the maxillary and mandibular arches. *(This condition is considered to be handicapping malocclusion.)*

4. **Severe Traumatic Deviations:** Indicate an "X" on the form. Traumatic deviations are, for example, loss of a premaxilla segment by burns or by accident; the result of osteomyelitis; or other gross pathology. *(This condition is considered to be handicapping malocclusion.)*

5. **Overjet greater than 9mm:** Indicate an "X" on the form. This is recorded with the patient in the centric occlusion and measured from the labial of the lower incisor to the labial of the upper incisor. The measurement could apply to a protruding single tooth as well as to the whole arch. The measurement is read and rounded off to the nearest millimeter and entered on the form. *(This condition is considered to be handicapping malocclusion.)*

6. **Reverse overjet greater than 3.5mm:** Indicate an "X" on the form. This is recorded with the patient in the centric occlusion and measured from the labial of the lower incisor to the labial of the upper incisor. *(This condition is considered to be handicapping malocclusion.)*

7. **Severe Maxillary Anterior Crowding, greater than 8mm:** Indicate an "X" on the form. *(This condition is considered to be handicapping malocclusion.)*

8. **Overjet in Millimeters:** This is recorded with the patient in the centric occlusion and measured from the labial of the lower incisor to the labial of the upper incisor. The measurement could apply to a protruding single tooth as well as to the whole arch. The measurement is read and rounded off to the nearest millimeter and entered on the form.

9. **Overbite in Millimeters:** A pencil mark on the tooth indicating the extent of overlap facilitates this measurement. It is measured by rounding off to the nearest millimeter and entered on the form. "Reverse" overbite may exist in certain conditions and should be measured and recorded.

10. **Mandibular Protrusion in Millimeters:** Score exactly as measured from the buccal groove of the first mandibular molar to the MB cusp of the first maxillary molar. The measurement in millimeters is entered on the form and multiplied by 5.

11. **Open Bite in Millimeters:** This condition is defined as the absence of occlusal contact in the anterior region. It is measured from edge to edge in millimeters. This measurement is entered on the form and multiplied by 4. 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.

12. **Ectopic Eruption:** Count each tooth, excluding third molars. Enter the number of ectopic teeth on the form and multiply by 3. If Condition No. 13, Anterior Crowding, is also present, with an ectopic eruption in the anterior portion of the mouth, score only the most severe condition. Do not score both conditions.

13. **Anterior Crowding:** Arch length insufficiency must exceed 3.5mm. Mild rotations that may react favorably to stripping or mild expansion procedures are not to be scored as crowded. Enter 5 points for maxillary and mandibular anterior crowding. If Condition No. 12, ectopic eruption, is also present in the anterior portion of the mouth, score the most severe condition. Do not score both conditions.

14. **Labio-Lingual Spread:** The measurement tool is used to determine the extent of deviation from a normal arch. 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 most protruded tooth and the lingually displaced 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 labio-lingual spread, but only the most severe individual measurement should be entered on the index.

    B. Additionally, anterior spacing may be measured as the total score in mm from the mesial of cuspid to the mesial of cuspid, totaling both arches.

    Only score the greater score attained by either of these two methods.

15. **Posterior Unilateral Crossbite:** This condition involves two or more adjacent teeth, one of which must be a 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 crossbite is indicated by a score of 4 on the form.

16. **Posterior impactions or congenitally missing posterior teeth:** Total the number of posterior teeth, excluding third molars that meet this criterion and multiply by 3.