

# Prosthodontic Management of Amelogenesis Imperfecta: Review and Case Series

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**Introduction:** A literature review on prosthodontic management of amelogenesis imperfecta (AI) has been conducted. Three patients with amelogenesis imperfecta have been managed in the Prosthodontic Graduate Clinic, Department of Oral Restorative Science, Westmead Centre for Oral Health. To optimize treatment outcomes, the focus was the best available evidence for patient-specific concerns for esthetics, function, and cost within the framework of each patient's psychosocial profiling. **Case Presentations:** Three cases with different AI classifications have been managed with fixed restorative options. Patient 1 (male, age 19), diagnosed with autosomal dominant hypocalcified AI, had previously received semi-permanent comprehensive restorations provided by the referring pediatric dentist. Enamel of poor quality and sleep bruxism were the primary factors considered in formulating the definitive treatment plan, which predominantly included a combination of full-gold and ceramometal crowns to maximize the longevity of the restorations. Patient 2 (male, age 20), diagnosed with autosomal recessive hypoplastic AI, had also received comprehensive restorative treatment previously by a pediatric dentist. This patient presented with excellent enamel quality, allowing a combination of full-gold, ceramometal, and Cerec crowns for long-term occlusal stability and minimal treatment cost. Patient 3 (male, age 30), diagnosed with autosomal recessive hypoplastic AI, had not received previous comprehensive dental treatment. The minimal intervention approach included a combination of full-gold, ceramometal, and Cerec onlays and crowns to provide long-term occlusal stability and enhanced esthetics. **Conclusion:** These cases demonstrate the need for multidisciplinary management and the importance of preventative reviews to monitor caries and periodontal health. Fixed prosthodontic treatments are well-tolerated by young patients with AI. Esthetics, tooth sensitivity, and functional concerns have been addressed. A positive psychosocial outcome and quality of life may be achieved.



**Dr Ben Lee** graduated from the University of Otago, New Zealand in 2002. He then began full-time private practice at a leading private practice in Sydney, Australia. Currently he is in the final year of his Masters of Prosthodontics at the University of Sydney, Westmead Centre for Oral Health, under the guidance of Professor Iven Klineberg.

## ***What was your rationale for choosing this research topic?***

## ***What compelling conclusions can be drawn from the results?***

At the Westmead Centre for Oral Health, we were fortunate to receive many referrals of rare dental disorders, such as amelogenesis imperfecta (AI), thus providing the opportunity to be involved in this area. Due to AI's complexity of management and evidence-based treatment approach, we decided to conduct our own systematic literature review and aim to propose a prosthodontic treatment protocol for this disorder. Conclusions drawn from our literature review are as follows:

- Patients with AI may require extensive treatment spanning many years, including several restorative phases in a multidisciplinary environment.
- A coordinated multidisciplinary effort will maximize the treatment options available for the permanent dentition. However, communication among the disciplines is critical.
- Factors to consider during treatment planning include: age, socioeconomic status, type and severity of the disorder, intraoral status, stage of dental development, and developmental capabilities.
- The patient should receive regular preventive care to maintain a caries free dentition and good gingival health.
- For future studies, there is a need for higher quality research on the management of AI.

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