

Salzmann Index Evaluation Instructions

Introduction

The Salzmann Index is designed to disclose whether a handicapping malocclusion is present and assess the severity according to the criteria and weights (point values) assigned to it.

The weights are based on tested clinical orthodontic values from the standpoint of the effect of the malocclusion on dental health, function, and esthetics. The assessment is not directed to ascertain the presence of occlusal deviations ordinarily included in epidemiological surveys of malocclusion.

Providers are encouraged to include images of casts with measurements or screenshots of 3D models with measurements for the scoring sheet.

Note: Etiology, diagnosis, planning, complexity of treatment, and prognosis are not factors in this assessment.

Intra-Arch Deviations

The casts are placed, teeth upward, in direct view. When the assessment is made directly in the mouth, a mouth mirror is used. The number of teeth affected is entered as indicated in the "Handicapping Malocclusion Assessment Record." The scoring can be entered later.

1. **Anterior segment:** A value of 2 points is scored for each tooth affected in the maxilla and 1 point in the mandible.
 - a. Missing teeth are assessed by actual count. A tooth with only the roots remaining is scored as missing.
 - b. Crowded refers to tooth irregularities that interrupt the continuity of the dental arch when the space is insufficient for alignment without moving other teeth in the arch. Crowded teeth may or may not also be rotated. A tooth scored as crowded is not scored also as rotated.
 - c. Rotated refers to tooth irregularities that interrupt the continuity of the dental arch but there is sufficient space for alignment. A tooth scored as rotated is not scored also as crowded or spaced.
 - d. Spacing:
 - i. Open spacing refers to tooth separation that exposes to view the interdental papilla on the alveolar crest. Score the number of papillae visible (not teeth).

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- ii. Closed spacing refers to partial space closure that will not permit a tooth to complete its eruption without moving other teeth in the same arch. Score the number of teeth affected.

2. **Posterior segment:** A value of 1 point is scored of each tooth affected.

- a. Missing teeth are assessed by actual count. A tooth with only the roots remaining is scored as missing.
- b. Crowded refers to tooth irregularities that interrupt the continuity of the dental arch when the space is insufficient for alignment. Crowded teeth may or may not also be rotated. A tooth scored as crowded is not scored also as rotated.
- c. Rotated refers to tooth irregularities that interrupt the continuity of the dental arch and all or part of the lingual or buccal surface faces some part or all of the adjacent proximal tooth surfaces. There is sufficient space for alignment. A tooth scored as rotated is not scored also as crowded.
- d. Spacing
 - i. Open spacing refers to interproximal tooth separation that exposes to view the mesial and distal papillae of a tooth. Score the number of teeth affected (Not the spaces).
 - ii. Closed spacing refers to partial space closure that will not permit a tooth to erupt without moving other teeth in the same arch. Score the number of teeth affected.

Interarch Deviations

When casts are assessed for interarch deviations, they first are approximated in terminal occlusion. Each side assessed is held in direct view. When the assessment is made in the mouth, terminal occlusion is obtained by bending the head backward as far as possible while the mouth is held wide open. The tongue is bent upward and backward on the palate and the teeth are quickly brought to terminal occlusion before the head is again brought downward. A mouth mirror is used to obtain a more direct view in the mouth.

- 1. **Anterior segment:** A value of 2 points is scored for each affected maxillary tooth only.
 - a. Overjet refers to labial axial inclination of the maxillary incisors in relation to the mandibular incisor, permitting the latter to occlude on or over the palatal mucosa. If the maxillary incisors are not in labial axial inclination, the condition is scored as overbite only.
 - b. Overbite refers to the occlusion of the maxillary incisors on or over the labial gingival mucosa of the mandibular incisors, while the mandibular incisors themselves occlude on or over the palatal mucosa in back of the maxillary incisors. When the maxillary incisors are in labial axial inclination, the deviation is scored also as overjet.
 - c. Cross-bite refers to maxillary incisors that occlude lingual to their opponents in the opposing jaw, when the teeth are in terminal occlusion.

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- d. Open-bite refers to vertical interarch dental separation between the upper and lower incisors when the posterior teeth are in terminal occlusion. Open-bite is scored in addition to overjet if the maxillary incisor teeth 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.
- 2. **Posterior segment:** A value of 1 point is scored for each affected tooth.
 - a. Cross-bite 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 dental arches are in terminal occlusion.
 - b. Open-bite refers to the vertical interdental separation between the upper and lower segments when the anterior teeth are in terminal occlusion. Cusp-to-cusp occlusion is not assessed as open-bite.
 - c. Anteroposterior deviation refers to the occlusion forward or rearward of the accepted normal of the mandibular canine, first and second premolars, and first molar in relation to the opposing maxillary teeth. The deviation is scored when it extends a full cusp or more in the molar and the premolars and canine occlude in the interproximal area mesial or distal to the accepted normal position.

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HANDICAPPING MALOCCLUSION ASSESSMENT RECORD

SCORE TEETH AFFECTED ONLY		MISSING	CROWDED	ROTATED	SPACING		NUMBER OF TEETH AFFECTED	POINT VALUE	SCORE
					Open	Closed			
MAXILLA	ANT.							X2	
	POST.							X1	
MANDIBLE	ANT.							X1	
	POST.							X1	
TOTAL SCORE									

ANT. = Anterior Teeth (4 incisors), POST. = Posterior Teeth (include canine, premolars and first molars)

1. Anterior Segment

SCORE MAXILLARY TEETH AFFECTED ONLY EXCEPT OVERBITE (Score Maxillary or Mandibular Incisors)	OVERJET	OVERBITE	CROSSBITE	OPENBITE	NUMBER OF TEETH AFFECTED	POINT VALUE	SCORE
						X2	
TOTAL SCORE							

2. Posterior Segment

SCORE AFFECTED TEETH ONLY	RELATE MANDIBULAR TO MAXILLARY TEETH				SCORE AFFECTED MAXILLARY TEETH ONLY				NUMBER OF TEETH AFFECTED	POINT VALUE	SCORE
	DISTAL		MESIAL		CROSSBITE		OPENBITE				
	Right	Left	Right	Left	Right	Left	Right	Left			
CANINE										X1	
1 ST PREMOLAR										X1	
2 ND PREMOLAR										X1	
1 ST MOLAR											
TOTAL SCORE											
GRAND TOTAL											