# RegendoGEL: A Bioinspired Hydrogel System for Endodontic Therapy

## Clinical Need

Dental caries is the most common non-transmissible infectious disease in the world. If untreated, caries lesions will progress to the dental pulp, exposing it to infection. Standard of care techniques involve removing infected pulp and capping the defect with inert material, or root canal therapy. Currently, there are no clinically available materials that regenerate the pulp-dentin complex.

## Solution

A team led by Luiz Bertassoni, DDS, PhD and Pamela Yelick, PhD has developed a novel material, RegendoGEL, intended to be the first-of-its-kind clinical product to promote vital pulp and dentin regeneration. RegendoGEL contains key bioactive molecules present in healthy teeth that naturally promote dental pulp and dentin regeneration and may be used for pulpotomies.

## Competitive Advantage

Compared to non-degradable silicate/calcium hydroxide-based products currently used for endodontic treatments, RegendoGEL is a soft, biodegradable hydrogel material. RegendoGEL stimulates cells to migrate into the defect site and regenerate living dental pulp tissue and dentin in 5 days. RegendoGEL is designed as a ready-to-use product that can easily be applied using routine dental procedures.

## Foundational Publications & Patents

- Cunha et al. 3D-printed microgels supplemented with dentin matrix molecules as a novel biomaterial for direct pulp capping. Clin Oral Investig 2023
- PCT/US2018/035200 Dental pulp constructs
- US11,278,474 Pulp regeneration compositions and methods of forming and using the same

## Achievements

- 2 confirmatory large-animal studies concluded
- GMP manufacturing started
- Seed round in progress

## Regulatory Pathway

- IDE

## Opportunities for Partnerships

- Seed Funding for RegendoDent, Inc. to launch RegendoGEL and conduct a clinical trial

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