

## Let's Save More Teeth, Part I

Periodontal disease leads to the destruction of the periodontium, resulting in the loss of cementum, alveolar bone, and the periodontal ligament. Guided tissue regeneration (GTR) procedures have been developed to restore these lost structures. The goal of GTR is to promote the formation of new cellular cementum, new functional alveolar bone, and new periodontal ligament.

True periodontal regeneration can only be confirmed through histologic analysis; however, this method is not feasible for routine clinical practice. Therefore, most studies rely on clinical parameters - such as clinical attachment gain, probing depth reduction, and radiographic evidence of bone regeneration - to evaluate treatment outcomes (1, 2). Improvements in these parameters correlate with a better prognosis and tangible clinical benefits, as teeth exhibiting these changes can often be maintained long-term (3, 4).

A typical GTR procedure could involve three primary components:

- **Bone replacement graft** to provide an osteoinductive scaffold and maintain space.
- **Barrier membrane** to prevent epithelial downgrowth and facilitate selective cell repopulation.
- **Biologic agent** to enhance regenerative outcomes and improve predictability.

### **Clinical Example**

Tooth #30 presented with severe periodontal disease. Initial findings included:

- Attachment loss ranging from 1–12 mm
- Probing depths of 1–9 mm
- Mobility grade I
- Poor long-term prognosis without interventional therapy



Pre-operative view



Pre-operative radiograph



Intraoperative defect

Following GTR surgery and appropriate healing, clinical findings improved markedly:

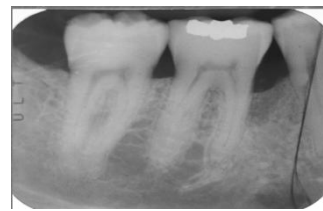
- Attachment loss reduced to 1–5 mm
- Probing depths decreased to 1–3 mm
- Mobility improved to grade 0
- Long-term prognosis upgraded to good



Bone, membrane, biologic agent placement



One-year post-op view



One-year radiograph

This case demonstrates how GTR can significantly improve the prognosis of teeth with severe periodontal destruction, allowing them to be *maintained rather than extracted*. The preservation of natural dentition remains the gold standard in periodontal therapy, offering patients functional, biological, and esthetic benefits that cannot be fully replicated by prosthetic alternatives.

Continued refinement of regenerative techniques—and thoughtful case selection—will enable clinicians to achieve even more predictable outcomes, ultimately allowing us to **save more teeth**. I say, let's save more teeth with GTR and allow our patient population to enjoy the functionality of their own teeth for many years to come!

#### References

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