






Volumetric Measurement of Alveolar Clefts for Bone Graft Planning: A Systematic Review

Inka Saraswati^{1,*} , Menik Priaminiarti¹ , Norifumi Nakamura^{2,3}, Brama Kiswanjaya¹ , Dwi Ariawan² and Heru Suhartanto⁴

¹Department of Dentomaxillofacial Radiology, Faculty of Dentistry, Universitas Indonesia, Salemba Raya No.4, Central Jakarta, Indonesia 10430

²Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Universitas Indonesia, Salemba Raya No.4, Central Jakarta, Indonesia 10430

³Department of Oral and Maxillofacial Surgery, Kagoshima University Graduate School of Dental and Medical Sciences, 8-35-1, Sakuragaoka, Kagoshima 890-8544, Japan

⁴Faculty of Computer Science, Universitas Indonesia, Jl. Lingkar Pondok Cina, Depok, Indonesia 16424

© 2025 The Author(s). Published by Bentham Open.

This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 International Public License (CC-BY 4.0), a copy of which is available at: <https://creativecommons.org/licenses/by/4.0/legalcode>. This license permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.



*Address correspondence to this author at the Department of Dentomaxillofacial Radiology, Faculty of Dentistry, Universitas Indonesia, Jakarta, Indonesia, Jl. Salemba Raya no. 4, Senen, Central Jakarta, Indonesia 10430; Tel: +628121039826; E-mail: inkasaraswati@office.ui.ac.id

Published: June 13, 2025

Cite as: Saraswati I, Priaminiarti M, Nakamura N, Kiswanjaya B, Ariawan D, Suhartanto H. Volumetric Measurement of Alveolar Clefts for Bone Graft Planning: A Systematic Review. Open Dent J, 2025; 19: e18742106389355. <http://dx.doi.org/10.2174/0118742106389355250611102139>



Send Orders for Reprints to reprints@benthamscience.net

PRISMA Checklist

Section and Topic	Item #	Checklist Item	Location where Item is Reported
TITLE			
Title	1	Identify the report as a systematic review.	Line 2
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	See abstract
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Line 30-47
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Line 43-45
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Line 66-75
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Line 78
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Line 79-83
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Line 83-87
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Line 90-94

Section and Topic	Item #	Checklist Item	Location where Item is Reported
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Line 90-92
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Line 90-94
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Line 97-107
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	-
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Line 84-85, 87
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Line 93-94
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Line 92-93
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Line 93
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	-
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	-
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Line 97-107
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Line 94
RESULTS			-
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Line 111-118, Figure 1
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Line 117
Study characteristics	17	Cite each included study and present its characteristics.	Table 2
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Figure 2
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Table 2, Table 3
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Line 121-126
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	-
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Line 143-147
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	-
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	Line 121-126
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Figure 2
DISCUSSION			-
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Line 154-176
	23b	Discuss any limitations of the evidence included in the review.	Line 377-387
	23c	Discuss any limitations of the review processes used.	Line 372-377
	23d	Discuss implications of the results for practice, policy, and future research.	Line 396-402
OTHER INFORMATION			-
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Line 51
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	Line 50
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	No amendments
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Line 404-408
Competing interests	26	Declare any competing interests of review authors.	Line 410-411

Section and Topic	Item #	Checklist Item	Location where Item is Reported
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	Tables 1-3, Figures 1-2, Supplementary materials

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, *et al.* The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71

DISCLAIMER: The above article has been published, as is, ahead-of-print, to provide early visibility but is not the final version. Major publication processes like copyediting, proofing, typesetting and further review are still to be done and may lead to changes in the final published version, if it is eventually published. All legal disclaimers that apply to the final published article also apply to this ahead-of-print version.