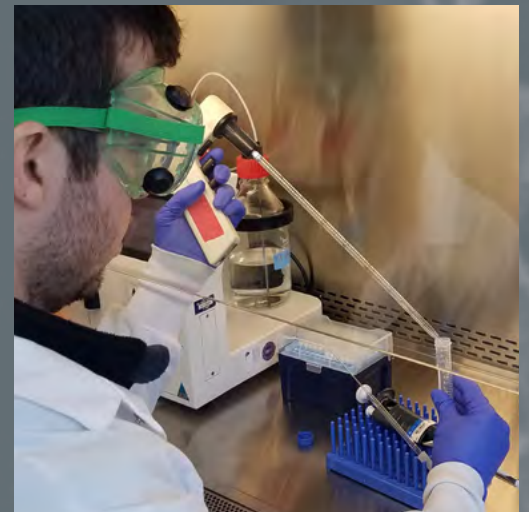
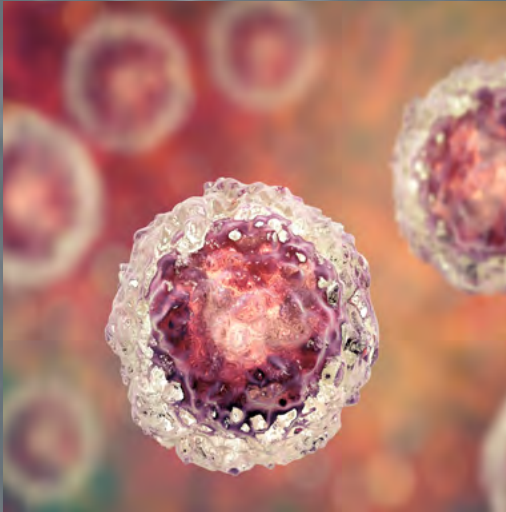




Cleveland Cord Blood
CENTER

Save a Cord. Save a Life.



2019 Year in Review



Save a Cord. Save a Life.

A year of innovation, collaboration, transformation

The year 2019 proved to be a pivotal time for the Cleveland Cord Blood Center (CCBC), both nationally and internationally, as:

- A leader in the collection, processing, storage and distribution of quality cord blood units
- An investigator in the research of umbilical cord blood's expanding potential as a cell therapy treatment
- An innovator in the field of umbilical cord blood cellular therapy initiatives
- A prominent player in fostering greater awareness of the life-giving and lifesaving potential that cord blood stem cells hold



This year, we developed new goals and strategies for the next generation of CCBC. We revisited our Mission, Vision and Values and, as a unified team, updated these statements to reflect the movement forward into the second generation of our lifesaving work. I am proud of the new Mission, Vision and Value statements and feel strongly that through collaboration and innovation, we can meet our 2020 goals and more.

Endless possibilities explored, pursued

Since our founding in 2008, we have actively contributed to what has become a worldwide exploration into the life-giving potential of cord blood stem cells, with research continuing to expand in areas ranging from immunotherapy and cell regeneration to wound healing and cures for chronic disease.

The year 2019 also marked an increase in invitations to share our experiences, technical insights, and visions for next generation opportunities at national and international conferences and meetings. Of particular interest were topics that included our insights into driving utilization of public banked cord blood inventory through research, and identifying landscapes for new product cell therapy initiatives.

With unbounded energy, we are launching into the next decade with a variety of research and cellular therapy initiatives aimed at exploring and advancing new pathways to health and healing through cord blood stem cells.



A handwritten signature in black ink, appearing to be 'MRF'.

Marcie R. Finney, M.S., MBA
Executive Director

Our mission, vision, values for a next generation of opportunity

Mission: We are advancing umbilical cord blood cell therapy treatments: saving lives, enhancing health, and expanding knowledge one birth at a time.

Vision: A world in which cord blood therapies enhance quality of life for all.

Values: Quality Collaboration Innovation Leadership Compassion Integrity



Expertise shared on the cord blood therapies journey

As a leader in research and innovation in the cord blood and cellular therapy industries, the Cleveland Cord Blood Center was invited to share our knowledge and experiences in cord blood banking, research and cellular therapy throughout the U.S. and globally. Our audiences included industry thought leaders, government agencies, the medical community and researchers.

The following are examples of the presentations Cleveland Cord Blood Center team members made in 2019:

Executive Director Marcie Finney...

- Presented *Driving Public Banked Cord Blood Inventory Utilization through Research & Development* to the World Advanced Therapies & Regenerative Medicine Congress & Expo in London
- Showcased *The Diverse Use of Cord Blood for Hematologic and Non-hematologic Indications* in a webinar hosted by the Advisory Committee on Blood and Stem Cell Transplantation (Robert Walsh, Executive Secretary for the U.S. Department of Health and Human Services' (HHS) Advisory Council on Blood Stem Cell Transplantation (ACBSCT)
- Cord Blood Connect Conference, *Consenting for Cord Blood Donation in the Modern Era of Commercialization* in Miami, Florida

Director, Cell Therapy Incubator Wouter Van't Hof, Ph.D...

- Addressed *CMO Landscapes for New Product Initiatives: Novel Outsourcing Models* at panel discussion at the Cell & Gene Therapy Bioprocessing & Commercialization Meeting in Boston, Massachusetts
- Shared Lessons learned from the commercialization of Stem Cell therapies – Case study from working with the FDA to approve the manufacturing of CLEVECORD™ at the 2019 Vein-to-vein: *Commercializing cell therapies: Taking R&D success to industrial scale* in Boston, Massachusetts

Cord blood's amazing gift

Lisa Maxson was 28-years-old when diagnosed with acute myeloid leukemia. Following 10 weeks of chemotherapy after her August 2011 diagnosis, the mother of a 5-year-old, a 3-year-old and a 16-month-old was told she would need a bone marrow transplant. When a bone marrow match was unavailable, the search for an umbilical cord blood match began and within a week, two identical cord blood matches were found.

On December 15, the Troy, Ohio native received a double umbilical cord blood transplant at The James Cancer Hospital at Ohio State University. "I have an amazing husband, Tom, and both sides of the family stepped up to help. Our children also wanted to help, and they were resilient," Maxson said.

"I may never get the chance to meet the two baby girls whose cells are inside me, and I don't know why their parents donated their umbilical cord blood, but I'm so glad they did," she continued. "If it wasn't for the cord blood matches on the registry, I wouldn't be here to cheer on my own children. I can now be there for them as they grow up...and throughout their lives."

Thankful and blessed, Lisa now feels it is time to pay it forward. She and her father launched The Buckeye Be The Match 5K Run/Walk in her hometown of Troy, raising funds and awareness in support of bone marrow and cord blood stem cell donations. In addition, the two were named as Be The Match Ambassadors, where they reach out to state and national legislators to enlist the support needed for those in need of a transplant.

More recently, she's become a trained courier for the Be The Match program. "I believe that I've received an amazing gift, and it's now my time to give back," she concluded.



About 2019 Cord Blood Recipients and Donors

- Recipients ranged in age from under 1 to 73
- Race of units distributed for transplant:
 - 67% Caucasian; 13% African American;
 - 3% multi-race; 8% Hispanic; 5% Asian
- Units distributed: in the U.S – 81%; internationally – 19%
- Units collected have been used to treat a variety of diseases including:
 - Acute lymphoblastic leukemia (ALL)
 - Acute myelogenous leukemia (AML)
 - Non-Hodgkin's lymphoma
 - Myelodysplastic/myeloproliferative disorders
 - Disorders of the immune system
 - Inherited disorders of metabolism
 - Severe aplastic anemia



Parents recognize value of cord blood donation

When their son Nate was born in October 2017, parents Natalie Wallace and Luther Cuffy of San Francisco didn't hesitate to donate their baby's umbilical cord blood at Kaiser Permanente San Francisco Medical Center, a hospital partner of the Cleveland Cord Blood Center.

Wallace, whose roots are European, and Luther, an African-American, understood the importance of diversifying the cord blood bank with the Cleveland Cord Blood Center, increasing the potential for a donor match for someone of similar ancestry.

"It's exciting to think of the benefits that cord blood offers. We are happy we can provide it if we can help someone who is going through blood cancer," said Wallace, a registered nurse.

She found cord blood donation to be incredibly easy, "with no interruption at Nate's birth, or during my bonding time with him," she noted. "As an RN, I wish it would become the normal thing for everyone to do. It did not feel invasive at all.

"Cord blood is precious...it's like gold, and has so much potential to help so many," she added.



Cord Blood Collections by Hospital

1,311

Piedmont Atlanta
Hospital

1,197

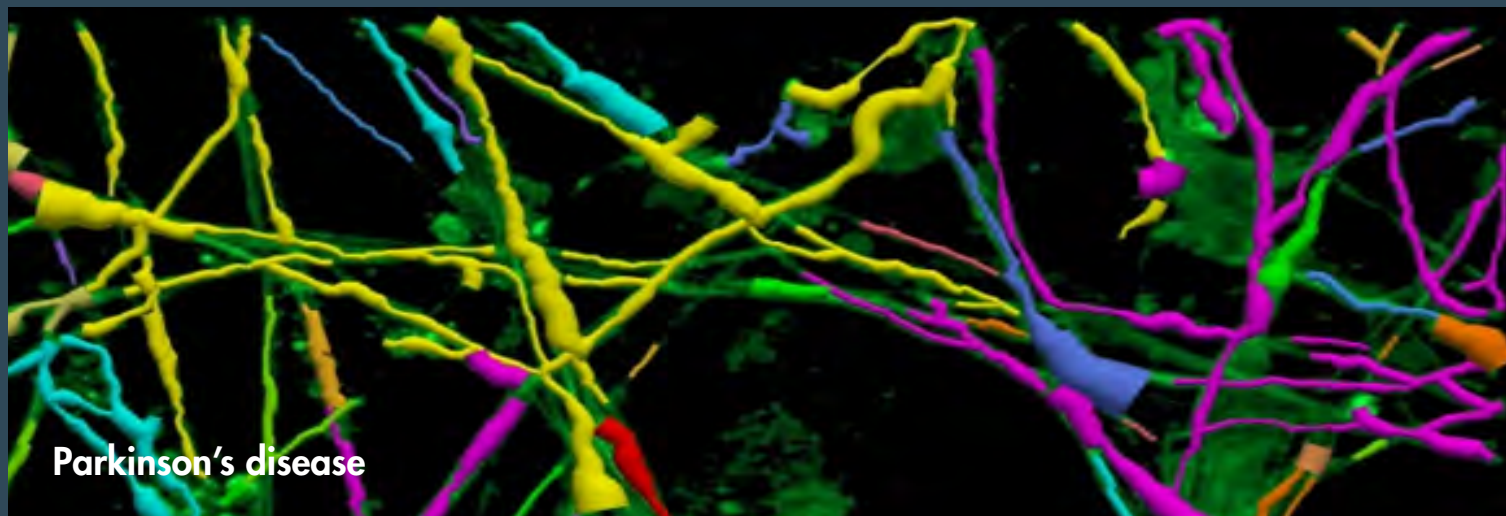
Emory University
Hospital Midtown

350

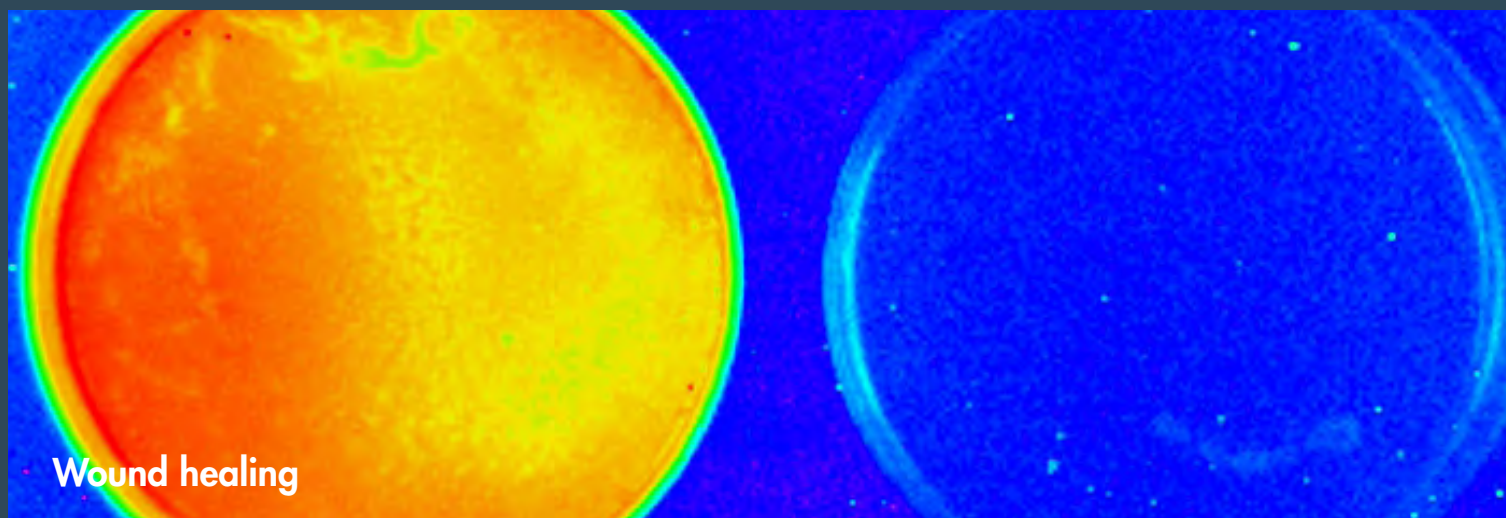
Kaiser Permanente
San Francisco



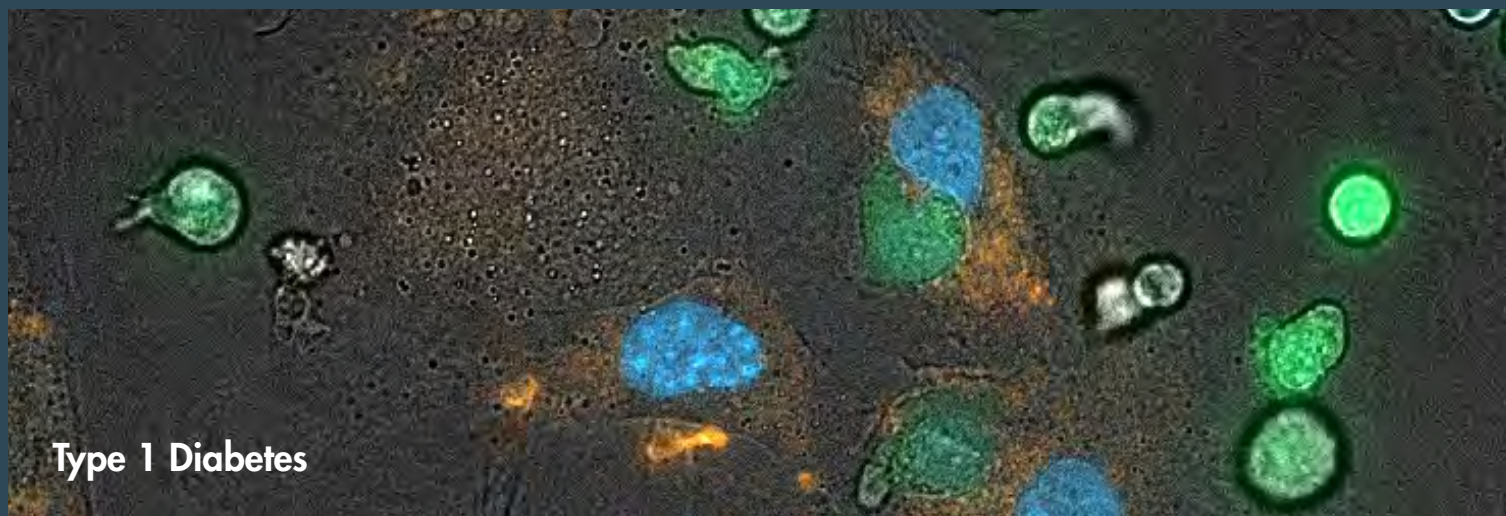
Next gen cord blood research



Parkinson's disease



Wound healing



Type 1 Diabetes

Enhancing the wound healing process

While tied to a variety of causes, infection is the main hindrance to chronic wound healing, with a significant percentage tied to complications of diabetes and diabetic ulcers. In addition, certain bacteria have been able to resist conventional antibiotics and antimicrobials by either adopting a resistant form called a biofilm or through the emergence of new, antibiotic-resistant strains.

Despite standard clinical treatment such as wound dressing and debridement of necrotic tissue, wound infection can lead to limb amputation, with patients facing a five-year survival rate of 27 percent.

Cord blood's unique healing properties

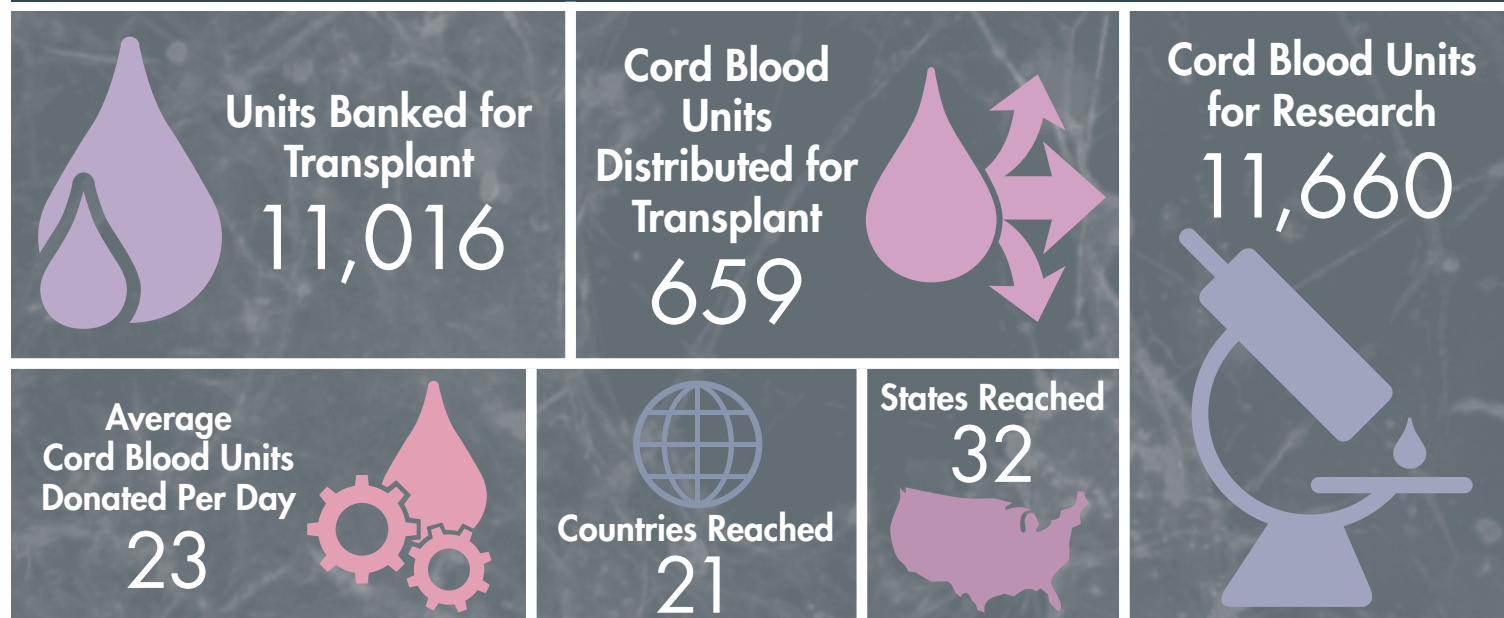
A member of the Cleveland Cord Blood Center Associate Research staff, Ryan Stadel, Ph.D., is exploring how CordHeal™, a proprietary product of the Cleveland Cord Blood Center derived from umbilical cord blood monocytes and platelets, can prove helpful in treating those at greatest risk for limb amputation.

Monocytes are an innate defense to bacteria while autologous monocytes have shown a modest increase in wound healing. Monocytes, as well as platelets, from umbilical cord blood provide a rich source of cellular and secreted products for treatment of injury and chronic wounds. An infant heals quickly, without a scar. Umbilical cord products like CordHeal may hold the key to transfer this capability to adults.

"We're investigating how the topical application in the form of a gel that contains umbilical cord blood monocytes and platelet rich plasma, along with the use of scaffolds, enhances growth factor release, infection resolution, and new blood vessel formation – all processes required for healthy wound healing," explained Stadel.

"We are currently studying a diabetic wound healing model in mice for proof of concept and safety. Currently, treatment of diabetic wounds has an estimated cost of between \$25 and \$50 billion annually. CordHeal's lifesaving, life-enhancing and cost savings potential is dramatic," Stadel concluded.

Cleveland Cord Blood Center 2008 to 2019





Cleveland Cord Blood CENTER

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Dr. Donald J. and Ruth Weber Goodman Philanthropic Fund

Leadership

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Marcie R. Finney, M.S., MBA, Executive Director

Wouter J. Van't Hof, Ph.D., Cord Blood Bank Director/Processing Facility Director

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Bruce Goodman, Board Chair

Alexander Katz, Treasurer

Mary J. Laughlin, M.D.

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