

HANDICAPPING
MALOCCLUSION
ASSESSMENT TO ESTABLISH
TREATMENT PRIORITY

J. A. SALZMANN, D.D.S.
New York, N.Y.

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Handicapping malocclusion assessment to establish treatment priority

J. A. SALZMANN, D.D.S.

New York, N. Y.

THE purpose of the Handicapping Malocclusion Assessment Record form is to provide a means for establishing priority for treatment of handicapping malocclusion in the individual child according to severity as shown by the magnitude of the score obtained in assessing the malocclusion from dental casts or directly in the oral cavity.

The Council on Dental Health of the American Dental Association, the Council on Dental Care Programs of the American Dental Association, and the Board of Directors of the American Association of Orthodontists have approved the assessment record forms and the definition of handicapping malocclusion here presented (*Journal of the American Dental Association*, pages 1441-1442, June, 1967). Copies of the Handicapping Malocclusion Assessment Record forms and instructions for their use are available from the A.D.A. Council on Dental Health, 211 East Chicago Ave., Chicago, Illinois 60611.

METHOD OF ESTABLISHING A CUT-OFF POINT

With the help of the Handicapping Malocclusion Assessment Record forms, a random sample is obtained of the frequency and range of severity of the malocclusion that occurs in the child population in the community. The potential case load is thus established.

A cut-off point is set at an assessment score that will permit treatment of patients by the professional personnel available in the community and in keeping with the funds budgeted for orthodontics. Priority of treatment is accorded those children with the highest scores, followed in order by those with scores of decreasing magnitude but above the established cut-off point.

EXAMPLE (FIG. 1). In a community of 3,000 children, the sampling indicates that 450 (15 per cent) have assessment scores of 5 points or more, but professional personnel, available funds, or both, will permit treatment of 250 children only. Priority for treatment is then given to the children with the highest scores, in decreasing order, until 250 children are included. The cut-off point is then set. In the chart shown in Fig. 1, the cut-off is at 20 points.

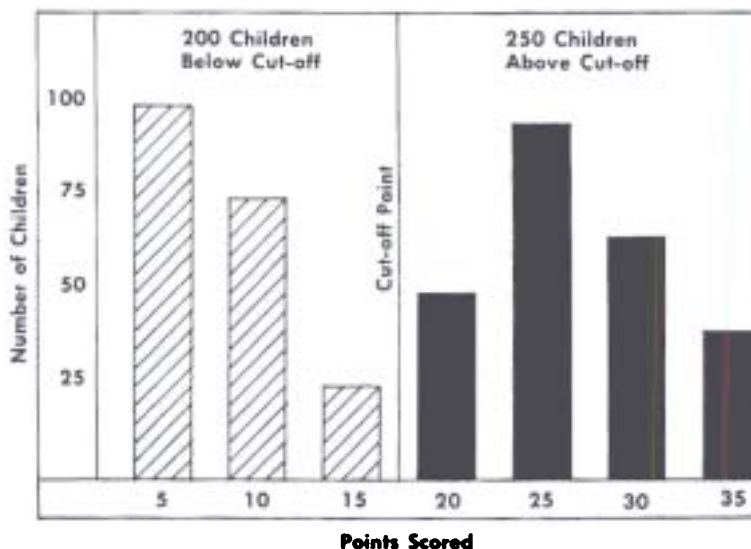


Fig. 1. Distribution of 450 children with handicapping malocclusion. Only 250 children can be treated. The cut-off point is set to include 250 children with the highest scores in decreasing order; the cut-off here is at 20 points. This bar graph illustrates method of establishing a cut-off point.

DEFINITION

Handicapping malocclusion and handicapping dentofacial deformity are conditions that constitute a hazard to the maintenance of oral health and interfere with the well-being of the child by adversely affecting dentofacial esthetics, mandibular function, or speech.

The Handicapping Malocclusion Assessment Record form is not designed to ascertain the presence of occlusal deviations ordinarily included in epidemiologic surveys of malocclusion or for clinical orthodontic examinations. Etiology, diagnosis, planning and complexity of treatment, and prognosis are not factors in this assessment.

Assessments can be made from casts or directly in the mouth of the patient. An additional record form is provided for direct mouth assessment which permits recording and scoring of mandibular function, facial asymmetry, lower lip malposition in relation to the maxillary incisor teeth, and desirability of treatment. (It is advisable to have a copy of the record form available for reference when following these instructions.)

The Handicapping Malocclusion Assessment Record form is shown in Fig. 2. In order to avoid being influenced by considerations of etiology, treatment planning, difficulty and duration of treatment, and other professional value judgments not pertinent to this assessment, the assessor should not spend undue time in examining the casts. Scoring should be based on the first impression. The instructions should be followed carefully. The numbers 1 to 72 in the squares and rectangles of the assessment form (Fig. 2) are for use on punch cards when correlations are to be made by computer.

The teeth in malocclusion are assessed according to the criteria and the weights or point values assigned to them. The relative point values are based on clinical orthodontic experience from the standpoint of the usual contributory effects of various types of malocclusion on dental health, function, and esthetics.

The point values of the Handicapping Malocclusion Assessment Record forms were tested by orthodontists from various parts of the United States. They assessed dental casts of patients with untreated malocclusion of various degrees of severity. The scores obtained were found to show an extremely high correlation with subjective clinical ratings of severity of malocclusion of the same casts.

INSTRUCTIONS FOR SCORING

The assessor should score 2 points for each affected maxillary incisor and 1 point for each affected maxillary posterior tooth and for each affected mandibular anterior and posterior tooth.

Fig. 3 shows the division of the dentition for scoring. The maxillary anterior segment includes the four incisors only. Two points should be scored for each deviated maxillary incisor and 2 points for each *visible crest* of the interdental papilla of spaced maxillary teeth from canine to canine.

The mandibular anterior segment also includes the four incisors, for which only 1 point is scored for each deviated incisor tooth and 1 point for each *visible*

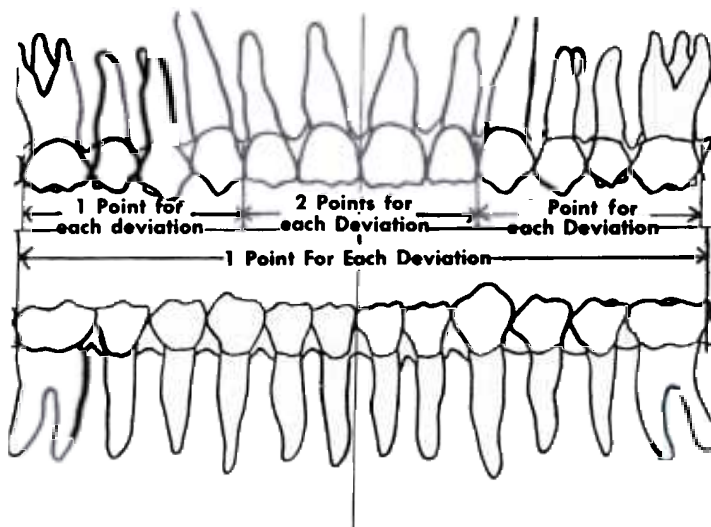


Fig. 3. Division of dentition for scoring. The anterior sections include the four incisors only. The posterior sections include the canines, first and second premolars, and first molars. The second molars may be used when the first molars are missing; otherwise, they are not included in the assessment. Score 2 points for each deviated maxillary incisor. Score 2 points for each visible crest of a maxillary incisor papilla. Score 1 point for each maxillary posterior tooth deviation. Score 1 point for each deviated mandibular anterior and posterior tooth. Score 1 point for each visible crest of a papilla of spaced mandibular incisors and for each spaced posterior tooth when both its mesial and distal papillae crests are visible.

crest of the interdental papilla from canine to canine when the incisors are spaced.

The posterior segments in the maxilla and in the mandible include the canines, first and second premolars, and first molars. One point only is scored for each posterior tooth deviation and for each spaced posterior tooth (not papilla) when both the crests of the mesial and distal interdental papillae are visible.

When the maxillary anterior score under A (intra-arch deviation) plus the score of the anterior segment under B (interarch deviation) (Fig. 2) equals 6 points or more, 8 additional points are added to the grand total score to denote the presence of an esthetic handicap.

INTRA-ARCH DEVIATION. *Intra-arch deviation* assessment is made by placing the casts, teeth upward, in direct view of the assessor (Fig. 4). The number of teeth affected is recorded as indicated on the Handicapping Malocclusion Assessment Record form. When a series of assessments is made, the score can be computed at a later time.

Missing anterior (Fig. 4, A) and *posterior teeth* (Fig. 4, C) are assessed by

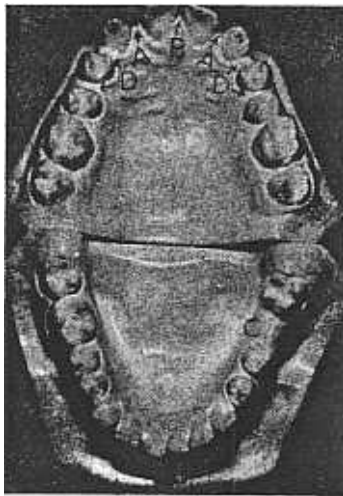


Fig. 4

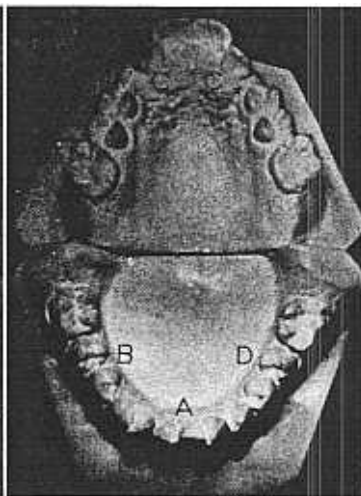


Fig. 5

Fig. 4. Method of placing casts for intra-arch assessment. A, Missing anterior teeth. B, Open anterior space between maxillary central incisor teeth. Score 2 points for the papilla here visible. C, Missing posterior tooth. D, The right and left maxillary first premolars are spaced on their mesial and distal sides. Score 1 point for each premolar (posterior teeth), not the spaces.

Fig. 5. Crowded anterior and posterior teeth. A, The mandibular incisors are crowded; score 1 point for each tooth. B, The mandibular right second premolar is crowded; score 1 point for this posterior tooth. C, The maxillary right and left lateral incisor teeth are scored as rotated because they can be aligned without moving other teeth in the arch; score 2 points for each rotated incisor. D, The mandibular left second premolar is rotated (*see text*); score 1 point for this posterior tooth. E, The maxillary right canine is scored for closed space because it does not have sufficient space for erupting; score 1 point for the canine. F, The maxillary left canine space does not show the canine through the alveolar crest and is scored as missing; score 1 point for this missing posterior tooth.



Fig. 6. Closed spacing of anterior teeth. Space is not sufficient for the lateral incisors to erupt into normal alignment without moving other teeth in the arch.

actual count. An unerupted tooth, a severely carious nonfunctioning tooth, or a tooth with only the roots remaining is recorded as missing.

Crowded anterior (Fig. 5, A) and posterior teeth (Fig. 5, B) refers to positional irregularities of the tooth crowns that interrupt the continuity of the arc of the dental arch and the space is insufficient for tooth alignment without moving adjacent teeth in the same arch. A tooth recorded as crowded is not recorded also as rotated.

Rotated anterior teeth (Fig. 5, C) refers to positional irregularities of tooth crowns that interrupt the continuity of the arc of the dental arch, but there is sufficient space for tooth alignment without the necessity of moving adjacent teeth in the arch. A tooth recorded as rotated is not recorded also as crowded.

Rotated posterior teeth (Fig. 5, D) refers to irregularities of tooth crowns that interrupt the continuity of the arc of the dental arch; all or part of the lingual or buccal surface faces some part of the adjacent proximal tooth surfaces; there is sufficient space for tooth alignment without moving adjacent or other teeth in the arch. A tooth recorded as rotated is not recorded also as crowded.

Open spacing of anterior teeth (Fig. 4, B) refers to incisor tooth separation that exposes to view the crest of the interdental papillae. One should record the number of papillae visible from mesial of canine to mesial of canine (not the teeth).

Closed spacing of anterior teeth (Fig. 6) refers to space closure that will not permit a partially erupted tooth to complete its eruption without moving adjacent or other teeth in the same arch. The number of teeth affected should be recorded. A tooth recorded as showing closed spacing is not recorded also as rotated or crowded. A missing or unerupted tooth with closed space is recorded as missing only.

Open spacing of posterior teeth (Fig. 4, D) refers to interproximal tooth separation that exposes to view the crests of the adjacent mesial and distal interdental papillae of a tooth. The assessor should record the number of posterior teeth affected (not the papillae).

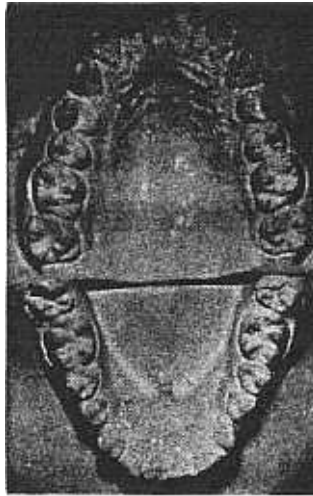


Fig. 7. See text for assessment.

Closed spacing of posterior teeth refers to space closure that will not permit a partially erupted tooth to complete its eruption without moving other teeth in the same arch. A tooth recorded under closed spacing is not recorded also as rotated or crowded (Fig. 5, *E*). A missing or unerupted tooth with closed space is recorded as missing only (Fig. 5, *F*).

In the casts shown in Fig. 7 the maxillary right central incisor is missing. The other three maxillary incisor teeth are spaced. Although it is obvious that the right central incisor, if it were present, also would be spaced, only three papillae are scored and not those adjacent to the missing incisor. Therefore, the anterior score is 2 points for the missing central incisor and 2 points for each of the three visible papillae, making a total score of 8 points for the intra-arch assessment of the maxillary anterior segment. This is sufficient to warrant the addition of 8 more points to the total score to denote an esthetic handicap.

The maxillary canine teeth (Fig. 7) are spaced on both mesial and distal sides. Since the canine teeth are counted with the posterior segment in this assessment, a score of 1 point is added for each spaced canine tooth (not the papillae). This makes a total of 10 points, plus 8 points for esthetic handicap, or a total of 18 points, even before the interarch deviations are assessed.

The maxillary first premolars are spaced on the mesial sides only. Posterior teeth, to be counted as spaced, must show visible crests of the papillae on their mesial and distal sides. Therefore, these teeth are not scored as spaced. In the mandibular dental arch there is a space on each side of the arch between the canine and the first premolar. Since there are no spaces on the distal sides of the first premolars, these likewise are not scored as spaced. Fig. 8 shows the method of assessing the casts discussed in Fig. 7.

INTERARCH DEVIATION. The casts are approximated in terminal occlusion (Fig. 9) as indicated by a wax bite trimmed so as not to extend beyond the buccal

**DEFINITION AND CRITERIA FOR ASSESSING HANDICAPPING MALOCCLUSION
PERMANENT DENTITION**

DEFINITION: Handicapping malocclusion and handicapping dentofacial deformity are conditions that constitute a hazard to the maintenance of oral health, and interfere with the well-being of the child by adversely affecting dentofacial esthetics, mandibular function, or speech.

HANDICAPPING MALOCCLUSION ASSESSMENT RECORD

Case No.

1	2	3	4
1	4	2	0

 Examiner No.

5	6
1	2

 Date

7	8	9	10	11
1	2	1	5	8
MO.		DAY YR.		

 Area

12	13	14	15	16
1	2	3	4	5

A. INTRA-ARCH DEVIATION

SCORE TEETH AFFECTED ONLY		MISSING	CROWDED	ROTATED	SPACING		NO.	POINT VALUE	SCORE
					OPEN	CLOSED			
MAXILLA	Ant.	17	18	19	20	21	4	X2	8
	Post.	22	23	24	25	26	2	X1	2
MANDIBLE	Ant.	27	28	29	30	31		X1	
	Post.	32	33	34	35	36		X1	
Total Score									10

Ant. = anterior teeth (4 incisors); Post. = posterior teeth (include canine, premolars and first molar).
No. = number of teeth affected.

B. INTER-ARCH DEVIATION

1. Anterior Segment

SCORE MAXILLARY TEETH AFFECTED ONLY, EXCEPT OVERBITE*	OVERJET	OVERBITE	CROSSBITE	OPENBITE	NO.	P.V.	SCORE
37	38	39	40			X2	
Total score							

*Score maxillary or mandibular incisors.
No. = number of teeth affected; P.V. = point value.

2. Posterior Segment

SCORE TEETH AFFECTED ONLY	RELATE MANDIBULAR TO MAXILLARY TEETH				SCORE AFFECTED MAXILLARY TEETH ONLY				NO.	P.V.	SCORE
	DISTAL		MESIAL		CROSSBITE		OPENBITE				
	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT			
Canine	41	42	43	44	45	46	47	48		X1	
1st Premolar	49	50	51	52	53	54	55	56		X1	
2nd Premolar	57	58	59	60	61	62	63	64		X1	
1st Molar	65	66	67	68	69	70	71	72		X1	
Total Score										8	
GRAND TOTAL*										18	

No. = number; P.V. = point value;
*Add 8 points when intra- and inter-arch maxillary incisor score is 6 or more to denote esthetic handicap.
REMARKS:

Prepared by Dr. J. A. Salzmann, approved by the Board of Directors of the American Association of Orthodontists and the Council on Dental Health of the American Dental Association.

Fig. 8. Assessment record of casts shown in Fig. 7.

and labial surfaces of the occluded teeth. Each side to be assessed is held in direct view by the assessor.

Overjet (Fig. 10) refers to labial position or labio-axial inclination of the maxillary incisors in relation to the mandibular incisors, permitting the latter to occlude on or over the palatal mucosa.

Overbite refers to the occlusion of the maxillary incisors on or opposite the

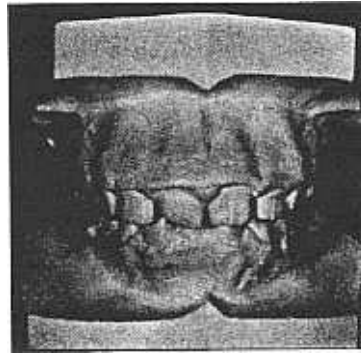


Fig. 9. Method of occluding casts for interarch assessment.

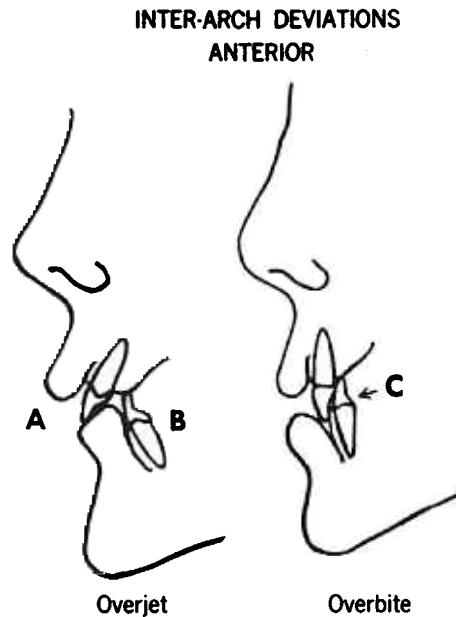


Fig. 10. Interarch deviations, anterior. Overjet is shown by the labio-axial inclination of the maxillary incisors. The mandibular incisors occlude on the palatal mucosa. Therefore, both overjet and overbite are scored for each tooth. In overbite shown here, mandibular incisors occlude on palatal mucosa. Maxillary incisors are not in overjet but extend to the labiogingival margin of the mandibular incisors. Score 2 points for each incisor tooth in overbite only.

labial gingival mucosa of the mandibular incisors, or the mandibular incisors occlude directly on the palatal mucosa back of the maxillary incisors (Fig. 10).

Overjet and overbite (Fig. 10) is scored when the mandibular teeth occlude directly on the palatal mucosa while the maxillary incisor crowns are labially inclined and in overjet. In such cases, both overjet and overbite are scored for the same case.

Cross-bite of the incisors (Fig. 11, *A*) refers to maxillary incisors that are in lingual relation to their opposing teeth in the mandible when the maxillary and mandibular dental arches are in terminal occlusion.

Cross-bite of posterior teeth (Fig. 11, *B*) refers to teeth in the buccal segment that are positioned lingually or buccally out of entire occlusal contact with the teeth in the opposing jaw when the rest of the teeth in the dental arches are in terminal occlusion. When anteroposterior deviation is present in addition to cross-bite, both are scored.

Open-bite of the incisors (Fig. 12, *A*) refers to vertical interarch dental separation between the maxillary and mandibular incisors when the posterior teeth are in terminal occlusion. Open-bite is recorded in addition to overjet if the incisal edges of the labially protruding maxillary incisors are above the incisal edges of the mandibular incisors when the posterior teeth are in terminal occlusion. Edge-to-edge occlusion is not assessed as open-bite.

Open-bite of posterior teeth (Fig. 12, *B*) refers to the vertical interdental

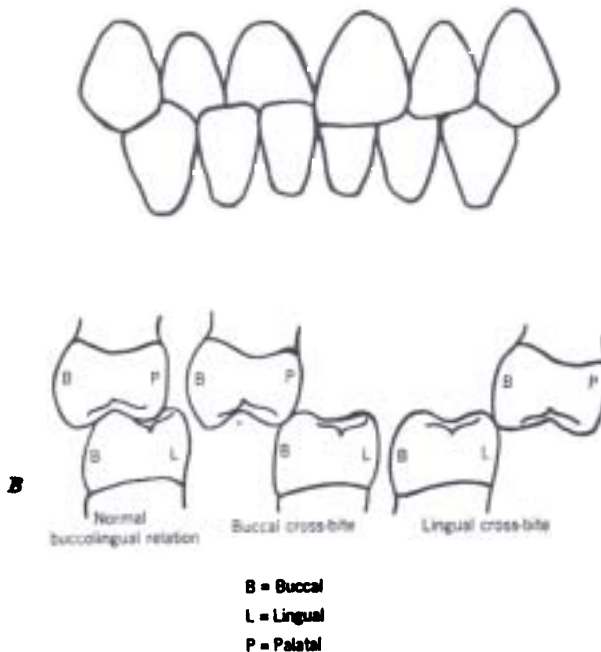


Fig. 11. Interarch deviations. *A*, Anterior cross-bite. *B*, Cross-bite of posterior teeth.

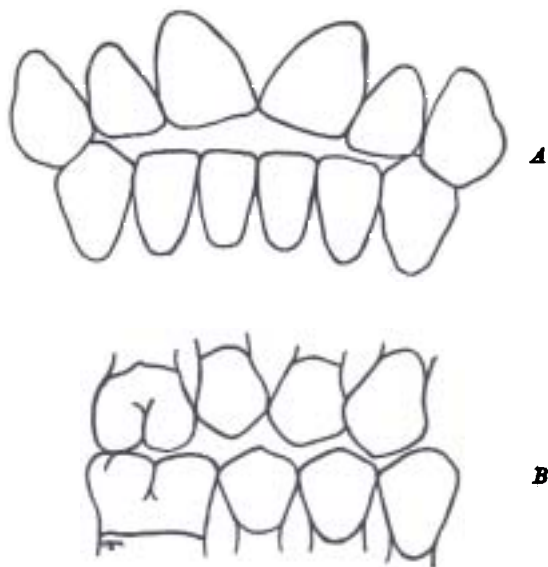


Fig. 12. Interarch deviations. *A*, Anterior open-bite. *B*, Posterior open-bite.

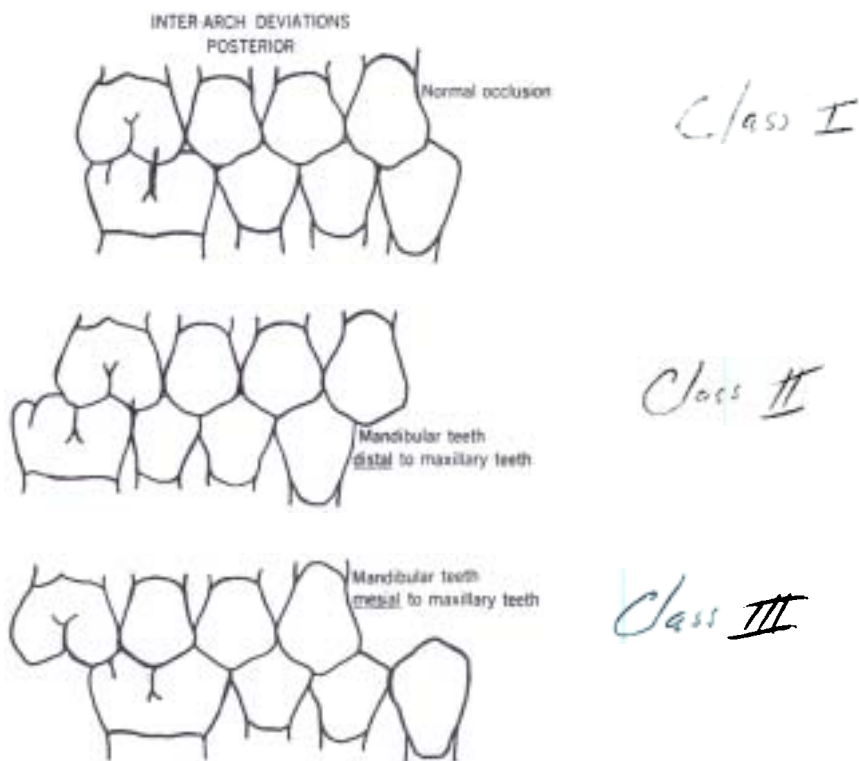


Fig. 13. Interarch deviations, posterior.

separation between upper and lower canines, premolars, and first molars when the rest of the teeth in the dental arches are in terminal occlusion. Cusp-to-cusp occlusion is not assessed as open-bite. When open-bite is present with anteroposterior deviation or cross-bite, both are scored.

Anteroposterior deviation of posterior teeth (Fig. 13) refers to the occlusion in a forward or rearward direction to the accepted normal relation of the mandibular canine, first and second premolars, and first molar in relation to the opposing maxillary teeth. The deviation is recorded when it extends a full cusp or more for the first molars and when the premolars and canines occlude in the interproximal area mesial or distal to the accepted normal relation. One point is scored for each deviated tooth.

INSTRUCTIONS FOR USING SUPPLEMENTARY ORAL ASSESSMENT RECORD FOR DENTOFACIAL DEVIATIONS BY EXAMINING DIRECTLY IN THE MOUTH

When the assessment is made directly in the mouth, the Handicapping Malocclusion Assessment Record form is completed before the Supplementary

Case No. Age Examiner No. Date Area

Day No. Yr. Location

C. DENTOFACIAL DEVIATIONS

The following deviations are scored as handicapping when associated with malocclusion Score 8 points for each deviation.

1. Facial and oral clefts	20
2. Lower lip palatal to maxillary incisor teeth	21
3. Occlusal interference	22
4. Functional jaw limitation	23
5. Facial asymmetry	24
6. Speech impairment	25
Total Score _____	

D. TREATMENT DESIRABILITY

Note: The examiner should not suggest the need for treatment.

Check replied	Examiner			Patient			Parent			Teacher		
	T.N.	T.R.	N.W.	T.N.	T.R.	N.W.	T.N.	T.R.	N.W.	T.N.	T.R.	N.W.
Facial esthetic	26	X	X	29	32	35	36	39	42	43	46	49
Function	27	X	X	30	33	X	37	40	X	44	47	X
Dental hygiene	28	X	X	31	34	X	38	41	X	45	48	X

T.N. = Treatment needed
T.R. = Treatment requested
N.W. = Treatment not wanted or needed

Remarks: Mention deviation not included in this assessment record form.

Fig. 14. Supplementary oral assessment record.

Oral Assessment Record form (Fig. 14) is used. A head spotlight or other adequate lighting is essential. A mouth mirror is used to obtain a more direct view of the teeth. It is advisable to have a copy of the Supplementary Oral Assessment Record form available for reference when following the instructions.

Terminal occlusion can be obtained when the patient bends the head backward as far as possible while keeping the mouth wide open. The patient then curves the tongue upward and backward on the palate, and the teeth are quickly brought into terminal occlusion before the head is again brought into normal position.

SCORING. Eight points are scored for each dentofacial deviation.

Facial and oral clefts (Fig. 15) refers to malocclusion in association with clefts of the lip and palate. When the alveolar process is not involved in the cleft, orthodontic treatment priority is determined by the malocclusion score alone.

Lower lip palatal to maxillary incisors (Fig. 16). The assessment of the rest position of the lower lip palatal to the maxillary incisors is made with the lips relaxed and the teeth in terminal occlusion. Jaw closure should be repeated until relaxation of the lips is obtained before the assessment is made.

Occlusal interference (Fig. 17) refers to the presence of malpositioned teeth that interfere with lateral, protrusive, or other excursive movements of the mandible.

Functional jaw limitation (Fig. 18) refers to malpositioned teeth that interfere with or limit jaw movements usually required during mastication.

Facial asymmetry (Fig. 19) refers to malocclusion that necessitates lateral or protrusive shifting of the mandible to obtain terminal occlusion so that lateral asymmetry of the face becomes evident. Mandibular prognathism is shown in Fig. 20, and a retrognathic mandible is shown in Fig. 21.

Speech impairment. Speech defects should be scored only when the patient, teacher, or parent affirms that the patient has a speech defect. The presence of a

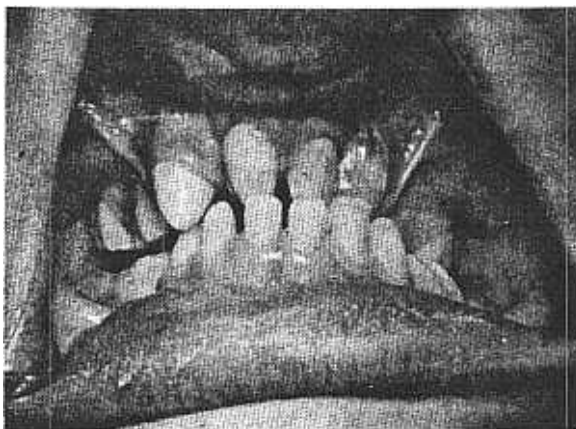


Fig. 15. Facial and oral clefts.

speech defect should not be assessed by the orthodontist, general dentist, or hygienist without special training in speech pathology.

TREATMENT DESIRABILITY. The assessor completes each Supplementary Oral Assessment Record form without conveying his findings to the patient, the parent, or the teacher, each of whom is later interviewed in turn but not in the presence of the others.

The treatment desirability section shows some rectangles to be omitted. These are indicated by the crossed lines. The instructions that follow indicate by number the rectangles in which the various scores are to be entered (Fig. 14).

EXAMINER (ASSESSOR)

T. N. (treatment needed). The assessor bases his decision on first impression. The columns indicated Nos. 26, 27, and 28 are checked, de-



Fig. 16. Lower lip palatal to maxillary incisor teeth.

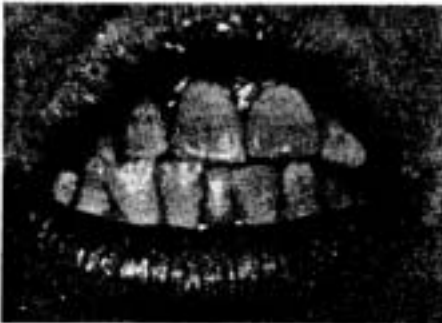


Fig. 17

Fig. 17. Occlusal interference.



Fig. 18

Fig. 18. Functional jaw limitations.

pending on whether treatment is needed because of esthetic deficiency, interference with function, or dental health.

PATIENT

T. N. (treatment needed). The assessor asks the patient if he has any questions about his teeth. If none, the assessor asks the patient if he thinks orthodontic treatment would improve his facial appearance, help him in chewing, or help him keep his teeth clean. Affirmative replies



Fig. 19



Fig. 20



Fig. 21

Fig. 19. Facial asymmetry.

Fig. 20. Mandibular prognathism.

Fig. 21. Retrognathic mandible.

are checked as indicated in Nos. 29, 30, and 31, and the rest of the section under *Patient* is omitted.

T. R. (treatment requested). If the patient voluntarily expresses a desire for treatment, the assessor asks if he feels that it will improve his facial appearance, aid him in chewing, or help him keep the teeth clean. Affirmative replies are checked as indicated in Nos. 32, 33, and 34, and the rest of the section under *Patient* is omitted.

N. W. (treatment not wanted). If the patient gives a negative reply to the question as to whether treatment is desired, the column indicated in No. 35 is checked.

PARENT

T. N. (treatment needed). The parent is asked if he has any questions or comment relative to the patient's teeth. If there are no questions, the assessor asks the parent if treatment is desired to correct dental irregularity or to improve facial appearance, chewing, or tooth cleansing. Affirmative replies are checked as indicated in Nos. 36, 37, and 38, and the rest of the section under *Parent* is omitted.

T. R. (treatment requested). If the parent voluntarily requests treatment for the patient, the assessor asks if the reason is to improve facial appearance, correct a difficulty in chewing, or to improve tooth cleansing. Affirmative replies are checked as indicated in Nos. 39, 40, and 41, and the rest of the section under *Parent* is omitted.

N. W. (treatment not wanted). If the parent does not want the child to receive orthodontic treatment, the column indicated in No. 42 is checked.

TEACHER

T. N. (treatment needed). The assessor asks if the teacher feels that the dental irregularity detracts from the patient's facial appearance or interferes with chewing or tooth cleansing. Affirmative replies are checked as indicated in Nos. 43, 44, and 45, and the rest of the section under *Teacher* is omitted.

T. R. (treatment requested). If the teacher requests that the patient receive treatment, the assessor asks if it is for improvement of facial appearance, chewing, or dental hygiene. Affirmative replies are checked as indicated in Nos. 46, 47, and 48, and the rest of the section under *Teacher* is omitted.

N. W. (treatment not wanted or needed). If the teacher expresses the opinion that the child does not need treatment, No. 49 only is checked.

SUMMARY OF INSTRUCTIONS

A. Intra-arch deviations

1. *Missing teeth*. Score by actual count of teeth; include severe crown destruction and remaining roots as missing.

2. *Crowded teeth.* Not sufficient space for alignment without moving other teeth in the arch.

3. *Rotated anterior teeth.* Sufficient space present for alignment of rotated teeth.

4. *Rotated posterior teeth.* Buccal or lingual surfaces wholly or partially facing proximal surface of adjacent tooth.

5. *Open spacing.* Crest of interdental papilla is visible. Score number of papillae in incisor section; score number of posterior teeth with both interproximal crests of papillae visible.

6. *Closed spacing.* Space insufficient for completion of eruption of a partially erupted tooth.

B. Inter-arch deviations

1. *Overjet.* Labio-axial inclination of maxillary incisors with mandibular incisors occluding on or over palatal mucosa.

2. *Overbite.* Maxillary incisors occlude on or opposite labiogingival mucosa or mandibular incisors occlude on palatal mucosa.

3. *Overjet and overbite.* Score both when mandibular incisors occlude directly on palatal mucosa while maxillary incisors are in overjet, axial inclination is present.

4. *Open-bite.* Vertical separation between teeth in opposing dental arches when the rest of the teeth are in terminal occlusion.

5. *Cross-bite of incisors.* Maxillary incisors are lingual to mandibular incisors when posterior teeth are in full occlusion.

6. *Cross-bite of posterior teeth.* Canines, premolars, and first molars are buccal or lingual out of entire occlusal contact with opposing teeth.

7. *Mesiodistal deviation.* Mandibular canine and premolars occlude their entire width and first molar occludes the width of its mesiobuccal cusp, in a mesial or distal direction from the accepted normal relation to their maxillary opposing teeth.