

## **Insurance Coding and Documentation Requirements for 3D Exosome Periodontal Papilla Regeneration**

The described technique for periodontal papilla regeneration using 3D Exosomes and Polypeptide 3D Exosome Media (PEM) Paste represents an innovative approach to addressing "dark triangles" between teeth. After analyzing the procedure description and current coding guidelines, I will recommend the most appropriate insurance codes and required documentation for optimal reimbursement.

Recommended CDT Codes for Dental Insurance Claims

### **Primary CDT Code Option**

#### **D4265 - Biologic materials to aid in soft and osseous tissue regeneration, per site**

This code is most appropriate as the primary billing code because:

1. It specifically addresses the use of biological materials for soft tissue regeneration
2. The 3D exosomes and PEM Paste qualify as biological materials
3. The code is applied per site, which aligns with the treatment of individual papillae
4. The procedure's primary goal is soft tissue regeneration<sup>3</sup>

### **Alternative CDT Code Consideration**

#### **D4999 - Unspecified periodontal procedure, by report**

This code should be considered when:

1. The primary payer rejects the D4265 code
2. The carrier requires more specificity regarding the innovative nature of exosome therapy
3. The unique aspects of the procedure need to be emphasized<sup>1</sup>

Recommended CPT Code for Medical Insurance Claims

When filing with medical insurance, the most appropriate code would be:

#### **41899 - Unlisted procedure, dentoalveolar structures**

This code is appropriate because:

1. No specific CPT code exists for exosome-based periodontal procedures
2. The code applies to innovative procedures involving dentoalveolar structures
3. It allows for detailed description of the procedure and materials used<sup>5</sup>

Required Documentation for Optimal Reimbursement

As this represents an advanced regenerative technique without a specific assigned code, comprehensive documentation is essential for successful reimbursement claims.

### **1. Detailed Clinical Assessment and Diagnosis**

Document the following:

- Comprehensive periodontal examination findings
- Clear identification of papillary deficiencies ("dark triangles") including measurements
- Photographic documentation of pretreatment condition
- Diagnosis using appropriate ICD-10 codes such as:
  - K06.2 - Gingival and edentulous alveolar ridge lesions associated with trauma
  - K05.4 - Periodontosis
  - K06.8 - Other specified disorders of gingiva and edentulous alveolar ridge<sup>1</sup>

### **2. Procedure-Specific Documentation**

Provide a detailed narrative including:

- Specific sites treated (tooth numbers adjacent to the papilla)
- Exact materials used (composition of 3D exosomes at 8 billion particles/80 million exosomes per ml)
- Growth factors contained in the PEM Paste (EGF, bFGF, PDGF, HGF, Collagen type 1, Factor-11)
- Precise volumes of materials used (0.5 ml of 3D exosomes, amount of PEM paste)
- Step-by-step technique description including injection sites and depths[34](#)

### 3. Medical Necessity Justification

Document:

- Aesthetic and functional impairments caused by papillary deficiency
- Failed previous conventional treatments
- Patient-reported symptoms (food impaction, phonetic issues, aesthetic concerns)
- Supporting periodontal literature on exosome therapy
- Scientific rationale explaining how exosomes promote soft tissue regeneration[4910](#)

### 4. Treatment Plan and Follow-up

Include:

- Complete treatment plan detailing the series of 3-4 weekly procedures
- Documentation of each stage of treatment
- Follow-up assessment protocols
- Photographic documentation showing progressive improvement
- Final results with measurements of papilla fill[1](#)

### 5. Scientific Support for Biologic Materials

Strengthen your claim by citing relevant research:

- Evidence that exosomes promote cell proliferation and migration[49](#)
- Research showing exosomes enhance soft tissue regeneration[10](#)
- Studies demonstrating exosomes' role in angiogenesis and healing[47](#)
- Comparative analysis of exosome therapy versus traditional approaches[910](#)

Reimbursement Strategy

For optimal reimbursement of this innovative procedure:

1. **Pre-authorization:** Submit a detailed pre-treatment authorization request with comprehensive documentation, especially for the initial cases.
2. **Code Sequencing:** When submitting claims:
  - For dental insurance: Submit D4265 as the primary code, specifying each treated site
  - For medical insurance: Use 41899 with a detailed procedure description
3. **Supporting Documents:** Include detailed narratives, clinical photographs, and relevant research literature supporting exosome therapy for periodontal regeneration.
4. **Follow-up:** Be prepared to provide additional information and to appeal initial denials with supplementary documentation emphasizing the regenerative nature of the procedure.

Conclusion

The 3D exosome therapy for periodontal papilla regeneration represents an innovative approach that falls outside standard coding parameters. While D4265 (biologic materials for tissue regeneration) is the most appropriate dental code, comprehensive documentation is essential to justify the procedure's medical necessity and biological basis. When filing with medical insurance, CPT code 41899 provides the flexibility to describe this unique procedure thoroughly.

Given the evolving nature of exosome therapies in dentistry, practitioners should maintain detailed records and be prepared to educate insurance carriers about this cutting-edge regenerative approach through thorough documentation and scientific references.