

The Evolution of the Overdenture: Balancing Workflow Efficiency with Clinical Longevity

The Stagnant Landscape of Edentulism

For more than two decades, the overdenture category has been characterized by a curious paradox: while digital dentistry has revolutionized crowns, bridges and full-arch fixed hybrids, the humble removable overdenture has largely remained in a state of innovation stasis. Despite the prevalence of edentulism declining, the clinical reality for our aging population has become more complex. Patients are retaining their natural teeth longer, leading to challenging transitions when those remaining abutments inevitably fail due to periodontal disease or attrition.

There is an emotional weight to these cases that the industry often overlooks. We frequently view the tissue-supported overdenture as a "budget" or "entry-level" implant restoration. However, for the patient, this prosthesis is their primary gateway to social confidence, nutritional health and a youthful appearance. These patients — often on fixed incomes and navigating the vulnerabilities of aging — do not "deserve" a 20-year-old legacy solution simply because it is the status quo. They deserve the pinnacle of modern material science and engineering. It is time we stop settling for "good enough" in the removable space and demand innovation that reflects the respect we owe our patients.



Figure 1

A tissue-friendly ZrN surface coating promotes long-term success

The Technical Core: Challenging the Status Quo

The introduction of the PreatLoc™ Overdenture Attachment System ushers in a design centered on better patient outcomes and greater ease of use for clinicians and technicians. While compatible with the market's leading overdenture attachment system, PreatLoc™ delivers small but meaningful enhancements that collectively create life-changing results for patients.

The primary differentiator lies in the Zirconium Nitride (ZrN) coating of the PreatLoc™ abutment. While traditional titanium nitride surfaces are subject to biofilm accumulation, it has been demonstrated that the ZrN surface promotes better tissue health by reducing plaque adhesion and subsequent inflammation¹ (Fig. 1).

Patient expectations of performance should guide every advancement in overdenture design. PreatLoc™ demonstrates commitment to rigorous quality control, resulting in overdenture inserts that deliver from both a longevity standpoint and consistency in the stated retention. Patients no longer question why there is not as much retention as the last set of inserts.

The innovation extends to the denture cap itself with two critical improvements that technicians and clinicians will appreciate:

- **Aesthetic Pink Anodization:** By blending with the hue of the denture base, these housings eliminate the unappealing gray "show-through" that often compromises the gingival aesthetics of thin-flange overdentures.
- **Dual Anti-Rotation Flats:** To prevent the "spinning" or loosening of the cap within the acrylic, which is a common cause of maintenance visits in legacy systems (Fig. 2).



Figure 2

PreatLoc™ pink housing cap provides enhanced aesthetics and prevents spinning with anti-rotational flats.

1. Brunello G, Brun P, Gardin C, Ferroni L, Bressan E, Meneghello R, et al. (2018) Biocompatibility and antibacterial properties of zirconium nitride coating on titanium abutments: An in vitro study. PLoS ONE 13(6): e0199591. <https://doi.org/10.1371/journal.pone.0199591>



Photos courtesy of Dr. Steven J. LoCascio, DDS



Lab Economics: Seamless Integration and Bottom-Line Performance

In the modern dental laboratory, production disruption is the enemy of profitability. The genius of the PreatLoc™ system is its universal workflow. It is designed with a "zero learning curve" philosophy — meaning technicians and dentists use the same tools and the same restorative steps they have used for years.



Figures 6-7

Prior worn abutments were replaced with new PreatLoc™ abutments

Photos courtesy of Dr. Steven J. LoCascio, DDS



PreatLoc™ offers the same retention levels and pivoting we're used to, with a Standard Pivot (up to 20°) and an Extended Pivot (up to 40°) to accommodate divergent implants without requiring a change in technique. This compatibility allows labs to switch systems without retraining staff, forcing practices to purchase new instrumentation or navigating different retention levels.

This ease of transition leads directly to improved "bottom-line" performance. By providing "premium performance without the premium price," PreatLoc™ allows labs to protect their margins in an increasingly competitive environment. When we consider the landscape — an aging population requiring cost-effective but high-performance care — the ability for a lab to offer a superior, tissue-friendly solution at a better value is a powerful differentiator.

Case Discussion:

A patient presented with an existing two-implant overdenture and worn abutments, along with severe bone loss around both implants. The abutments were replaced with new PreatLoc™ abutments, and the housings were picked up chairside. The patient reported satisfaction with the fit, feel and retention of their new overdenture (**Figs. 3-7**).

Conclusion: The "Preat Factor"

With over 45 years of overdenture expertise, Preat is not just selling a component; they are providing a partnership in patient care. The PreatLoc™ system represents a long-overdue evolution in the overdenture category. By combining superior material science, refinements in the denture cap and a workflow that respects the lab's need for efficiency, we can finally offer our patients the treatment they deserve while ensuring our businesses remain sustainable. It is time to move beyond the legacy and embrace the next generation of overdenture solutions. ■

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