



OralBiolife

PiezoGel: Optimizing Bone Regrowth in Dental Care for Humans and Animals

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Oral Biolife Overview

Revolutionizing Periodontal Care with Pioneering Bioactive Technology



Innovative Technology

PiezoGEL offers a breakthrough in periodontal treatment, utilizing the Piezoelectric effect to promote bone regeneration and reduce inflammation



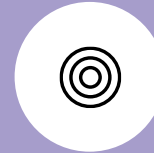
Industry Endorsements

Significant interest and support from leading dental supply companies, indicating a strong market demand and validation of the product's potential



Intellectual Property

Robust PCT patent application securing a broad protection scope, enabling other dental applications and setting a barrier for competition



Market Potential for Both Animals and Humans

Addressing a substantial market opportunity within the USA for both moderate and severe periodontal cases, with a total potential exceeding \$3 billion



Strong Research Foundation

Backed by compelling *in vivo* studies and ongoing companion animal studies, demonstrating the effectiveness of PiezoGEL in regenerating high-quality bone



Strategic Go-to-Market Plan

A clearly defined path to market through leveraging distributor relationships, accelerating awareness, and exploring strategic partnerships for scaling, revenue generating by 2024

Periodontal Disease

A call for innovative intervention

- **Prevalence**

Affecting half of adults globally—65 million in the U.S.—periodontal disease is a widespread, yet overlooked health concern

- **Inadequate Solutions**

Standard SRP treatments fall short, offering temporary inflammation relief without addressing underlying bone loss—often at the expense of patient comfort

- **Market Gaps**

There's a pressing market void for an innovative, non-invasive treatment that can eradicate biofilms and facilitate natural bone regeneration

- **Health Consequences**

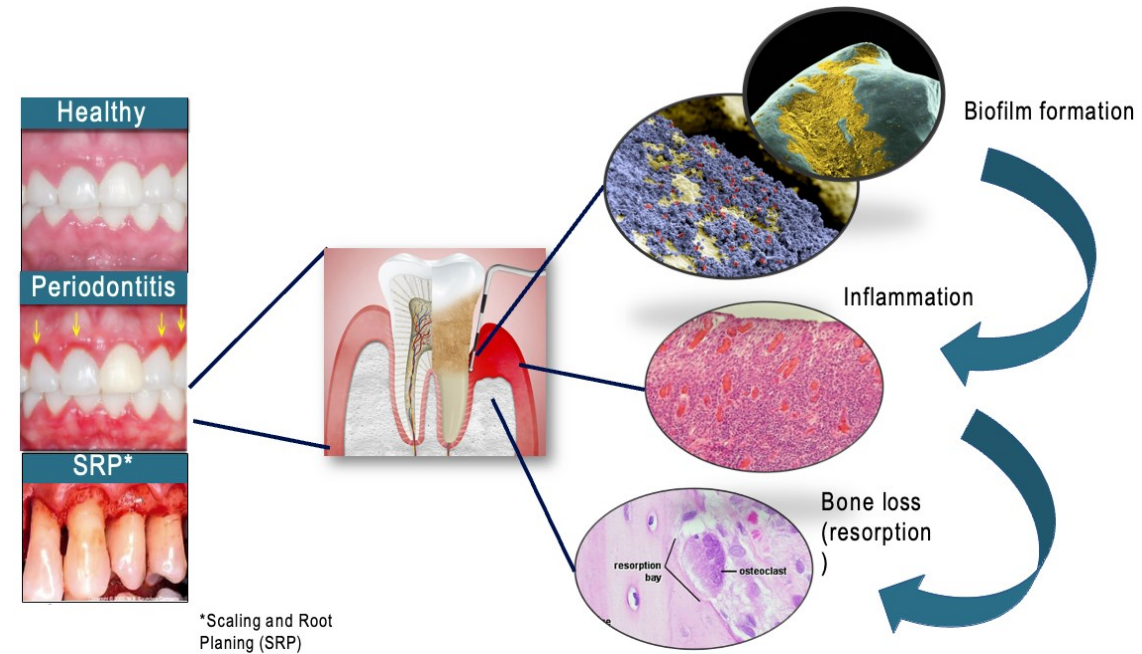
A gateway to systemic issues—osteoporosis, cardiovascular diseases, diabetes, strokes, respiratory ailments, and cognitive disorders in humans; chronic pain and vital organ issues in pets

- **Surgical Shortfalls**

Surgical remedies come with a heavy toll: prohibitive costs, patient distress, and post-operative complications such as infections and heightened sensitivity

- **Cross-Species Demand**

Lack of effective periodontal treatments spans across species, leaving a gap in the healthcare market for both human and veterinary patients



Introducing PiezoGEL: The Next Generation of Periodontal Care

A breakthrough in bioactive dental treatment

Innovative Composition

A proprietary blend of biomedical GelMA hydrogel, piezoelectric ceramic particles, and a photoinitiator, creating a powerful, bioactive gel designed specifically for dental applications

Versatile Applications

Developed for both human and animal dental health, PiezoGEL targets the core needs in periodontal disease treatment: effective biofilm disruption and promotion of bone regeneration

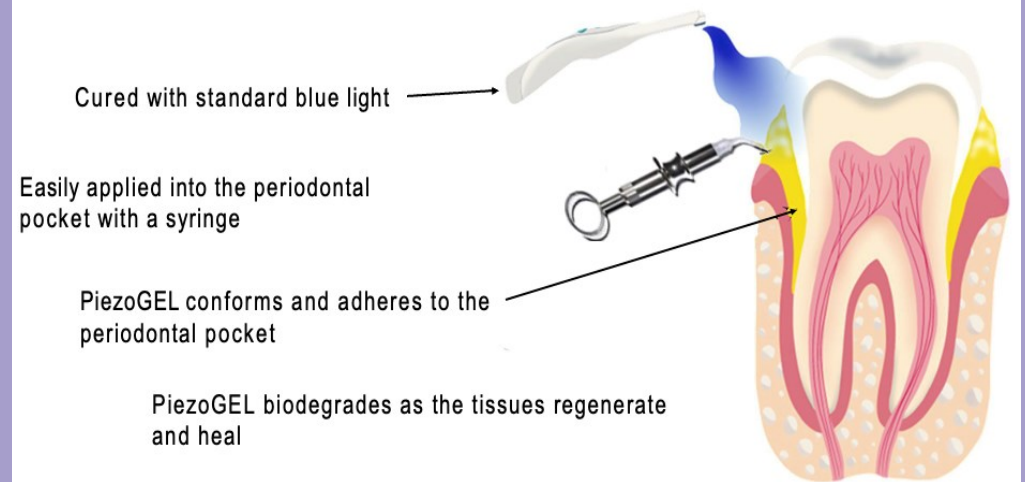
Enhanced Effectiveness

Leveraging the piezoelectric effect, PiezoGEL transforms mechanical stress into electrical energy, stimulating bone growth and healing

Ease of Use

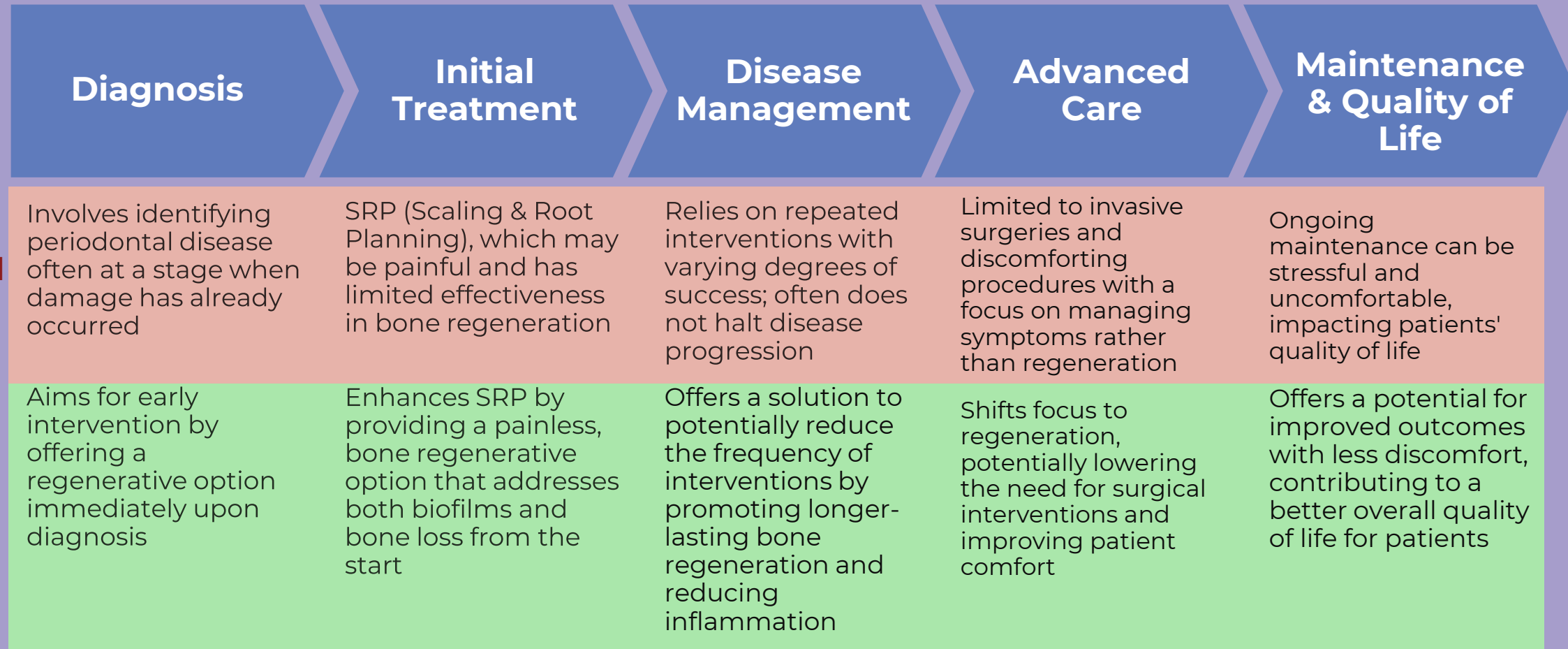
Designed for simple application, PiezoGEL can be easily administered in a dental clinic setting, enhancing patient experience and clinical efficiency

Ease To Use, Seamless Integration Into Practice



The Periodontal Health Journey

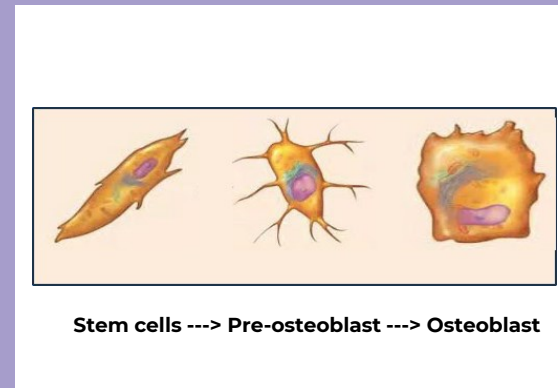
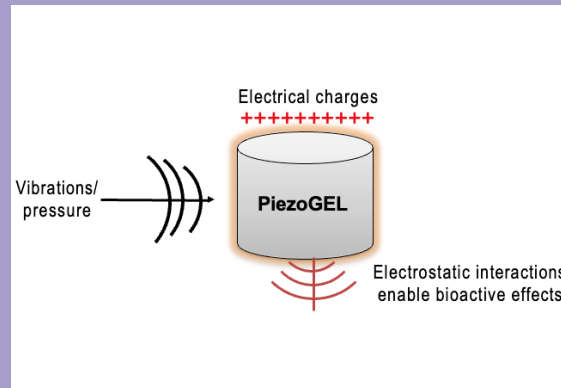
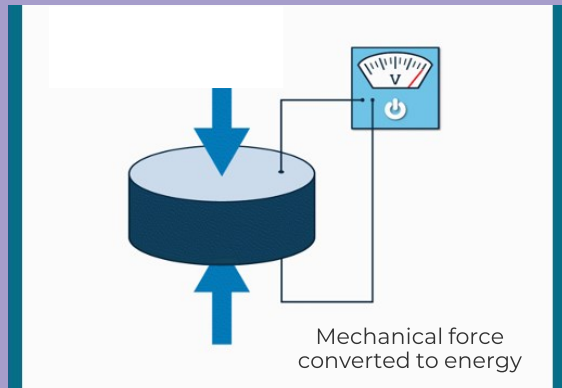
Navigating towards a new horizon in periodontal care



PIEZOGEL IS THE ONLY PRODUCT TO INHIBIT THE RECOLONIZATION OF BIOFILMS AND REGENERATES BONE WITHOUT CAUSING PATIENT DISCOMFORT

How PiezoGEL Works: Advancing Dental Regeneration

Harnessing the Piezoelectric Effect for Superior Periodontal Healing



The Piezoelectric Effect

Pressure or vibrations within the periodontal pocket are converted into electrical energy by piezoelectric materials within the gel

This phenomenon is widely harnessed in various technologies and is now innovatively applied in dental care

Osteoblast Activation

PiezoGEL directs this electrical energy towards osteoblasts—the architects of bone synthesis and mineralization

By stimulating these crucial cells, PiezoGEL sets the stage for robust bone regeneration in periodontally affected areas

Bioactive Electrostatic Interactions

PiezoGEL's electrostatic effects stimulate dental tissue, transforming stem cells into new bone-forming osteoblasts and invigorating existing ones, thus expediting the healing process

Regeneration at the Cellular Level

With PiezoGEL, the body's innate healing mechanisms are amplified, fostering an environment where new bone tissue is not just a possibility but a reality, effectively turning back the clock on periodontal damage

PiezoGEL Backed by Rigorous Research: Compelling Data from *In Vivo* Studies

In Vivo (Mouse) Ligature Induced Model for Periodontal Disease

Treatment groups n=6 per group

1. No treatment
2. SRP (Surgery and Root Planing)
3. SRP + Arestin (Minocycline microspheres)
4. GelMA
5. PiezoGEL
6. Healthy

Multiple endpoints

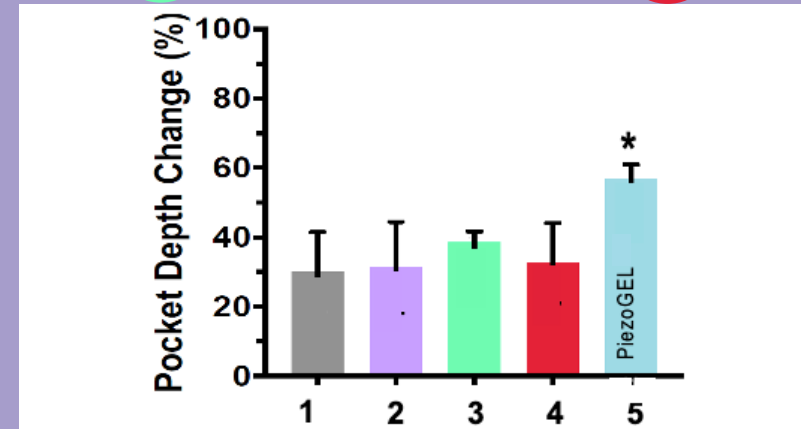
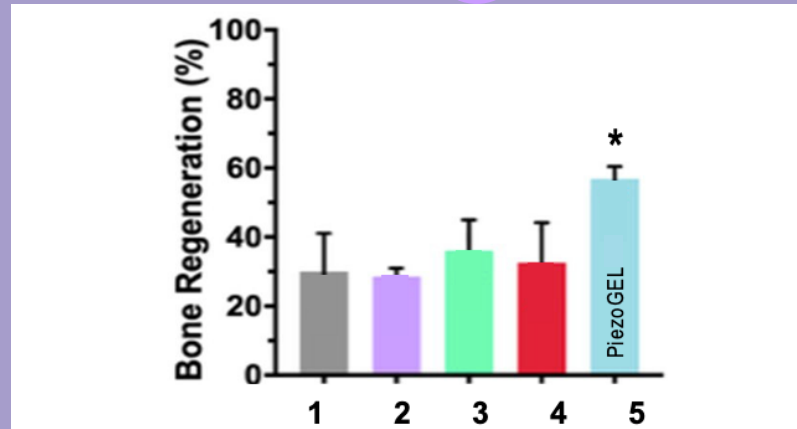
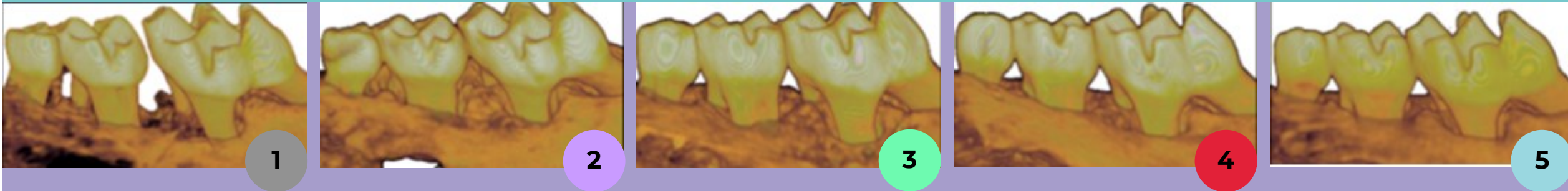


PiezoGEL Promotes Bone Regeneration

Regrowth of Bone in 30 Days with 1 Application

Micro CT Imaging

- Dark areas = Low-quality bone
- Yellow areas = High-quality bone

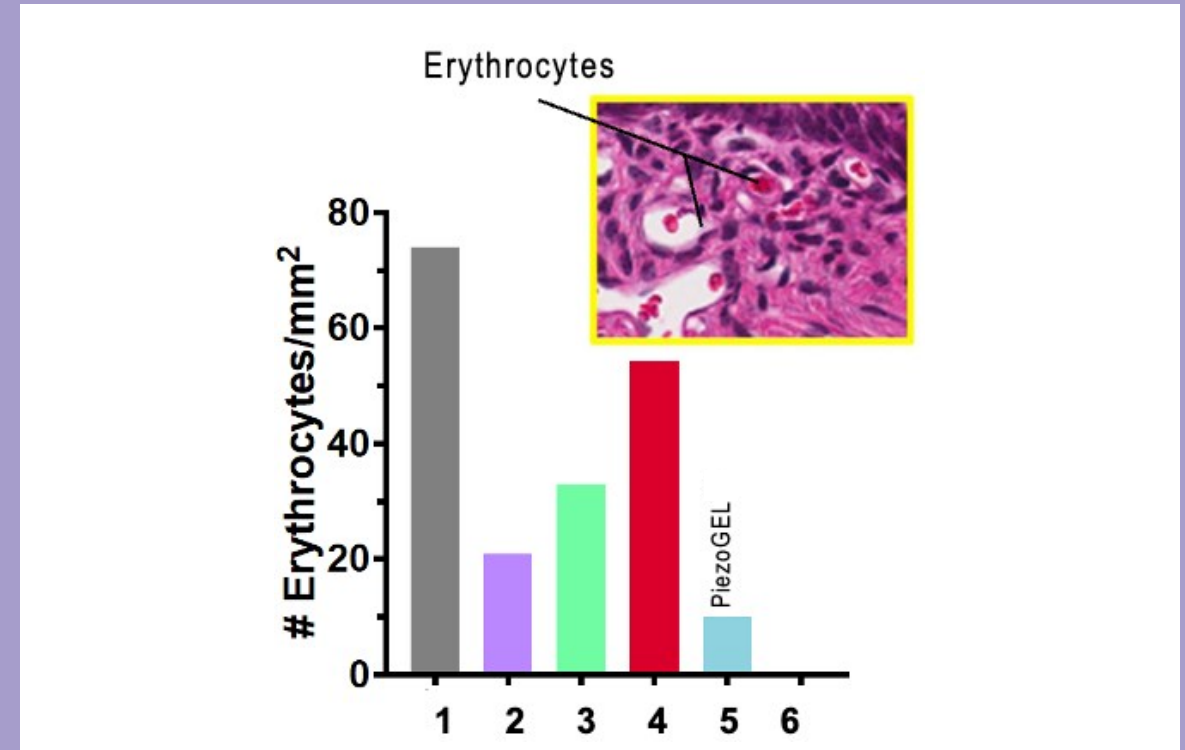
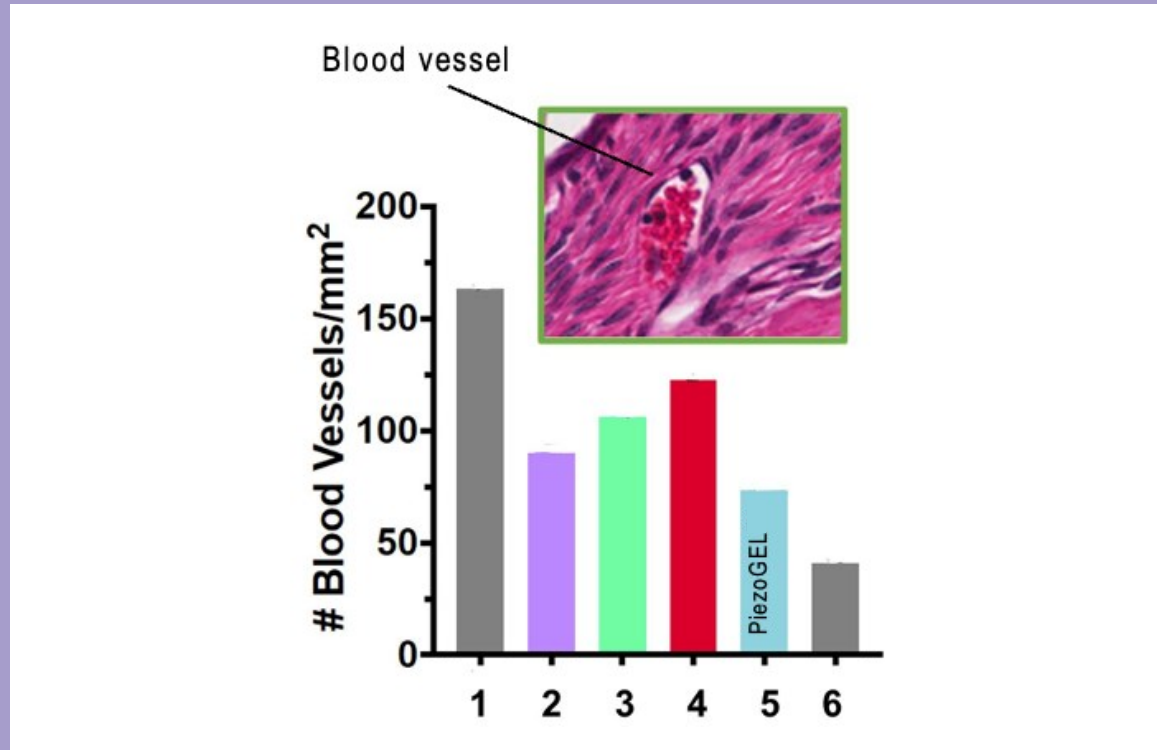


Legend:

- 1 No treatment
- 2 SRP Only
- 3 SRP + Arestin
- 4 SRP + GelMA
- 5 SRP + PiezoGel

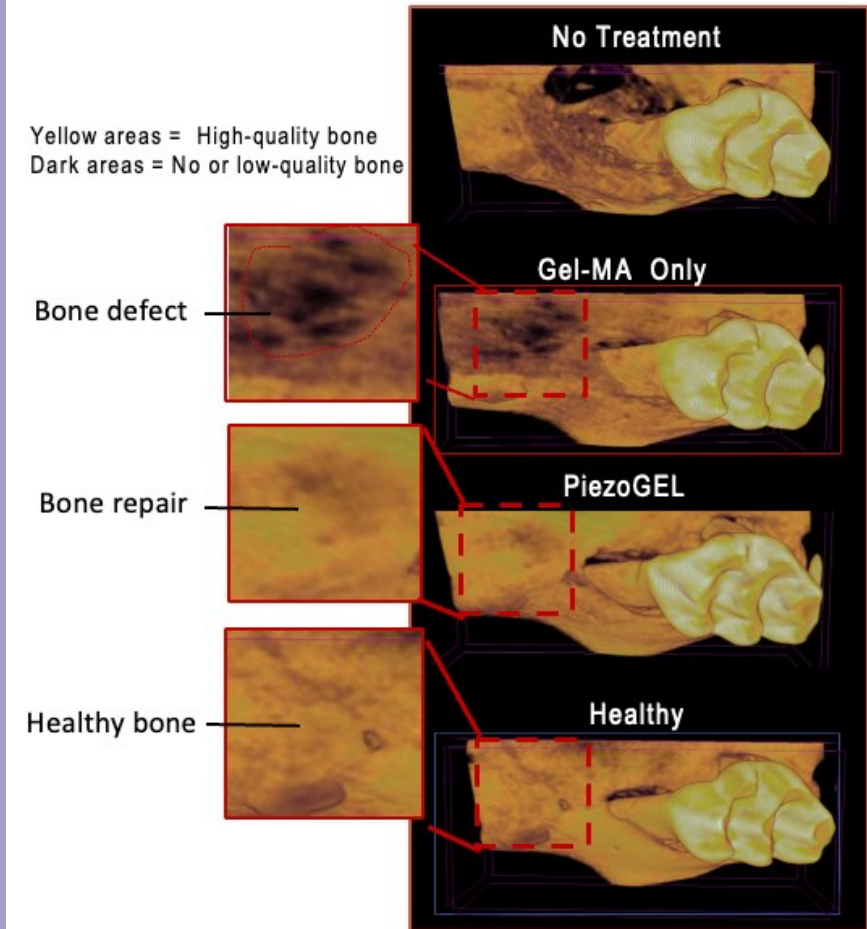
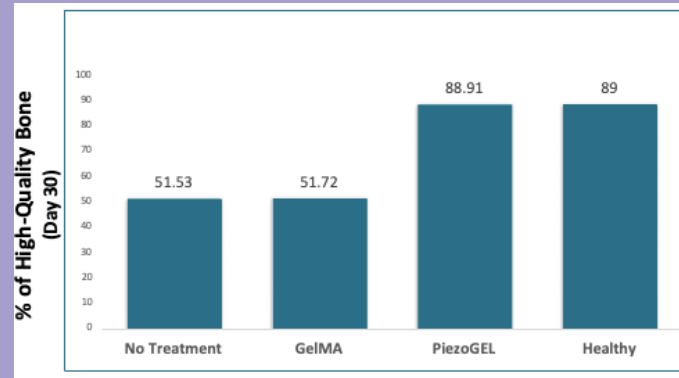
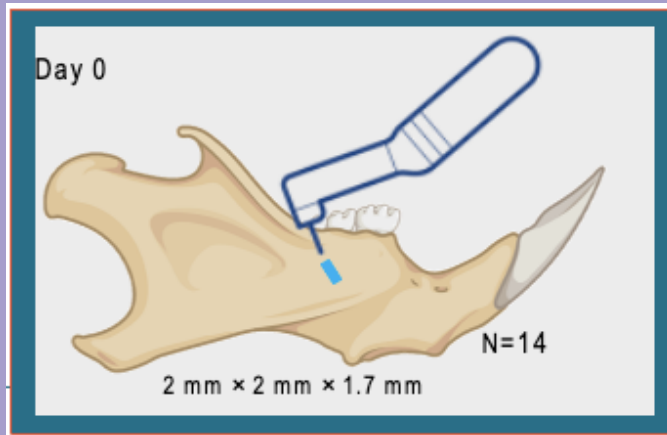
*p < 0.05 vs no treatment

PiezoGEL Decreases Periodontal Inflammation



PiezoGEL decreases the number of blood vessels which is indicative of decreased inflammation **PiezoGEL decreases erythrocytes which is indicative of decreased inflammation-associated with bleeding**

Bone Defect Model Demonstrates PiezoGEL Promotes Regrowth of High-Quality Bone



Preliminary Findings: PiezoGEL in Veterinary Care

Early success indicators in ongoing companion animal studies

- **Adaptability to Veterinary Use**

Initial responses indicate PiezoGEL fits seamlessly into standard veterinary procedures

- **Ease of Application**

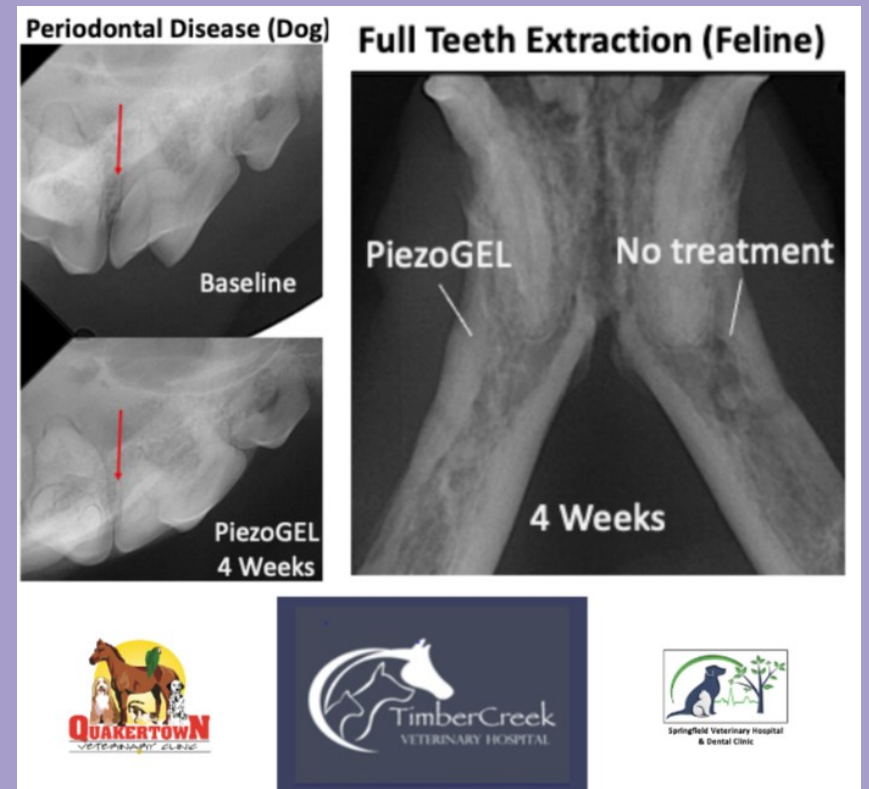
Veterinarians report that PiezoGEL is straightforward to use, with no application challenges, streamlining the treatment process

- **Safety Profile**

Preliminary observations suggest PiezoGEL is very well tolerated by animal patients, with no adverse safety events noted

- **Bone Regrowth Potential**

Early results are promising, showing noticeable bone growth within four weeks, potentially reducing or eliminating the need for follow-up applications



Expansive Market Horizon for Periodontal Innovation

PiezoGEL: Addresses a Multibillion-Dollar Healthcare Need



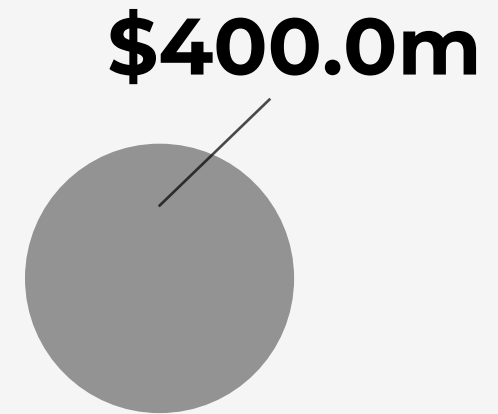
Western Europe Severe & Moderate

51M addressable patients



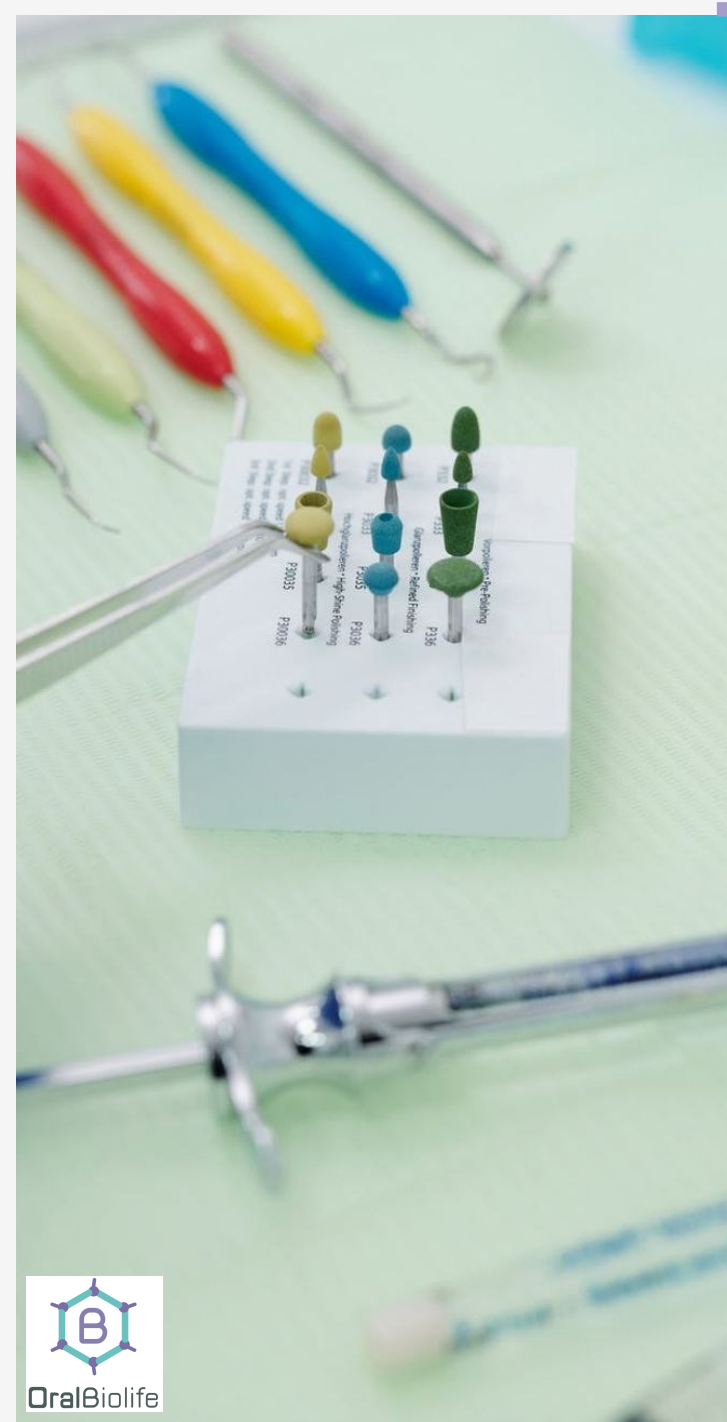
USA Moderate

52M addressable patients



USA Severe

13M addressable patients



OralBiolife Market Activation Blueprint



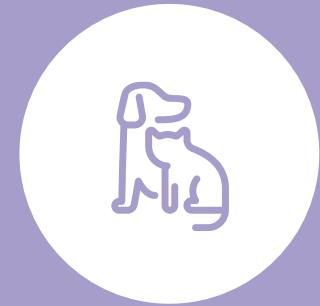
Primary customers

Dentists, periodontists, and hygienists
Significant incremental revenue for the dental offices



Distribution channel

Leveraging the distributor relationships to accelerate awareness & education
Explore strategic partnership opportunities with distributors & manufacturers



Animal health partnership

Commercializing PiezoGel for the companion animal market in 2024, generating revenue

Revenues supports R&D and commercialization efforts for human market

Envisioning a future where advanced oral care is accessible and efficient, our blueprint charts a path to revolutionize dental health through strategic market engagement, informed education, and demonstrable patient advantages

Robust IP & Significant Industry Interest

Intellectual Property

- PCT application filed 3/26/20 (PCT/US20/24951) sets a precedent for comprehensive protection, presenting a robust barrier to competition
- Coverage for any composite comprising a resin matrix and piezoelectric nanoparticles, signifying a leap forward in dental application technology
- The patent's scope underpins versatility, enabling extensions into a range of restorative dental applications

Endorsements & Interest from Dental Supply & Manufacturing Leaders

Manufacturers



Distributors



- Recognized potential by leading companies such as Dentsply Sirona and Straumann, highlighting the breakthrough status of PiezoGEL
- Support letter excerpts praise PiezoGEL as "an interesting new way to deliver dental care materials," showcasing a promising path for market entry and growth

Fueling Oral Biolife's Mission: A \$2.5M Investment to Transform Dental Care

Raising \$2M for friends, family, invited funds, and family offices at a pre-money valuation of \$25M for corporate financing



Canine Efficacy & Safety Study

Aiming for IDE approval with data from pivotal veterinary safety and efficacy studies



IDE Filing

Filing for FDA's IDE to initiate clinical studies, a critical step towards human trials



Manufacturing Scale-Up

Preparing for market demand with enhanced production capacity and quality control



Initiate Toxicology Study

Ensuring safety compliance with in-depth toxicological evaluations of PiezoGEL



Initiate Pilot Study

Starting human pilot studies to gather initial efficacy data and refine product use



Commercial Launch

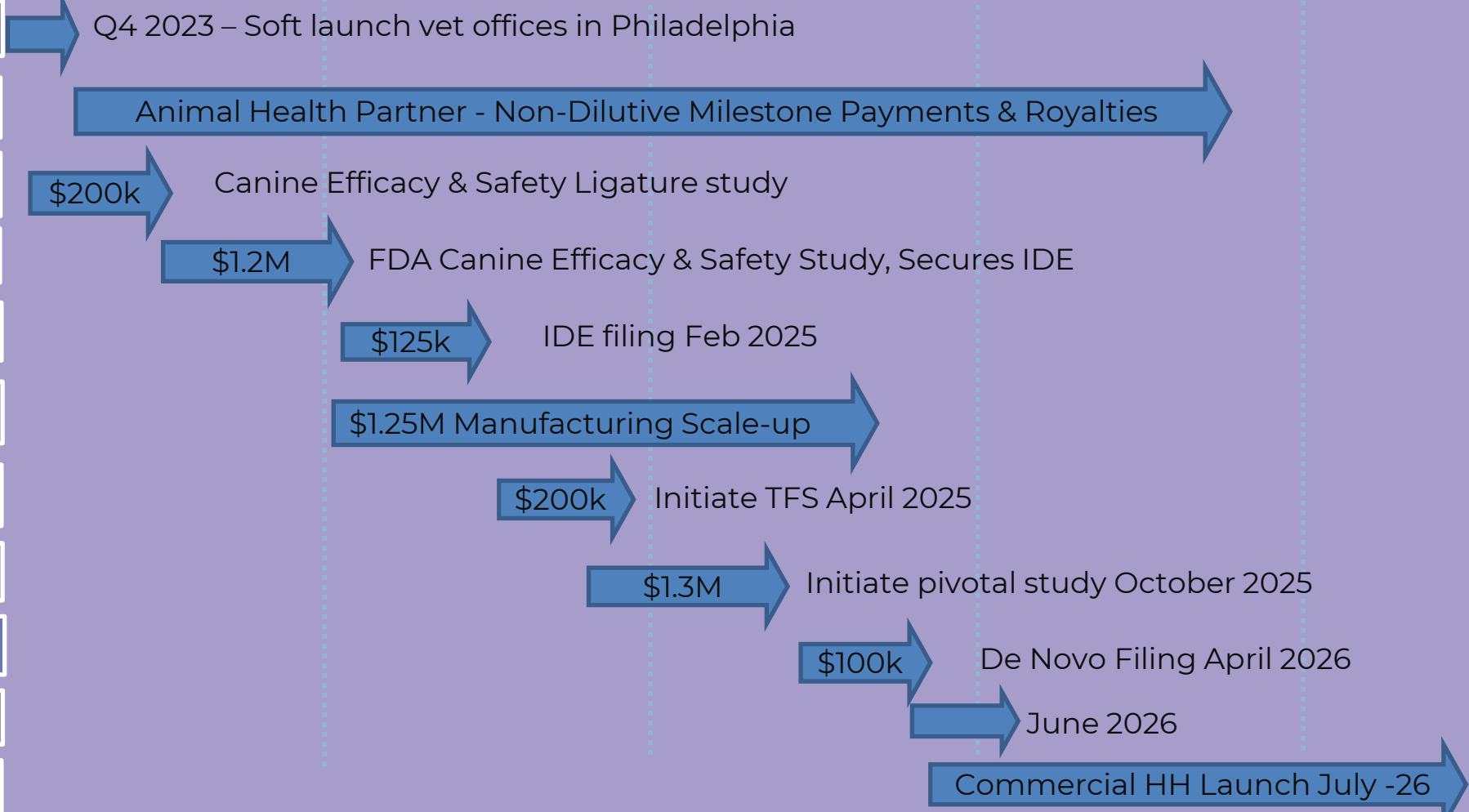
Bringing PiezoGEL to market after clinical success, set to innovate periodontal care

PiezoGEL: Use of Funds

Commercial Road Map

2024				2025				2026				2027			
1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q

- Soft Launch Animal Health
- AH Partnership & Launch
- Caine Study
- FDA - Caine Study
- IDE Filing
- Manufacturing
- TFS Initiation
- Pivotal Study
- De Novo Filing
- Acquisition/MK Approval
- Commercial Launch



Accomplishments & Value Drivers

Commercial Drivers	C-Corp	Temple Licensing	Animal Health Partner	Series A Raise	Animal Health Exit	New IP	Commercial Partnerships
	Leadership Team	Pre Seed	Seed Financing	Revenue generation	Close Series A	Commercial Partnerships	De NOVO Filing
	Business plans	Likarda Partnership	CDMO	Manufacturing Scale-up	Exit Dental Periodontal Indication	Exit Dental Periodontal	
	\$10M	\$10M	\$15M	\$25M	\$35M	\$50M	\$60M
Clinical Drivers	Invitro Data *Periodontal *Composite *Dentures In Vivo Data *Periodontal *Bone Defect	Periodontal Hydrogel Publication CRO Selected	Initiate Canine study Canine data Bone Defect Publication	Canine Data Initiate Lg Canine study File IDE	Human Feasibility Study Pipeline DEV. *Implants *Bonding	Pivotal Study Develop Orthopedic / *Trauma Indications	New IP Orthopedic Trials
	1H '23	2H '23	1H '24	2H '24	1H '25	2H '25	1H '26

PiezoGEL Platform with 7 Indications

OBL 101: Periodontal

Status: PI Animal Studies

OBL 102: Implant Coatings/Peri Implantitis

Status: Pre-Clinical

OBL 103: Orthopedic Long Bone - Trauma

Status: Pre-Clinical

OBL 104: Dentures

Status: Pre-Clinical

OBL 105: Composite Restorations

OBL 106: Bonding Agents

OBL 107: Pediatric Sealants

Q4 2023

Q3 2024

Q2 2025

Q1 2026

Q4 2026

Q3 2027



Our Team



**Stella Vnook, MBA
Doctorate PH
Econ, Pharmacy**
Founder | President | Board
Chair
*Major Biopharma
Executive,
Transformational Leader*



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Breitenbach**
Chief Executive Officer
*Pharma Commercial
Launch Expert*



**Kenneth Kilgore,
PhD, MBA**
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*Scientific
Discovery/Business
Implementation*



Gordon Matz, CPA
Chief Financial Officer
Private Equity CPA



**Doug Nissinoff,
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*Venture Capitalist,
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*College of Dentistry,
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*Chair: Department of
Periodontology and Oral
Implantology; Director MSc
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*Innovator in Dental MedTech,
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**Tanya Kameneva,
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*Internal Medicine & Surgical
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Todd Abrams, PhD

*Immunologist, New Ventures
and Business Development,
Temple University*

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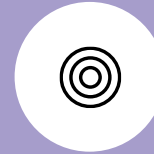
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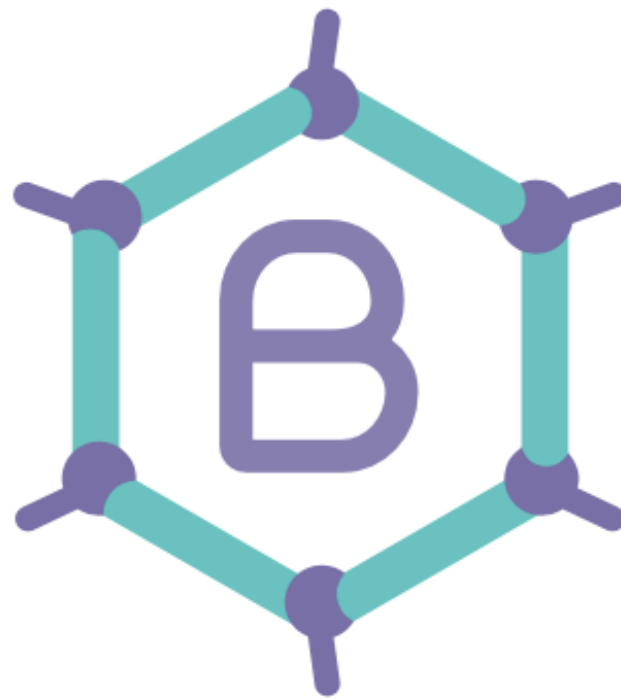
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THANK YOU

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