





REVOLUTIONIZING ROOT CANAL THERAPY; THE EMERGENCE OF REGENERATIVE ENDODONTICS

Pulp revascularisation- an alternative approach to

Tissue engineering; Basic concept of Regenerative Endodontic Therapy (RET); Composed of;

Biomaterial

The four pillars of REPs

Stem cells

Cell-free

CB-RET

Cell-based

Biological: PRP • PPP

Synthetic: Hydrogel

· Micro -

 Fibers Glass

Blood clot scaffold Periapical area

conventional root canal treatment

invaded by cells Regenerated and growth factors Regenerated permanent coronal ' restoration

A. Immature tooth with necrotic pulp

B. Stimulating bleeding by overinstrumentation

C. Blood flows in canal to form blood clot

D. Sealing the tooth by placing a pulp space barrier and permanent coronal restoration

E. Root formation **RCT**: Mechanically and Materially based.

RET: Biologically based

Regenerative Endodontic Therapy

Advantages:

- **Reduced Risk of Fractures**
- Potential for better long term outcomes
- Restores tooth's natural biology, less invasive

Direct Pulp Capping



Disadvantages

- **Technique Sensitivity**
- More complex than RCT
- **Limited Long-Term Data**
- **Cost and Accessibility**

Recover normal pulp function in reversible pulpitis and regeneration of pulp-dentinal complex in irreversibly inflamed teeth