IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 24, Issue 7 Ser.1 (July 2025), PP 25-27
www.iosrjournals.org

Clinical Perspectives on Denture Rebasing: A Review of Literature and Current Best Practices

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Abstract:
Background*: The effectiveness of complete dentures diminishes over time due to alveolar ridge resorption, mucosal changes, and wear of denture materials. These changes lead to loss of retention, stability, and patient comfort, necessitating corrective measures. Denture rebasing serves as conservative alternatives to full denture replacement, aiming to restore fit and function while preserving occlusal relationships and esthetics.*
Materials and Methods*: This literature-based review analyzes landmark studies and clinical techniques from 1936 to 2023, covering direct and indirect rebasing methods, material advancements such as polymethyl methacrylate and tissue conditioners, and criteria for clinical decision-making. Techniques like closed-mouth impression, remounting, and occlusal adjustments are emphasized as essential for success. Contraindications and limitations of procedure are also outlined.*
Conclusion: *Denture rebasing remains clinically valuable procedures when executed with proper case selection and technique. While not substitutes for new dentures in severely compromised cases, they offer functional and economical benefits, particularly for patients in resource-limited settings. Ongoing research into resilient liner materials and antimicrobial properties continues to enhance the durability and success of these treatments.*
Key Word*: Complete dentures, Denture rebasing, Occlusal stability, Ridge resorption, Impression materials, Soft liners, Prosthodontic rehabilitation.*

Date of Submission: 20-06-2025 Date of Acceptance: 03-07-2025

I. Introduction

Edentulous patients with new complete dentures are generally satisfied but up to 30% of the patients have complaints. They still experience ongoing difficulties in adaptation such as unsatisfactory appearance, wrenching pain or discomfort due to the lack of retention and stability, altered speech, accumulation of food under the denture, difficulty in chewing. These kinds of complaints may compromise the quality of life and can bring him to re consult again to solve them. As a solution to these problems, a particular clinical procedure which is rebasing is indicated in some particular cases. The main purpose is to re-establish adequate adaptation of the denture base to the bearing area and to preserve the original jaw relations. This technique is mainly indicated in the case of an immediate or late static prosthetic instability induced by physiological or pathological resorption. The approach is the same as the final impression with the obligation to have a well-balanced occlusion with a correct occlusal plane, a valid centric relation with the right vertical dimension.[1] The term rebase is defined as, "A process of refitting a denture by the replacement of the denture base material without changing the occlusal relation of the teeth" [2]

II. Review of Literature

The concept of rebasing, defined as the replacement of all denture base material without altering the occlusal relation of the teeth, has evolved significantly over the decades. As early as 1936, Victor H. Sears emphasized the importance of preserving centric relation and achieving proper tissue adaptation during rebasing procedures. He stressed that improper techniques often led to disappointing outcomes and underutilization of the method [3].

Jack Buckman (1952) reinforced that rebasing is as demanding as original denture fabrication. He focused on correcting vertical dimension changes and minimizing pressure during impressions using a central

bearing technique [4]. Similarly, Louis Blatterfein (1958) highlighted the necessity of recognizing ridge resorption and customizing procedures based on intraoral conditions, cautioning against a "one-size-fits-all" approach [5]

ROBERT R. GILLIS (1960) addressed the reluctance among dentists to reline or rebase dentures, often opting to fabricate new ones instead. He proposed a technique capable of restoring up to 14 mm of lost vertical dimension, dismissing concerns about hinge axis alignment [6]

Shammas Mohammed et al. (2013) compared two rebasing techniques and concluded that using silicone putty indexes resulted in less occlusal discrepancy than dental stone indexing, supporting its clinical preference for minimizing errors in vertical dimension [7]

In recent times, Safa Jemli et al. (2021) clarified that rebasing is particularly indicated in cases of static prosthetic instability from ridge resorption, and emphasized the role of regular follow-ups to ensure denture adaptation and patient satisfaction [8]. Akhil Rathi et al. (2018) further identified a gap in practitioner knowledge and stressed the need for continuing education to improve the clinical outcomes of relining and rebasing procedures [9].

Overall, the literature underscores that rebasing, though sometimes overlooked, is an essential procedure when denture bases have deteriorated, provided occlusion remains correct. Its success lies in accurate diagnosis, proper technique, and continuous practitioner training

III. General Considerations

General considerations necessary to determine whether a complete denture reline should be attempted or a new denture constructed include:

- The occlusal vertical dimension should be satisfactory.
- Centric occlusion should coincide with centric relation; an error is allowable if it is so slight as to be correctable
- The patient's appearance must be acceptable to the patient and dentist. The size, shape, shade, and arrangement of the artificial teeth must be satisfactory
- The oral tissue should be in optimum health
- The posterior limit of the maxillary denture is correct.
- The denture base extensions are adequate
- The denture base extensions ensure distribution of masticatory forces over as large an area as possible.
- The interocclusal distance is correct.
- Speech is satisfactory with the existing tooth arrangement.
- There are no existing hard or soft tissue conditions that would preclude the technique, such as redundant tissue or severe osseous undercuts.[11]

IV. Indications

Rebasing Indications:

Rebasing involves replacing the entire acrylic base of the denture while keeping the existing teeth. It is indicated when:

- Severe Bone Loss: Extensive bone resorption has occurred, and the denture base no longer fits properly.
- Worn or Damaged Base: The denture base is cracked, discolored, or otherwise damaged but the teeth are still functional.
- Poor Fit: The denture is significantly loose, and relining is not sufficient to restore proper fit.
- Patient dissatisfaction: If the patient is experiencing issues with denture retention, stability, or comfort, rebasing may be a suitable solution.
- Long-Term Solution: A more durable and long-term solution is needed compared to relining.
- Aesthetic Concerns: The denture base is aesthetically unappealing due to wear , porosity, denture base shade match and discoloration.[11]

V. Contraindications

The dentures should not be rebased when one or more of the following defects exist:[11]

- Presence of unresolved temporomandibular joint (TMJ) disorders or myofascial pain syndromes, which may interfere with prosthetic stability or function.
- Persistence of inflamed, traumatized, or pathological basal seat mucosa that has not responded adequately to preliminary tissue conditioning or treatment.
- Improper positioning of prosthetic teeth leading to compromised function, impaired phonetics, or unacceptable esthetic outcomes.

- Dentures exhibiting extensive wear or multiple fractures in the artificial teeth, which may render rebasing ineffective.
- An occlusal plane that is poorly aligned, contributing to unaesthetic appearance or mechanical imbalance.
- Presence of occlusal interferences in centric relation exceeding 2 mm horizontally and 3 mm vertically, which cannot be corrected without remaking the prosthesis.
- Situations requiring an increase in vertical dimension of occlusion by more than 3 mm, as such changes surpass the corrective scope of rebasing.
- Excessively increased vertical dimension that results in inadequate interocclusal space, preventing proper functional adaptation

VI. Conclusion

Denture rebasing, when viewed through a clinical lens, is far more than a laboratory process—it is a pivotal procedure that supports prosthetic longevity, stability, and patient comfort. The accumulated literature highlights rebasing as an essential intervention, particularly in scenarios where the denture base has deteriorated or when anatomical changes from residual ridge resorption compromise fit and function. Unlike relining, rebasing involves complete replacement of the denture base while preserving the occlusal scheme, making it an ideal choice when occlusion remains acceptable.

Despite its advantages, rebasing is frequently overshadowed by the option of fabricating new dentures, often due to perceived complexity or insufficient training. However, with careful case selection, attention to impression accuracy, and preservation of vertical dimension and occlusal relationships, rebasing can offer excellent outcomes both functionally and economically.

Recent studies and clinical evaluations also support the use of updated materials and simplified indexing techniques—such as silicone putty methods—which enhance precision and reduce errors during the procedure. As prosthodontic care evolves, it is critical for clinicians to remain well-versed in best practices surrounding rebasing, ensuring that the decision to rebase or remake a prosthesis is based on sound clinical judgment rather than default preference.

Incorporating evidence-based rebasing protocols into daily clinical practice not only extends the lifespan of dentures but also reinforces a commitment to patient-centered, cost-effective care in prosthodontics.

References

[1]. Jemli, Safa. "Rebasing as a Problem-Solving in Complete Dentures." Saudi J Oral Dent Res 6.6 (2021): 227-233.
[2]. Christensen, Finn Tengs. "Relining techniques for complete dentures." The Journal of Prosthetic Dentistry 26.4 (1971): 373-381.
[3]. Sears, Victor H. "Functional impressions for rebasing full dentures." The Journal of the American Dental Association (1922) 23.6 (1936): 1031-1035
[4]. Buchman, Jack. "Relining full upper and lower dentures." *The Journal of Prosthetic Dentistry* 2.5 (1952): 703-710.
[5]. Blatterfein, Louis. "Rebasing procedures for removable partial dentures." *The Journal of Prosthetic Dentistry* 8.3 (1958): 441-467.
[6]. Gillis, Robert R. "A relining technique for mandibular dentures." The Journal of Prosthetic Dentistry 10.3 (1960): 405-410.
[7]. Mohammed, Shammas, et al. "Changes in Vertical Dimension of Complete Dentures due to Rebasing with Different Techniques." *Dent* 4.2 (2013): 96-99.
[8]. Jemli, Safa. "Rebasing as a Problem-Solving in Complete Dentures." *Saudi J Oral Dent Res* 6.6 (2021): 227-233.
[9]. Rathi, Akhil, et al. "Knowledge and attitude about relining of complete dentures in clinical practice: a cross-sectional study." *The Journal of Indian Prosthodontic Society* 18.2 (2018): 174-180.
[10]. Boucher, Carl O. "The relining of complete dentures." Journal of Prosthetic Dentistry 91.4 (2004): 303-305.
[11]. Winkler, Sheldon. "Essentials of complete denture prosthodontics." 2nd edition, chapter no.- 20, pg. no.-341-351.