

Saving a tooth could help protect your patient's health

Store-A-Tooth™ enables families to collect and save the stem cells in their teeth. Stem cells are found in baby teeth that are naturally coming out and other healthy teeth being extracted, such as wisdom teeth. Dental stem cells have the potential to be used in both dental and medical applications, and have already been shown to regenerate jaw bone and treat periodontal disease in humans. Similar to cord blood stem cells (which have been used to treat leukemia and blood-related cancers), dental stem cells are being studied by researchers to see how they could someday play a role in treating conditions such as diabetes, spinal cord injury, stroke, heart attack and neurological diseases like Parkinson's and Alzheimer's.

Any healthy tooth is a viable candidate for stem cell preservation.



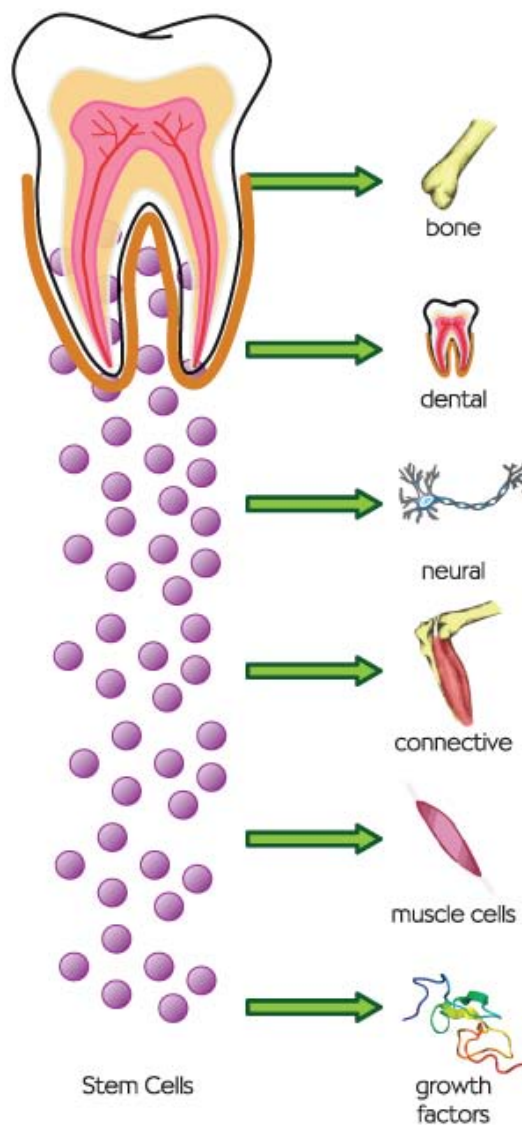
Baby Teeth



Orthodontia



Wisdom Teeth



Potential Applications

Dental

- Dental Bone
- Periodontal Disease
- Pulp Regeneration
- Craniofacial Bone
- Tooth Regeneration

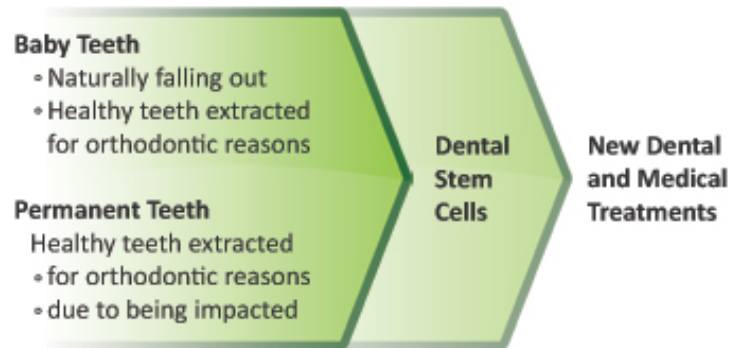
Medical

- Skeletal Bone
- Cornea Repair
- Type I Diabetes
- Spinal Cord Injury
- Muscular Dystrophy
- Myocardial Infarction (heart attack)
- Stroke
- Liver Disease
- Parkinson's Disease
- Alzheimer's

Stem cells from teeth could lead to new therapies for a number of diseases

Teeth are a convenient, plentiful source of stem cells

Stem cells help the body renew and repair itself. For decades, doctors have used adult stem cells from bone marrow and umbilical cord blood to treat diseases. In 2000, stem cells were discovered in teeth, complementary to those found in cord blood. Dental stem cells are readily available in baby teeth which are getting ready to fall out and other healthy teeth, such as wisdom teeth, which need to be extracted. Stem cells from teeth can be easily collected and cryopreserved for future dental and medical applications. Research published in 2011 showed that dental stem cells can produce insulin,¹ suggesting they could eventually play a role in treating type 1 diabetes.



Dental stem cells can be collected from healthy baby teeth and adult teeth.

Potential clinical applications with dental stem cells

While research is early, it is progressing quickly and showing great promise. Dental stem cells have already been used to successfully regrow jawbone and treat periodontal disease in people, and scientists and clinicians are investigating many additional uses for stem cells in the near future. These new stem cell therapies are known as “regenerative medicine.”

	Today	Near Term	Long Term
Dental	Dental Bone Regeneration Periodontal Disease Regenerative Endodontics Research Uses	Regenerating Dental Pulp	Regrowing Teeth
Medical		Craniofacial defects Skeletal Bone	Diabetes Myocardial Infarction Spinal Cord Injury Muscular Dystrophy Cornea Repair Liver Disease Stroke Parkinson's Disease

1. Refer to <http://www.ncbi.nlm.nih.gov/pubmed/21335539> or <http://www.store-a-tooth.com/applications/diabetes.php>.

Be a leader in offering Dental Stem Cell banking

Benefits to your patients:

- An affordable, convenient, easy way to save their family's stem cells
- Dental stem cells show broad potential for future use in both regenerative medicine and dentistry
- A gift parents can give children to help protect their future health

Opportunities for your practice:

- Differentiate your practice with both patients and referring dentists
- Potential for new revenue, new patients
- Store-A-Tooth discounts and CE credits for your staff
- Enable new dental / medical applications

Simple for you – Invaluable for your patients

Dental stem cell banking services can be easily incorporated into your practice. The only change to your workflow is placing the extracted tooth into a Tooth Collection Kit instead of discarding it as waste. We arrange for courier pick up at your office and overnight shipping to our lab.

Patient Education



Dentist discusses dental stem cells with patients.

Tooth Extraction



Teeth are collected by a dentist and placed in a tooth transport kit.

Sample Transport



Samples are sent overnight to maximize cell viability.

Stem Cell Processing



Dental stem cells are collected and sample quality control performed.

Cryopreservation



Cells are frozen and maintained in a cryopreserved state.

Choose the highest quality in cryopreservation

With Store-A-Tooth™ from Provia Laboratories, you select the only dental cell banking service which:

- ✓ Uses an FDA-approved and ADA-accepted transport kit, Save-A-Tooth®, to preserve cell viability
- ✓ Sends samples overnight from your office to our lab to maximize stem cell quality
- ✓ Tests samples for Industry Standard stem cell markers to verify presence of stem cells
- ✓ Uses a lab that follows the strictest standards for quality in stem cell and human tissue banking
- ✓ Is FDA-registered, CLIA certified, and accredited by the American Association of Blood Banks

We make it easy to get started



Program for Dentists and Oral Surgeons

Materials for Patient Education and Tooth Collection

- ✓ Informational brochures
- ✓ Educational tools and materials
- ✓ FDA-approved, ADA-accepted tooth transport device



Practice Promotional Tools

- ✓ Custom web page for your practice
- ✓ PR kit including press release
- ✓ Generate incremental revenue for your practice



Training for your Staff

- ✓ Orientation and new client walkthrough webinars
- ✓ CE courses on dental stem cell science and applications
- ✓ Phone and online support



Quality Report

- ✓ Lab report for each client



Staff and Professional Discounts

- ✓ \$150 savings on Store-A-Tooth service for you and your staff's family

Partner with Provia Laboratories – Bank on Quality™

Emerging Field, Advancing Research leads to exciting potential for Dental Stem Cell applications

While research is still in its nascent stage, the promise of stem cells from teeth is drawing increasing attention from the global research community, which has rallied around the promise of dental stem cells since their discovery by NIH scientists in 2000.¹ One of the most exciting recent developments is a study published in 2011 that showed stem cells from teeth can create islet-like cells which produce insulin in a glucose responsive manner,² suggesting a potential therapy for type 1 diabetes (using dental stem cells for autologous transplantation of pancreatic islet-cells). Highlights of the past decade of research follow.

Discovered in 2000, Focus of Worldwide Research

Whereas stem cells from umbilical cord blood are being used to treat leukemia and blood-related diseases, stem cells from teeth are being studied for a wide range of diseases due to their ability to form connective, neural, muscle, bone and dental tissues. Dental stem cells have already been used to regenerate jawbone³ and periodontal ligament⁴ in human patients. Research is now underway for a growing number of regenerative dental and medical applications. The American Academy of Pediatric Dentistry (AAPD) issued a Policy on Stem Cells in 2008 that discusses emerging scientific and clinical aspects of dental stem cells and the dentist's role.⁵

"...The American Academy of Pediatric Dentistry recognizes the emerging field of regenerative medicine and encourages dentists to follow future evidence-based literature in order to educate parents about the collection, storage, viability, and use of dental stem cells with respect to autologous regenerative therapies. As the technology continues to evolve, the process of procurement of dental stems cells should be accomplished only with deliberate integrity and appropriate informed consent to assure the highest ethical standards and quality of outcomes."

The Science of Dental Stem Cells

It is now known that stem cells can be collected from dental pulp of both deciduous⁶ and permanent teeth,¹ periodontal ligament,⁷ apical papilla,⁸ and dental follicle.⁹ The dental stem cells arise from the neural crest during odontogenesis,¹⁰ and reside in a stem cell niche that includes pluripotent stem cells, mesenchymal stem cells, and neuroprogenitors, amongst more fully differentiated cells. Dental stem cells can be differentiated into a range of tissues useful for regenerative dentistry and medicine, including dentin, pulp, bone, muscle, adipose tissue, and neurons.¹¹



Clinical Uses of Dental Stem Cells

Beyond the regeneration of alveolar bone and periodontal ligament that has been accomplished in human studies, dental stem cells are also being studied in animal models for a wide range of both dental and medical diseases: pulp and tooth regeneration,^{12,13,14,15,16} repairing craniofacial and skeletal bone,¹⁷ myocardial infarction (heart attack),¹⁸ tissue ischemia,¹⁹ diabetes,^{20,21} spinal cord injury,²² muscular dystrophy,²³ stroke,²⁴ cornea repair,²⁵ liver disease,²⁶ Alzheimer's²⁷ and Parkinson's disease.²⁸ The accessibility and utility of mesenchymal stem cells from teeth that would otherwise be discarded suggest a bright future for the routine use of dental stem cells in regenerative dentistry and medicine.

Cryopreservation

Similar to umbilical cord blood banking, dental stem cells can be cryopreserved for years and maintain viability. This provides the opportunity for patients who are having otherwise healthy teeth removed in the normal course of dental care to save their own stem cells today for uses tomorrow.

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